Comment-Response Document 2018-10

Appendix
to ED Decision 2019/010/R

RELATED NPA: 2018-10 — RMT.0690 — 4.4.2019

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1. Summary of the outcome of the consultation

During the NPA 2018-10 consultation, 309 comments from 31 stakeholders were received.

The list of stakeholders who commented on NPA 2018-10 included national aviation authorities (NAAs), type certificate holders (TCHs), general aviation (GA) associations, manufacturers of parts, aircraft owners, and others.

The following Table 1 shows the number of comments received from each commentator:

Commentators	**# of comments**
ADAC Luftfahrt Technik GmbH	3
Aerostar International, Inc.	1
AESA (NAA Spain)	9
Airbus Helicopters	8
CAA CZ	14
CAA-NL	2
DGAC Deputy Head of aircraft and operations rulemaking department	18
Diamond	1
EUROCONTROL	39
Europe Air Sports	18
European Powered Flying Union	20
European Sailplane Manufacturers	9
FAA	4
FLARM Technology	22
FNAM	71
Garmin International	17
GdF	2
Genave Italiana SNC	1
General Aviation Manufacturers Association / Hennig	3
John SCHWARZ	1
Letecké dílny Medlánky	1
Luftfahrt-Bundesamt	4
Martin Ryff	7
NATS	5
PPL/IR Europe	3
RECTIMO AVIATION	8
Royal Netherlands Aviation Organisation	1
Samionics / General Aviation Avionics	6
Siegfried LANITZ	1
The Norwegian Air Sports Federation	9
UK CAA	1
	Total: 309

Table 1

The subjects that received the highest number of comments are listed here in Table 2:

Subject	**# of comments**
(General Comments)	15
NPA 2018-10	1
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Standard Change CS-SC086a	9
Standard Change CS-SC105a	10
Standard Change CS-SC106a	4
Standard Change CS-SC107a	7
Standard Change CS-SC151b	1
Standard Change CS-SC152b	4
Standard Change CS-SC201b	6

Subject	# of comments
Standard Change CS-SC206a	7
Standard Change CS-SC207a	5
Standard Change CS-SC401c	6
Standard Repair CS-SR802c	2
4. Impact assessment (IA)	1
5. Proposed actions to support implementation	1

Table 2

The commentators were in general supportive of the proposed amendments to CS-STAN.

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

The majority of the comments that were submitted were either accepted or partially accepted, as shown here in Table 3:

	ACCEPTED	PARTIALLY ACCEPTED	NOTED	NOT ACCEPTED	Σ
# of comments	88	95	64	62	*309*
percentage	28 %	31 %	21 %	20 %	*100*

Table 3

As several comments were accepted or partially accepted, the text proposed by NPA 2018-10 has been significantly improved.

The list of individual comments that were received, and the responses to them, is provided in Chapter 2.

A summary of the comments and of the changes that were introduced to the NPA text that EASA wants to highlight is provided below.

— Definition of the scope of general aviation (GA)

Some commentators proposed to establish a process in order to clearly define the scope of GA. This proposal is clearly outside the perimeter of CS-STAN; additionally, there is no need to clarify the applicability of CS-STAN. In fact, 21.A.90B and 21.A.431B already provide a clear definition of the applicability of CS-STAN without referring to the scope of GA.

— Definition of complex motor-powered aircraft

Some commentators highlighted that the definition of complex motor-powered aircraft is no longer present in the EASA Basic Regulation (Regulation (EU) 2018/1139), and proposed to introduce the current definition into CS-STAN.

EASA takes this issue into consideration; however, according to the transitional provisions of Article 140, it is possible to use this term with the known meaning until the adaption is performed.

Therefore, for the time being, it is not deemed necessary to introduce the definition of 'complex motor-powered aircraft' into CS-STAN. This subject will be addressed during the next regular update of CS-STAN.

— CAMO responsibilities

Some commentators proposed to further clarify the responsibilities of the CAMO in relation to the embodiment of standard changes (SCs) or standard repairs (SRs).

It is to be noted that the vast majority of modifications and repairs that are carried out according to CS-STAN need to be released by certifying staff, who are responsible for the proper execution of the SC or SR.

With regard to continued airworthiness, instructions for continued airworthiness have to be followed, which have to be verified during the airworthiness review.

— Risk of airspace congestion due to ADS-B out installations

Some commentators raised concerns regarding the possibility of installing ADS-B out systems on GA aircraft by means of CS-STAN. According to these comments, there could be overloading/jamming on the 1090 MHz frequency with many position signals indicated as low-quality information, rendering them useless for aviation purposes. Unnecessary congestion of the 1090 MHz frequency can significantly deteriorate the ATC surveillance system and, as such, this constitutes a safety drawback.

The proposed text of CS-SC005a has been revised, and it specifies three possible ADS-B OUT configurations. EASA used FAA AC 20-165B to set the quality indicators. In all configurations, latency is reduced by a direct connection from the transponder to the GNSS source.

The voluntary broadcast of ADS-B data from some GA aircraft is not expected to overload the frequency. If it did, this would mean that the Mode-S/ADS-B ground infrastructure in Europe would have to be revisited anyway. The traffic increase on 1090 MHz as a result of one ADS-B OUT GA aircraft is likely to be negligible when compared with the data traffic caused by ACAS-equipped aircraft in the same airspace. For example, one ACAS-equipped aircraft may create up to 30 replies per second in its vicinity, while one ADS-B OUT GA aircraft will transmit ADS-B reports only twice per second on the 1090 MHz frequency.

The main sources of frequency congestion are identified in the SESAR deployment manager report: frequency congestion is the outcome of ACAS equipment that does not use hybrid surveillance and Mode S interrogations[1].

On the other hand, the number of mid-air collisions between VFR aircraft, which often lead to fatalities, does not seem to be decreasing. Any traffic information, even of the lowest quality, is valuable for awareness for VFR flights. Consequently, these CS-STAN proposals for ADS-B OUT are expected to facilitate installations that broadcast indicators of the adequate quality that can be used by the receiving applications.

[1] https://ec.europa.eu/transport/sites/transport/files/20180515-sesar-ads-b-report.pdf

— CS-SC002b — Installation of Mode S elementary surveillance equipment

The initial proposal consulted by EASA tried to combine the Mode S elementary surveillance with enhanced surveillance. As reported by many commentators, this combination could have generated misleading interpretations.

In fact, aircraft that are eligible to embody this SC are mandated to be equipped with elementary surveillance in some sectors of airspace; however, they are not required to be fitted with enhanced surveillance.

As a consequence, CS-SC002b has been modified to exclusively address Mode S elementary surveillance. Enhanced surveillance has been moved to CS-SC005a. Aircraft that are eligible to be modified in accordance with this SC can use it to comply with the Mode S elementary surveillance airspace requirement.

CS-SC005a refers to CS-SC002b for the Mode S transponder installation.

— CS-SC005a — Installation of an ADS-B OUT system combined with a transponder system

More than 70 comments were submitted on the proposed text of CS-SC005a and CS-SC006a, as many commentators reported difficulties in their interpretation, as both of them addressed the same subject (i.e. ADS-B out installations).

As a result, EASA has combined these two proposed SCs into CS-SC005a, also including the enhanced surveillance part that was initially proposed in CS-SC002b.

The resulting CS-SC005a offers the possibility to embody three different configurations that broadcast ADS-B reports with different quality indicators. The main purpose of these installations is to enhance the 'see and avoid' function for airborne traffic awareness.

Configuration 1 complies with AMC 20-24. The quality indicators comply with the ADS-B industry standards (Eurocae/RTCA). EASA has specified those quality indicators in a manner that is consistent with FAA AC 20-165B.

In all three configurations, the transponder and its installation are certified.

The level of approval of the GNSS source differs between the three configurations. This difference is reflected in the quality indicators.

It is to be noted that the installation of ADS-B-only transceivers (non-transponder-based ADS-B, also known as Downlink Format DF=18) is not covered by CS-STAN.

— CS-SC037a — Exchange of a main aircraft battery

Given the simplicity of this modification, and as recommended by many commentators, the release to service of this SC has been amended to allow the pilot-owner to release the aircraft into service after executing this SC.

— CS-SC038a — Installation of DC to DC converters

The scope of this SC has been amended to clarify that the powering of pilot devices through DC to DC converters embodied by means of this SC is acceptable.

Additionally, it has been clarified that this SC cannot be used where the converter is intended to power aircraft systems that are necessary for continued safe flight, nor to comply with airspace regulations.

— CS-SC058b — Installation of traffic awareness beacon system (TABS) equipment

Many comments and suggestions for the amendment of the proposed revision of CS-SC058a were submitted by stakeholders. As all these proposals require further assessments by EASA, in particular on the supporting technical reference (ETSO C199), it has been decided to defer the publication of CS-SC058b.

This SC is therefore kept at its current version (i.e. CS-SC058a).

— Solar panels

The installation requirements for solar cells on sailplanes have been slightly relaxed in accordance with the proposals from commenters.

— CS-SC-086a exchange of balloons bottom-ends

This SC has been amended in order to:

- introduce continued airworthiness aspects;
- remove the limitations of rotation valves; and
- provide more guidance on installation instructions.

— CS-SC-207a exchange of the fuel cylinders on hot air balloons

SIB 2018-14 has been added to recommend the installation of quarter-turn ball valves.

Additionally, continued airworthiness aspects have been introduced.

2. Individual comments and responses

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

(a) **Accepted** — EASA agrees with the comment, and any proposed amendment is wholly transferred to the revised text.

(b) **Partially accepted** — EASA either agrees partially with the comment, or agrees with it but the proposed amendment is only partially transferred to the revised text.

(c) **Noted** — EASA acknowledges the comment but no change to the existing text is considered to be necessary.

(d) **Not accepted** — EASA does not agree with the comment or the proposed amendment.

CRD table of comments, responses and resulting text

(General Comments)	-

comment	*31* comment by: *European Powered Flying Union* European Powered Flying Union (EPFU) thanks the Agency for the preparation of NPA 2018-10, the proposed provision are highly welcomed by our community. Some 50 CS-STAN have been published up to now, many of the new provisions still contain significant limitations, restricting their usefulness. For example, data connectivity between in-cockpit devices as well as the outside world is a quickly growing enabler for more safe aviation, yet this CS-STAN Issue 3 offers only very few ways to increase in-cockpit data connectivity using Standard Changes. We would welcome EASA to promote activities for data interoperability standards and validations, which would enable more "networked" aircraft. Quite many provisions are contrasting with the performance-based approach. While the texts do mostly represent "sound aviation engineering practice", a side effect is that they lock in the current technology (i.e. a new better and safer technology solution can only be deployed after CS-STAN is updated). The current structure of CS-STAN will most probably become a major administrative burden over time. An alternative solution could be to replace it with more general-level performance-based regulations which refer to industry publications describing best aviation engineering practices. Furthermore, we invite the Agency to consider the comments presented by PPL/IR Europe on the aspects dealing with electronic conspicuity, particularly when safety benefits are at stake
response	Not accepted An adequate risk assessment regarding the possible impacts of WLAN / Bluetooth or wired connections on existing avionics and electric systems is required to support the safety of the proposed change.

	CS-STAN should not be confused with other certifications specifications setting the minimum airworthiness standards to be complied with; in fact, it is essentially an enabler for the simplified embodiment of well-known changes or repairs on GA aircraft. Its provisions need to be precise enough to ensure safe installations preventing misuses.

comment	*71* comment by: *UK CAA* Thank you for the opportunity to comment on this NPA 2018-10, please be advised that there are no comments from the UK CAA.
response	Noted

comment	*72* comment by: *Samionics / General Aviation Avionics* We still have requests for DME installations and a DME installation no more difficult than a transponder installation iaw CS-SC002b thus we suggest that the word "exchange" is replaced with "installation" in the 3 ea standard changes below. CS-SC0054b - **Exchange** of DME CS-SC0055b - **Exchange** of ADF equipment CS-SC0056b - **Exchange** of VOR equipment Thanks for all hard work put into improving CS-STAN and extend its useability. /Samionics
response	Not accepted See the response to comment #70.

comment	*75* comment by: *DGAC Deputy Head of aircraft and operations rulemaking department* DGAC France thanks the Agency for providing regular modifications adding new standard changes (SC) and standard repairs (SR) and improvements/clarifications to existing ones.
response	Noted

comment	*103* comment by: *Europe Air Sports* EAS General Comments: 1. Europe Air Sports welcomes this update to CS-STAN allowing operators to modernise their aircraft more easily. 2. However, one concern arises: How to handle pilot familiarisation training for newly installed avionics? Safety news from FAA/NTSB indicate the pilot's low familiarity

with advanced electronic systems is a significant contributing factor in many accidents. The CS-STAN does not address these risks other than requiring operating instructions to be included in the AFM. How is the pilot familiarisation ensured? We suggest a co-operation with the Flight Crew Licensing section in order to find a solution.

3. Including Issue 3, the number of CS-STAN standard changes now approaches 50. But unfortunately many of the new provisions in CS-STAN still contain significant limitations, restricting their usefulness.
For example, data connectivity between in-cockpit devices as well as the outside world is a quickly growing enabler for more safe aviation, yet this CS-STAN Issue 3 offers only very few ways to increase in-cockpit data connectivity using Standard Changes. We would welcome EASA to promote activities for data interoperability standards and validations, which would enable more "networked" aircraft.

4. Several of the CS-STAN provisions are quite detailed and of a prescriptive nature, contrasting with the performance-based approach. While the texts do mostly represent "sound aviation engineering practice", a side effect is that they lock in the current technology (i.e. a new better and safer technology solution can only be deployed after CS-STAN is updated). With the number of Standard Changes still increasing, the current structure of CS-STAN is therefore on a path to become a major administrative burden over time as well as a delaying factor for operators eager to install the latest technology. An alternative solution could be to replace CS-STAN with more general-level performance-based regulation which refers to industry publications describing sound aviation engineerning practices.

response

Not accepted

1) Noted

2) Not accepted

As a general principle, the certification of a change or repair to a GA aircraft that is not affected by OSD (other than MMEL) does not include provisions for pilot training or other different types of training.

This subject is applicable to any type of change, it is addressed by flight standard regulations, and the necessary procedures are already in place.

3) Not accepted

Refer to the response to comment #31.

4) Not accepted

Refer to the response to comment #31.

comment

133 comment by: *FNAM*

The FNAM (Fédération Nationale de l'Aviation Marchande) is the French Aviation Industry Federation/ Trade Association for Air Transport, gathering the following members:

- CSTA: French Airlines Professional Union (incl. Air France)
- **SNEH: French Helicopters Operators Professional Union**
- CSAE: French Handling Operators Professional Union
- **GIPAG: French General Aviation Operators Professional Union**
- GPMA: French Ground Operations Operators Professional Union
- EBAA France: French Business Airlines Professional Union

And the following associated members:

- FPDC: French Drone Professional Union
- UAF: French Airports Professional Union

The GIPAG (Groupement des Industriels et professionnels de l'Aviation Générale) is the French Association for General Aviation Professionnels representing all sectors in General Aviation such as :

- **Maintenance**
- Aerial Work
- Commercial Air Transport
- Training
- Others services (insurances, manufacturers, etc.)

The comments hereafter shall be considered as an identification of some of the major issues that French industry asks EASA to discuss with third-parties before any publication of the proposed regulation. In consequence, the following comments shall not be considered:

- As a recognition of the third-parties consultation process carried out by the European Parliament and of the Council;
- 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 and GIPAG have (or may have) no comments about them, neither the FNAM and GIPAG accept or acknowledges 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.

FNAM and GIPAG thank EASA for updating applicable European requirements to obtain more flexibility for General Aviation organizations. This first step for more proportionate rules for GA may help to maintain and repair aircraft used for GA activities. French General Aviation organizations welcome all changes supporting a performance risk based approach for more proportionate European rules.

This issue has already been notified during EASA Annual Safety Conference in Vienna: On the one hand, some stakeholders and even Patrick KY seemed to consider during debates that commercial organizations are not part of General Aviation activities. On the other hand, FNAM and GIPAG remind that ECOGAS, which is mainly defending professional activities in General Aviation, is always consulted and is part of EASA

General Aviation Committee although, General Aviation is considered as other than commercial operations by most of stakeholders and some EASA personalities.

Plus, this lack of definition is also the origin of most of the issues faced by General Aviation organizations due to non-proportionate and non-adapted European regulations to their size and specific risks. For example, all issues presented during General Aviation Part-145 Taskforce are directly linked to the lack of General Aviation definition, such as the lack of Certifying Staff due to the lack of Part-147 training available for each and every aircraft types.

Consequently, scopes of all proposed new dispositions for modifications, installations or reparations appear non-consistent with General Aviation operational reality. Proposed scopes are mainly limited to other than complex motor-powered aircraft, or aircraft with a maximum cruising speed in ISA conditions below 250kt or ELA2 although General Aviation organizations are maintaining also complex aircraft and ELA1 aircraft. Complex aircraft may also be used for General Aviation purpose (aerial work, commercial air transport, etc.).

In order to ensure efficient understanding of this EASA proposal, FNAM would like to ensure that all European stakeholders and EASA have convergent interpretations on General Aviation scope of activities. Otherwise, all comments, including FNAM comments, might be non-consistent with EASA interpretations and expectations. Implementation of EASA proposed disposals may also impact the European level-playing-field objective since all Member States may have their own interpretation of General Aviation scope.

response

Noted

Refer to the response to comment #234.

comment

165 comment by: *The Norwegian Air Sports Federation*

Norges Luftsportforbund (NLF – The Norwegian Air Sports Federation) strongly supports the extension of CS-STAN into further areas. While CS-STAN is becoming an extensive document with a number of prescriptive requirements, it provides a fresh approach supporting the introduction of new safety-enhancing technologies. NLF could imagine a more performance-based approach in the future, but it is in NLF's view more important to include new areas than revising the approach as such.

Hopefully CS-STAN Issue 3 and experience collected through the use of CS-STAN could pave the way for a more performance-based approach in the future.

As a general comment, we would like to encourage the Agency to look into further options for pilot-owners to be able to release the aircraft to service after the change has been performed. Operations which may be very simple indeed – such as replacing "direct replacement" aircraft main batteries – should be possible for pilot-owners to perform and release.

response

Noted

Refer to the response to comment #31.

comment	*166* comment by: *PPL/IR Europe* I welcome the attention on electronic conspicuity in CS-SC002c, CS-SC005a, CS-SC006a. However, the conditions remain too restrictive. Provided data quality indicators are set to appropriate values (which may include zero), there is a net safety benefit in permitting equipage with any system, regardless of the quality. In the UK, nationally regulated aircraft are able to use LAA MOD 7 or 14, with a net increase in safety. See http://www.lightaircraftassociation.co.uk/2016/News/mod.html The ludicrous result of the difference in regulatory approach is that an ADS-B in device warns flawlessly of conflict with a 1930s Tiger Moth (nationally regulated), but not a Piper Cherokee (EASA regulated). EASA must look at net safety benefit. The risks associated with a permissive approach are negligible and the benefits are huge.
response	Partially accepted EASA considers the net safety benefit argument, and anticipates that more options might be proposed in a subsequent revision of CS-STAN. However, SCs, which are embodied in compliance with these certification specifications, are not subject to any approval process. Therefore, those SCs must be straightforward to implement and must exclude any design evaluation. Light aircraft association (LAA) MODs 7 and 14 contain an assessment process. EASA proposes to accept declarations of compatibility from manufacturers in some cases. Other proposals from the community and from manufacturers to replace simple design evaluations are welcome, and they will be considered during the next amendment of CS-STAN.

comment	*233* comment by: *RECTIMO AVIATION* **Navigability monitoring responsibilities** For European countries with Latin laws, the maintenance organisation will be considered as “knowing” compared to owners or operators in associations by judges. Therefore, the CAMO should have the responsibilities of navigability monitoring and following of CS-STAN, even if it is not this CAMO which has asked for this CS-STAN changes or installation. **PROPOSAL** Clarify that responsibilities rely on aircraft CAMO even if it is not this CAMO which has asked for this CS-STAN changes or installation.
response	Noted The vast majority of modifications and repairs carried out according to CS-STAN need to be released by certifying staff, who are responsible for the proper execution of the SC or SR.

	With regard to continued airworthiness, instructions for continued airworthiness have to be followed, which have to be verified by the airworthiness review. Please also see AMC M.A.710.
comment	*234* comment by: *RECTIMO AVIATION* **Definition of scope of G.A** General Aviation aircraft and activities still remain undifined by EASA. **PROPOSAL** Discute and debate for defining G.A. scope
response	Noted The request to organise a debate to define the scope of GA, which is, from its origin, an open definition, is understandable, but it is not relevant to the NPA for CS-STAN. The scope and applicability of CS-STAN is clearly defined by 21.A.90B and 21.A.431B; therefore, a definition of GA is not needed in order to make it clearer.
comment	*240* comment by: *RECTIMO AVIATION* For All CS-SC, Extend Applicability and eligibility to : All ELA1, ELA2, and other than complex motor-powered aircraft with MTOW below 5700Kg using in CAT/SPO/NCO operation All Complex motor-powered aircraft with MTOW below 5700Kg unsing in NCC/SPO operation and not using in CAT operation
response	Not accepted For each SC/SR, an assessment has been made to define its applicability. The proposed overall extension of its applicability would not be justified by any risk assessment.
comment	*271* comment by: *Europe Air Sports* General comments continued 5. EAS welcomes the attention on electronic conspicuity in CS-SC002c, CS-SC005a, CSSC006a. However, the conditions remain too restrictive. Provided data quality indicators are set to appropriate values (which may include zero), there is a net safety benefit in permitting equipage with any system, regardless of the quality. In the UK, nationally regulated aircraft are able to use LAA MOD 7 or 14, with a net increase in safety. See http://www.lightaircraftassociation.co.uk/2016/News/mod.html

	The ludicrous result of the difference in regulatory approach is that an ADS-B-in device warns flawlessly of conflict with a 1930s Tiger Moth (nationally regulated), but not a Piper Cherokee (EASA regulated). EASA must look at net safety benefit. The risks associated with a permissive approach are negligible and the benefits are huge.
response	Partially accepted Refer to the response to comment #166.

comment	*274* comment by: *Martin Ryff* Thanks EASA for submitting this important document for comments.
response	Noted

comment	*281* comment by: *European Sailplane Manufacturers* The European sailplane manufacturers appreciate very much this further amendment of the CS-STAN. The concept of standard changes and repairs has helped a lot to make life easier for a wide number of users and owners and maintenance personnel within the gliding community. It is also encouraging to see that inputs from the community find again the way into CS-STAN, allowing new technical developments and further standard changes & repairs to become included.
response	Noted

comment	*282* comment by: *European Sailplane Manufacturers* At several locations in the document the term "complex motor-powered aircraft" is used, which comes from a definition used in the old basic regulation 216/2008. In the new basic regulation 218/1139, this term is only mentioned in Art 140 about the transitional provisions, but not longer included (i.e. the definition is not longer included). Therefore, it would be useful to define the term within the CS-STAN (using the same definition as in 216/2008).
response	Noted EASA takes into consideration that the New Basic Regulation no longer contains the definition of ‘complex motor-powered aircraft’; however, according to the transitional provisions of Article 140, it is possible to use this term with its known meaning until the adaptation is completed.

Therefore, for the time being, it is not necessary to introduce the definition of 'complex motor-powered aircraft' into CS-STAN. This subject will be addressed during the next regular update of CS-STAN.

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comment *49* comment by: *Royal Netherlands Aviation Organisation*

Dear EASA,

I like to make two general comments on behalve of glider operaters in The Netherlands (some 600 aircraft with / without enigine). The gliders/sail-panes are owned by clubs or individuals. Glider pilots (aproximately 4000) and clubs (some 30) are unified in one umbrella association (KNVVL).

Egbert Veldhuizen, chairman committee continuing airworhtines KNVVL - Gliding

One: Minimum Equipment according to CS-22
Since ages we are using conventional magnetic compasses and pneumatic Altimeters and Airspeedindicators in gliders and powererd gliders. These components are based on old techniques and are quite cumbersome w.r.t. maintanance. Pneumatic instruments are quite susceptablele to shock and vibration. Often these instrumens are untight. Compasses are unreliable and inaccurate (susceptable to magnetic fields).
These days we have modern alternatives in the form of electronic sensors. These sensors are very reliable, very power efficient, very accurate, shock and vibration resistant, low weight (and cost effective). Considering the millions they are produced is, they are a prooven concept. As matter of fact many glider pilots (if not all) use electronic devices with modern electronic sensors to determine "position, heading, altitude, airspeed"). Without these modern eletronics aviation would be by far less safe. Consider we would all still be flying cross country with a paper map, a magnetic compass and a pneumatic altimeter. I guarantee you that the number of airspace infringements would go over the top as these old fashioned outdated technologies are unsuitable for the demands of the complex airspace we operate in today. Since all (cross country) pilots in practise only use modern electronic devices, I like to propose a new CS-STAN that allows the removal of compass and or pneumatic altimeter / airspeedindicator and replacement by electronic devices. Either dedicated devices, like they are available already from e.g Garmin, LX-Navigation and many others, or even as apps on mobile devices. I would further suggest these electronic devices are acceptable regardles of ETSO or TSO approvals. Since ETSO or TSO only make equipment expensive and not more reliable or more accurate.
If it is complex for EASA to introduce such a CS-stan immediately, then consider a working group (presenting results in max 12 months) to come up with data substantiating what is safer (old stuff from before WW=II or modern electronics; food for thought .... the old technology also vanished in automotive, cell phones would not even be possible with pneumatic instruments or magnetic compass). Other consiederation: We are allowing drones in our airspace: which drone is flying with a magnetic compass, determing position with a paper map and controlling altitute with a baromatic altimeter... ?

two replace many (or all) CS stan documents by one general CS-stan
The objective is to make aviation safe or even safer. That is not accomplished producing more and complex documents. Even more adversily are changes to existing documents. No sound human being can have good knowledge of everything that is being published by EASA and can keep track of the changes and the implications.

To safe time, lentghy procedures and improve safety, we suggest that for ELA-1 gliders and powered gliders that are NOT commercially used, EASA replaces all the detailed CS-STANs by just one document with roughtly the following content:

- all modifications / alternative equipment is allowed under the condition:
  - the limits for W&B, mass of no lift producing parts, speeds etc. are not changed compared to data in the TCDS
  - addtional equipment and modifcations are firmly mounted and withstand crashloads of 10G or more
  - additional equipment / modification may not cause fire hazards
  - additional equipment may not affect the proper functioning of any flight critical system
  - additional equipment may not hinder the pilot to perform his piloting task.
  - modifications must be well documented and performed in accordance with AC 4313-B, Flickfibel Heanle, Jcaobs Werkstattpraxis.

By making one CS-STAN we can create clarifty (everybody can read, understand and apply) such an instruction. We also make aviation safer because modern systems can be easily introduced in gliders. We would NOT have to wait for a CS STan to be published (as we have with transponders, ELT's, 8,33 kHz radio's, anti collision equipment, navagiation equipment, headrest, batteries etc).

Thanks for considering the above. Both are based on experiences from the field and feedback from pilots, clubs, maintenance technicians.

response Not accepted

The first comment goes beyond the scope of CS-STAN and cannot be accepted.

Regarding the structure of CS-STAN, this subject has already been discussed in the past, and the current format has been considered to be the most suitable for use in GA.

Having only one CS-STAN that would cover everything would be more complex, more demanding and more difficult to implement.

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comment *32* comment by: *European Powered Flying Union*

Executive Summary

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Last lines

"no social impacts" you write. We think CS-STAN will have a social impact.

Rationale:
If more money is available for flying due to lowered maintenance costs more hours will be flown. The expected safety benefit already is mentioned.

response

Noted

The concept of CS-STAN was initially proposed through NPA 2014-24, which included a regulatory impact assessment.

According to this impact assessment, CS-STAN may have a significant impact on the safety and economic fields. Although it is not possible to exclude a positive impact on the social field, this is considered to be marginal in comparison with the others.

comment *104* comment by: *Europe Air Sports*

NPA text:
"..expected to have no social impact..."

EAS comment: We expect a moderate positive social impact.

Rationale: Gives an incentive for operators to modernise existing aircraft. This increases the motivation for students, passengers and pilots to fly more compared to unmodernised aircraft.

response

Noted

The concept of CS-STAN was initially proposed through NPA 2014-24, which included a regulatory impact assessment.

According to this impact assessment, the CS-STAN may have a significant impact on the safety and economic fields. Although it is not possible to exclude a positive impact on the social field, this is considered to be marginal in comparison with the others.

comment *134* comment by: *FNAM*

ISSUE – Definition of General Aviation
FNAM and GIPAG thank EASA for updating applicable European requirements to obtain more flexibility for General Aviation organizations. This first step for more proportionate rules for GA may help to maintain and repair aircraft used for GA activities. French General Aviation organizations welcome all changes which may support a performance risk based approach for more proportionate European rules. Nevertheless, General Aviation aircraft and activities still remain undefined and non-discussed yet by EASA nor by European Committees. FNAM and GIPAG wonder thus what is the scope of EASA's proposals. Since General Aviation definition is the

bedrock of this EASA's proposal, FNAM and GIPAG suggest to open the debate and define General Aviation first in General Aviation Committee, then for all stakeholders.
In order to ensure efficient understanding of this EASA proposal, FNAM would like to ensure that all European stakeholders and EASA have convergent interpretations on General Aviation scope of activities. Otherwise, all comments, including FNAM comments, might be non-consistent with EASA interpretations and expectations. Implementation of EASA proposed disposals may also impact the European level-playing-field objective since all Member States may have their own interpretation of General Aviation scope.
PROPOSAL
Organize debate for defining General Aviation scope

response | Noted

Refer to the response to comment #234.

comment | *135* comment by: *FNAM*

ISSUE – Navigability monitoring responsibilities
FNAM and GIPAG thank EASA for allowing more flexibilities for installing or exchanging parts and equipment on General Aviation aircraft. Nevertheless, FNAM and GIPAG wonder on whom will rely the responsibility of navigability monitoring after such changes or installations. Specific information and specific directives may have to be provided on the new equipment and on the compatibility between the aircraft and the equipment. For European countries with Latin laws, FNAM and GIPAG fear that this responsibility will rely on the maintenance organizations because professional will be considered as "knowing" compared to owners or operators in associations by insurances and judges. Therefore, FNAM and GIPAG suggests that CAMO should have the responsibilities of navigability monitoring and following of CS-STAN, even if it is not this CAMO which has asked for this CS-STAN changes or installation.
PROPOSAL
Clarify that responsibilities rely on aircraft CAMO even if it is not this CAMO which has asked for this CS-STAN changes or installation

response | Noted

Refer to the response to comment #233.

1. About this NPA p. 3-4

comment | *136* comment by: *FNAM*

ISSUE – Impact Assessment
"This NPA does not require a regular impact assessment (RIA)"
FNAM and GIPAG fear that without impact assessment, stakeholders may not evaluate the real impact of EASA proposals on their activities. For example, organizations maintaining other than complex but also complex motor-powered aircraft may be impacted.

PROPOSAL
Provide an impact assessment

response

Not accepted

The concept of CS-STAN was initially proposed through NPA 2014-24, which included a regulatory impact assessment.

According to this impact assessment, CS-STAN may have a significant impact on the safety and economic fields.

The regular update of CS-STAN is intended to expand the number of existing SCs and SRs as well as improve, as needed, the existing ones. This process does not affect the impact assessment performed as part of the NPA 2014-24; therefore, there is no need to perform new impact assessments.

2. In summary — why and what | 2.1. Why we need to change the rules — issue/ratio p. 5

comment

33 comment by: *European Powered Flying Union*

2.1 Why we need to change the rules - issue/rationale
page 5/65
third textblock

Within the text we find "Part 21", as here, sometimes "Part-21"

Question:
What is correct?

response

Accepted

The correct reference is 'Part 21', so the text has been amended accordingly.

Actually, according to Regulation (EU) No 748/2012, its Annex I is called 'Part 21', without hyphen. In total, in the mentioned Regulation there are about 60 occurrences of this term and it appears like this everywhere. One of these occurrences (the very first one) is the definition of the term under Article 1.

comment

137 comment by: *FNAM*

ISSUE – General Aviation definition
FNAM and GIPAG agree and thank EASA for supporting operations of "*General Aviation aircraft in Europe by reducing the regulatory burden for the embodiment of simple changes and repairs in certain aircraft*". Nevertheless, since General Aviation scope is not defined, FNAM and GIPAG fear that all stakeholders could misunderstand EASA proposed disposals and not implement them as expected by the Agency. (see FNAM and GIPAG General Comment)
PROPOSAL
Organize debate for defining General Aviation scope

response | Noted

Refer to the response to comment #234.

comment | *138* comment by: *FNAM*

ISSUE – Navigability monitoring responsibilities
FNAM and GIPAG thank EASA for allowing more flexibilities for installing or exchanging parts and equipment on General Aviation aircraft. Nevertheless, FNAM and GIPAG wonder on whom will rely the responsibility of navigability monitoring after such changes or installations. Specific information and specific directives may have to be provided on the new equipment and on the compatibility between the aircraft and the equipment. For European countries with Latin laws, FNAM and GIPAG fear that this responsibility will rely on the maintenance organizations because professional will be considered as "knowing" compared to owners or operators in associations by insurances and judges. Therefore, FNAM and GIPAG suggests that CAMO should have the responsibilities of navigability monitoring and following of CS-STAN, even if it is not this CAMO which has asked for this CS-STAN changes or installation.
PROPOSAL
Clarify that responsibilities rely on aircraft CAMO even if it is not this CAMO which has asked for this CS-STAN changes or installation

response | Noted

Refer to the response to comment #233.

2. In summary — why and what | 2.2. What we want to achieve — object p. 5

comment | *139* comment by: *FNAM*

ISSUE – General Aviation definition
FNAM and GIPAG agree and thank EASA for supporting "*General Aviation in Europe by reducing the regulatory burden for aircraft modification/repair, and to promote safety*". Nevertheless, since General Aviation scope is not defined, FNAM and GIPAG fear that EASA proposed disposals could not be efficiently understand and implement. (see General Comment)
PROPOSAL
Organize debate for defining General Aviation scope

response | Noted

Refer to the response to comment #234.

comment | *140* comment by: *FNAM*

ISSUE – Navigability monitoring responsibilities
FNAM and GIPAG thank EASA for allowing more flexibilities for installing or exchanging parts and equipment on General Aviation aircraft. Nevertheless, FNAM

	and GIPAG wonder on whom will rely the responsibility of navigability monitoring after such changes or installations. Specific information and specific directives may have to be provided on the new equipment and on the compatibility between the aircraft and the equipment. For European countries with Latin laws, FNAM and GIPAG fear that this responsibility will rely on the maintenance organizations because professional will be considered as "knowing" compared to owners or operators in associations by insurances and judges. Therefore, FNAM and GIPAG suggests that CAMO should have the responsibilities of navigability monitoring and following of CS-STAN, even if it is not this CAMO which has asked for this CS-STAN changes or installation. **PROPOSAL** Clarify that responsibilities rely on aircraft CAMO even if it is not this CAMO which has asked for this CS-STAN changes or installation
response	Noted Refer to the response to comment #233.

2. In summary — why and what | 2.3. How we want to achieve it — overview of the propo p. 5-8

comment	*141* comment by: *FNAM* **ISSUE – New abbreviations** FNAM and GIPAG would like to warn that any new abbreviations should be also defined in order to ensure an efficient understanding of EASA proposals. All these new definitions and abbreviations should also be consistent with all current European regulations. **PROPOSAL** Define all new terms Ensure harmonization between European definitions
response	Accepted All the abbreviations have been explained in CS STAN.80 within Subpart A

comment	*176* comment by: *Garmin International* **Paragraph 2.3 - Page:13:** There is a lack of clarity about what seems to be an intent to allow various combinations of transponder, ADS-B Out, and position sources under CS-STAN. The individual Standard Changes can be difficult to interpret in terms of the combinations of equipment that are covered. The agency should consider confirming the combinations that are intended to be covered by CS-STAN, and publishing that list in Subpart A. From the individual Standard Changes (SC002c, SC005a, SC006a, SC052c, and SC058b), it is assumed the following combinations are covered:

1. **an ETSO-C112() and ETSO-C166b-compliant/certified transponder paired with a non-certified/qualified position source** and transmitting SIL=0 and SDA=0. It is assumed this combination is covered by CS-SC002c and CS-SC052c.
2. **an ETSO-C112() and ETSO-C166b-compliant/certified transponder paired with an ETSO-C199 Class B Position source** and transmitting SIL=1 and SDA=1 as allowed by ETSO-C199. It is assumed this combination is covered by CS-SC002c.
3. **an ETSO-C112() and ETSO-C166b-compliant/certified transponder paired with a position source certified to ETSO-C129(), ETSO-C196(), ETSO-C145(), or ETSO-C146(); no statement of AMC 20-24 compliance is available for the combination** ; and transmitting SIL=1 and SDA=1. It is assumed this combination is covered by CS-SC002c and CS-SC006a.
4. **an ETSO-C112() and ETSO-C166b-compliant/certified transponder paired with a position source certified to ETSO-C129(), ETSO-C196(), ETSO-C145(), or ETSO-C146(); a statement of AMC 20-24 compliance is available for the combination** ; and transmitting SIL and SDA as defined by AMC 20-24. It is assumed this combination is covered by CS-SC002c and CS-SC005a.
5. **an ETSO-C199 Class A device paired with an ETSO-C199 Class B Position source** and transmitting SIL=1 and SDA=1 as allowed by ETSO-C199. It is assumed this combination is covered by CS-SC058b.
6. **an ETSO-C199 Class A device paired with a position source compliant with ETSO-C129(), ETSO-C196(), ETSO-C145(), or ETSO-C146()** and transmitting SDA=1 as allowed by ETSO-C199. It is assumed this combination is covered by CS-SC058b.

response

Partially accepted

EASA agrees with the intent of the comment. Configurations for ADS-B OUT have been restructured. CS-SC002c has been modified to limit the scope to Mode S elementary surveillance. CS-SC005a used Garmin's proposal as the basis for the restructured configurations.

2. In summary — why and what | 2.4. What are the expected benefits and drawbacks of the proposal p. 8

comment

142 comment by: *FNAM*

ISSUE – Impact Assessment
"No impact analysis has been conducted"
FNAM and GIPAG fear that without impact assessment, stakeholders may not evaluate the real impact of EASA proposals on their activities. For example, organizations maintaining other than complex but also complex motor-powered aircraft may be impacted. All European regulation amendments should have a sound impact assessment.

	Even if this proposal has been prepared according to a dedicated framework, all stakeholders should be able to soundly comment this NPA and should be able to understand potential impacts on their activities. **PROPOSAL** Provide an impact assessment
response	Not accepted Refer to the response to comment #136

CS STAN.05 Embodiment of current SCs/SRs p. 9

comment	*76* comment by: *DGAC Deputy Head of aircraft and operations rulemaking department* DGAC France welcomes this new paragraph which clarifies the validity of standard changes/repairs embodied on the basis of superseded CS-STAN versions.
response	Noted

CS STAN.80 Definitions and Abbreviations p. 9-10

comment	*143* comment by: *FNAM* **ISSUE – Definition of General Aviation** FNAM and GIPAG thank EASA for updating applicable European requirements to obtain more flexibility for General Aviation organizations. This first step for more proportionate rules for GA may help to maintain and repair aircraft used for GA activities. French General Aviation organizations welcome all changes which may support a performance risk based approach for more proportionate European rules. Nevertheless, General Aviation aircraft and activities still remain undefined and non-discussed yet by EASA nor by European Committees. FNAM and GIPAG wonder thus what is the scope of EASA's proposals. Since General Aviation definition is the bedrock of this EASA's proposal, FNAM and GIPAG suggest to open the debate and define General Aviation first in General Aviation Committee, then for all stakeholders. In order to ensure efficient understanding of this EASA proposal, FNAM would like to ensure that all European stakeholders and EASA have convergent interpretations on General Aviation scope of activities. Otherwise, all comments, including FNAM comments, might be non-consistent with EASA interpretations and expectations. Implementation of EASA proposed disposals may also impact the European level-playing-field objective since all Member States may have their own interpretation of General Aviation scope. **PROPOSAL** Organize debate for defining General Aviation scope
response	Noted Refer to the response to comment #234.

comment	*144* comment by: *FNAM* **ISSUE – Cruise Speed definition** In this NPA, Cruise Speed is used for categorizing aircraft. This cruise speed is defined in "ISA conditions" and expressed in Knot. In order to ensure harmonized and efficient interpretations and implementations of EASA proposal, cruise speed should be precisely defined. Aircraft speed could be measured with different referential : True Air Speed or Indicate Air Speed. In order to ensure an efficient understanding and implementation of EASA proposed disposals, FNAM and GIPAG suggest to precise if the maximum cruise speed is measured on True Air Speed or Indicate Air Speed. Therefore FNAM and GIPAG propose to add into CS STAN-80: *« Cruise speed: For this Regulation, the cruise speed is measured in ISA condition and expressed Knot and IAS. »* **PROPOSAL** Define the abbreviation "*ISA*" and *"IAS"* *Add : « Cruise speed: For this Regulation, the cruise speed is measured in ISA condition and expressed Knot and IAS. »*
response	Accepted 'IAS' has been added to the abbreviations. The affected SC has been amended and TAS is now specified.

comment	*235* comment by: *RECTIMO AVIATION* **Definition of G.A** General Aviation scope still remain undefined **Proposal** Discute and debate for defining G.A. Scope
response	Noted Refer to the response to comment #234.

comment	*236* comment by: *RECTIMO AVIATION* **Cruise speed definition** Cruise speed is used to categorize aircraft in this NPA but definition of the cruise speed is not precise enough. **Proposal** *Cruise speed: For this Regulation, the cruise speed is measured in ISA condition and expressed in Knot and exprime in IAS.* Due to this definition add two abbreviations, add definition of ISA and IAS in this part.

response | Accepted

Refer to the response to comment #144.

comment | *237* comment by: *RECTIMO AVIATION*

IAS and ISA Abbreviation

Due to cruise speed definition add two abbreviations, ISA and IAS should be definied in this part.

Proposal

ISA : International Standard Atmosphere
IAS : Indicate Air Speed

response | Accepted

Refer to the response to comment #144.

Standard Change CS-SC002bc p. 13-14

comment | *3* comment by: *FLARM Technology*

This and many other SCs reference FAA Advisory Circular AC 43-13-2B, Chapter 1 and/or 2. Chapter 1 is however about “Wood structure” and chapter 2 is about “Fabric Covering”. Is this really the intention? The exclusive selection of either Chapter 1 or 2 in the SCs seem to have little to do with the SC. At the same time, Chapter 12 (Aircraft Avionics Systems) should be added to several of the SCs. Currently, only Chapter 11 (Aircraft Electrical Systems) is listed.

response | Accepted

The reference is reduced to keep FAA AC 43-12-2B only. Chapter 12 is added as proposed.

comment | *4* comment by: *FLARM Technology*

This SC is for a non-ADS-B-certified Mode-S transponder only (i.e. only ETSO-C112d is required (via AMC1 ACNS.D.ELS.010) but not ETSO-C166). However, it makes several statements and references giving the impression that it includes ADS-B Out/TABS and/or a GPS source, which is not the case according to Section 1. “TABS” implies also ADS-B Out. Examples:

1. The note under Section 1 states “This SC does not qualify the TABS equipment installation […]”, “Therefore, this TABS installation is not sufficient […]”. This is incorrect, since a Mode-S only installation is not a TABS installation. TABS in governed by ETSO-C199 and CS-SC058b. References to “TABS” should be removed.

2. Section 4 (two paragraphs) makes references to “voluntary transmission of additional ADS-B data”. However, this is part of CS-SC006a and CS-SC058b but as written could give the impression as being included in this SC. Also, the GPS source installation is not part of this SC, but the paragraphs could be interpreted as such.
3. Section 5 references “ground test [… of …] transmitted ADS-B data”, even if this is not part of this SC.

In addition, the newly added paragraph about the voluntary transmission of additional ADS-B data is incorrect. This seems to reference a TABS installation according to CS-SC058b. However, ETSO-C199 requires the transponder to be either certified according to TSO-C166b or a subset as defined in ETSO-C199. This is not reflected in the paragraph.

The two paragraphs about voluntary transmission of additional ADS-B data should be removed. Instead, there should be a reference to the other applicable SCs to use in such cases.

response

Accepted

The text has been completely amended to reflect this comment.

comment

5 comment by: *FLARM Technology*

Section 4 states that “An installation according to this SC cannot be claimed to be compliant with CS-ACNS Subpart D Section 4 or with AMC 20-24”. However, it can also not be claimed to be compliant with any other part of ACNS (especially Subpart D Section 2, which is possibly intended to be referenced) or other CSs.

response

Partially accepted

The proposed text was partially misleading. EASA deleted the whole paragraph. An ADS-B OUT installation is now described in CS-SC005. This CS-SC002 is intended for Mode S elementary surveillance only.

comment

6 comment by: *FLARM Technology*

EU regulations require aircraft operating IFR/GAT to carry and operate a certified Mode-S transponder (and fully approved installation). Applicability/Eligibility (Section 2) should therefore exclude aircraft certified for IFR. Alternatively, limitations, warnings and placards should be added with “VFR only”. The pilot operating the aircraft could otherwise be made to believe that the aircraft can be operated IFR, since he does not know the airworthiness requirements under which the transponder was installed.

response

Not accepted

The applicable limitations are described in the applicability/eligibility section. For those aircraft, IFR and VFR operations can be performed.

comment	*7* comment by: *FLARM Technology* The statement that the installation is not sufficient to permit the pilot to fly the aircraft into transponder mandatory zones (TMZs) should be moved/copied from the note in Section 1 to Section 4 (Limitations). In addition, limitations, warnings and placards should be added with "Not authorized for transponder mandatory zones". The pilot operating the aircraft could otherwise be made to believe that the aircraft can be operated in TMZs, since he does not know the airworthiness requirements under which the transponder was installed.
response	Partially accepted Refer to the response to comment #4.

comment	*8* comment by: *FLARM Technology* The note under section 4 states that "SC-CS006 (sic) refers to the installation of ADS-B OUT equipment that is compliant with AMC 20-24". It is however CS-SC005a that refers to such installations. CS-SC006a refers to non-compliant ADS-B Out.
response	Accepted EASA merged SC-CS005a and SC-CS006. Refer also to the response to comment #5.

comment	*9* comment by: *FLARM Technology* Section 4 states that CS-STAN cannot be used for installing the Mode-S transponder if a Class A TABS which is not certified in accordance with ETSO-C166 or ETSO-C112, or equivalent, is already installed. However, it should not be permissible to install a Mode-S transponder with CS-STAN if any type of Class A TABS or other transponder is already installed. Otherwise, it would lead to two transponders being installed in the aircraft.
response	Accepted The text has been amended in line with this comment.

comment	*26* comment by: *Luftfahrt-Bundesamt* For the voluntary transmission of ADS-B data the following is proposed: When the (E/TSO) equipment OEM has stated compatibility for a specific transponder directly connected to a specific GNSS source, position and velocity quality indicators shall be set as prescribed in the equipment OEM's official documents.(*) Accepting that would facilitate the introduction of ADSB-out installations compliant with CS-ACNS respectively FAA AC 20-165B. It can be assumed that the XPDR-GNSS combination described above has already been exhaustively tested in the frame of E/TSO investigations. There is **no** reason to always set the quality indicators to report the lowest quality.

In order to avoid confusion all TABS statements in this CS should be removed and at the beginning it should be clarified: "*This SC does not cover TABS installations*."

response

Partially accepted

CS-SC002c text has been revised and it is now only applicable to the Mode S transponder with elementary surveillance. ADS-B OUT configurations were grouped into CS-SC005a. The option with high-quality indicators in this comment is included in configuration 1 for ADS-B OUT (AMC 20-24 compliance). There is also a configuration 3 with the lowest-quality indicators in order to make it possible to enhance airborne 'see and avoid' (traffic awareness). An option with ETSO-C199 quality indictors is also added in configuration 2. The consistency of the quality indicators with FAA AC 20-165B is added in a note. Refer also to the responses to comments #5 and #152.

comment *50* comment by: *CAA CZ*

CS-SC002c—Installation of Mode S elementary surveillance equipment (amended)
Comment: The addition of the TABS system installation into the existing CS-SC002 makes the content and intention of this SC rather unclear. The previous amendment "b" of this SC was intended to enable installation of Mode S ELS transponder equipment that enables the aircraft to fly into the transponder mandatory zones (TMZ). If we understand it correctly, the newly proposed amendment "c" of this SC makes it possible to alternatively install a TABS system that is by definition not qualified to be used in TMZ. Therefore by installing the TABS system, the original intention of this SC (enabling the aircraft to fly into TMZ) is not met. Covering these two systems by one SC seems to be rather confusing. We therefore recommend you to consider creating a separate (new) SC covering the TABS system installation.

response

Partially accepted

Refer to the response to comment #5.

comment *66* comment by: *Samionics / General Aviation Avionics*

"Therefore, this TABS installation is not sufficient to permit the pilot to fly the aircraft into transponder mandatory zones (TMZs)."
Confusing, in some regions a Mode-A/C transponder is enough.

"In particular, include in the ICAs a check every two 2 years in accordance with the latest version of EASA SIB No. 2011-15."
SIB are recommendations but made mandatory for CS-SC002b. Those transponder installations approved with other means ea STC, minor change etc. are not affected.

SIB last page 5
"This is information only. Recommendations are not mandatory."

Consensus, EASA AD 2006-0265 should never have been canceled instead it should have been further amended to extend its purpose regarding transponder testing.

For purpose of this CS-STAN - maybe a mandatory test in accordance with FAA Appendix E (section encoder test) and F (transponder test) of Part 43 with reference to SIB 2011-15 would be more suitable?

Regarding installation of altitude encoder.

"...and the altitude encoder meets ETSO-C88Aa"
"...provides data according to CS ACNS.D.ELS.015"

CS.ANCS.D.ELS.015 (a)(2) "...plus or minus 38 m (125 ft)"

AMC1 ANCS.D.ELS.015 (c)(1-2) Pressure altitude resolution.

Clarify the altitude encoder resolution requirement, gillham code 100ft or serial format 25ft also with respect to CS-SC005a and CS-SC006a. And the benefits of using an encoder pressure altitude source with serial data insead of gillham code (AD 2006-0265).

response

Partially accepted

Refer to the response to comment #5.

comment

77 comment by: *DGAC Deputy Head of aircraft and operations rulemaking department*

In §5 “Manuals”, an update of the ICAs mandates the implementation of SIB N° 2011-15 provisions every 2 years. Considering the fact that aircraft applying that CS-STAN might be already equipped with the concerned equipment prior application of the CS-STAN without having to perform those checks every 2 years, this 2-year period seems too restrictive considering the expected benefits in term of safety.
France published guidelines requiring performing tests similar to SIB N° 2011-15 every 5 years. Mandating a 2 year interval will create non-justified distortions between aircraft with and without these CS-STAN applied.

So DGAC France suggests to change the §5 as follow : “Amend the Instructions for Continued Airworthiness (ICA) establish maintenance actions / inspections and intervals, if applicable. In particular, include in the ICAs:

- A check similar in term of content to EASA SIB N° 2011-15 provisions, at intervals defined an dpublished by the competent authority, or
- A check in accordance with the latest version of EASA SIB N° 2011-15 at intervals not to exceed 2 years.

response

Accepted

EASA has reworded the text in order to reflect the comment.

comment	*80* comment by: *DGAC Deputy Head of aircraft and operations rulemaking department* On the last bullet of the §3 "Acceptable methods, techniques and practices", words "CS" should be added to "ACNS.D.ELS.015".
response	Accepted The text has been amended accordingly.

comment	*89* comment by: *ADAC Luftfahrt Technik GmbH* The voluntary transmission of additional ADS-B data should be allowed to use the manufacturer system settings i.e. the System Design Assurance Level (SDA) of maximum 2, many GPS/XPDR systems are tested extensively to the required (E)TSO standards. SDA level 2 represents a major failure condition i.a.w. CS-ACNS. If GPS/XPDR systems have to be set to their lowest SDA level, many systems will be set to this value to omit a Major Change, and therefore underperform to their specification. Why should the operator be compliant with CS-ACNS if you can set the SDA value to the lowest level? Resulting costs and effort are for a Standard change significantly lower than for a major change.
response	Partially accepted Refer to the responses to comments #5, #296, and #311.

comment	*145* comment by: *FNAM* **ISSUE – 1. Purpose** One of EASA proposed changes is to introduce "*the installation of a Mode S transponder*" instead of "*installation or exchange of a Mode S transponder*". This measure is therefore more restrictive than current CS-SC002b. Since there is no impact assessment, in particular no added value to safety of flight by removing the possibility to exchange a mode S transponder, FNAM and GIPAG wonder the reason of this proposed change. This change will impact and may reduce the scope of activities of GA maintenance organizations. **PROPOSAL** Keep the possibility to exchange the Mode S transponder
response	Partially accepted The deletion of 'exchange' is not limiting the scope of this SC. In fact, as already defined in CS STAN.80: *'Installation' means the embodiment in/on the aircraft of equipment, instrument or system to provide a new function or new information not previously available at the aircraft. Unless otherwise mentioned, whenever a SC covers an 'Installation' of an equipment/instrument/system, the exchange of the equipment/instrument/ system is also covered by the same SC.*

Furthermore, to prevent any possible misunderstanding, the above definition has been further simplified within CS-STAN Issue 3.

Therefore, there is no need to state 'install or exchange'.

comment *146* comment by: *FNAM*

ISSUE - 2. Applicability/Eligibility
EASA proposed disposals ensure more flexibility for other than complex motor-powered aircraft which have a maximum cruising speed in ISA conditions below 250kt, for rotorcraft that are not complex motor-powered aircraft and to any ELA2 aircraft.
FNAM and GIPAG are not certain to understand the scope of this proposal and suggest EASA to clarify that ELA1 aircraft are included in the scope of mode S elementary surveillance equipment installation flexibility. Since ELA2 are included into the scope, there is no safety impact, otherwise a positive one, to include also ELA1 aircraft.
Moreover, the entire scope of General Aviation aircraft is not covered by this proposed disposal. General Aviation organizations are also maintaining ELA1 and complex motor-powered aircraft. Since EASA proposed disposals goal is to support operations of "*General Aviation aircraft in Europe by reducing the regulatory burden for the embodiment of simple changes and repairs in certain aircraft*", FNAM and GIPAG suggest to ensure that following aircraft are included in the scope of CS-SC002c :

- ELA1, ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

PROPOSAL
Add all General Aviation aircraft into the scope of CS-SC002c such as:

- ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

Clarify if ELA1 aircraft are included into the scope of CS-SC002c

response Partially accepted

This SC is applicable to any ELA2 aircraft, therefore ELA1 aircraft are eligible for the embodiment of this SC. The proposal for complex aircraft is rejected. The overall applicability of CS-STAN is defined in 21.A.90B and 21.A.431B

comment *147* comment by: *FNAM*

ISSUE - 2. Applicability/Eligibility

	EASA proposed disposals are defining the applicability of CS-SC002c depending on the maximum cruise speed of the aeroplane: "*which have a maximum cruise speed in ISA conditions below 250kt*". FNAM and GIPAG wonder if the definition of this maximum cruise speed will fit to each and every General Aviation aeroplanes. Moreover, aircraft speed could be measured with different referential : True Air Speed or Indicate Air Speed. In order to ensure an efficient understanding and implementation of EASA proposed disposals, FNAM and GIPAG suggest to precise if the maximum cruise speed is measured on True Air Speed or Indicate Air Speed. Therefore FNAM and GIPAG propose to add into CS STAN-80: *« Cruise speed: For this Regulation, the cruise speed is measured in ISA condition and expressed Knot and IAS. »* **PROPOSAL** Define the abbreviation "*ISA*" and *"IAS"* Add : *« Cruise speed: For this Regulation, the cruise speed is measured in ISA condition and expressed Knot and IAS. »*
response	Accepted Refer to the response to comment #144.

comment	*148* comment by: *FNAM* **ISSUE – 5.Manuals** Instruction of Continued Airworthiness are currently drown up by Design Approval Holders. Nevertheless, EASA proposed disposals introduce possibilities for maintenance organizations to amend Instruction of Continuing Airworthiness in order to establish maintenance inspections/actions. This is non-consistent with Regulation (EU) N°1321/2014 maintenance organizations privileges. Therefore, FNAM and GIPAG suggest to harmonize EASA proposals in all European requirement by amending Regulation (EU) N°1321/2014 maintenance organizations privileges. **PROPOSAL** Harmonize proposed requirements in all European regulations
response	Not accepted This comment extends beyond the scope of CS-STAN. CS-STAN aims to streamline some processes. CS-STAN cannot be used to change a regulation. It is to be noted that according to Part-21, SCs are neither minor nor major changes but a separate category. Consequently, any privileges of DOA holders should not be confused with CS-STAN. AMC M.A.801 details that the legal or natural person responsible for the embodiment of an SC/SR should compile the required data; this might include amendments to flight manuals and instructions for continued airworthiness.

comment	*149* comment by: *FNAM* **ISSUE – 5.Manuals** An update of the ICAs mandates the implementation of SIB N° 2011-15 provisions every 2 years. Considering the fact that aircraft applying that CS-STAN might be

already equipped with the concerned equipment prior application of the CS-STAN without having to perform those checks every 2 years, this 2-year period seems too restrictive considering the expected benefits in term of safety.
French NAA published guidelines requiring performing tests similar to SIB N° 2011-15 every 5 years. Mandating a 2 year interval will create non-justified distortions between aircraft with and without these CS-STAN applied.
PROPOSAL
Modify to : "*Amend the Instructions for Continued Airworthiness (ICA) establish maintenance actions / inspections and intervals, if applicable. In particular, include in the ICAs:*

- *A check similar in term of content to EASA SIB N° 2011-15 provisions, at intervals defined by the authority designated by the Member State of registry (if defined and published), or*
- *A check in accordance with the latest version of EASA SIB N° 2011-15 at intervals not to exceed 2 years*"

response | Accepted

Refer to the response to comment #77.

comment | *167* comment by: *PPL/IR Europe*

"However, the voluntary transmission of additional ADS-B data (e.g. GPS position and velocity) can be accepted when the position and velocity quality indicators report the lowest quality, the equipment manufacturer has stated compatibility with the directly connected GNSS source, and the transponder is not authorised in accordance with ETSO-C166b or equivalent."

The exclusion of the most recent transponder standard has never made sense here, and seems to be designed to make voluntary transmission practically impossible. The requirement for an explicit statement of compliance is equally limiting.

Net safety will be improved by simplifying this to:
"However, the voluntary transmission of additional ADS-B data (e.g. GPS position and velocity) can be accepted when the position and velocity quality indicators report SDA=0 and SIL=0."

response | Partially accepted

EASA did not intend to exclude the most recent standard. The ADS-B OUT configurations have been grouped into CS-SC005a. However, a declaration of compatibility between the transmitter and the GNSS source is kept. This is a mitigation means for the installation (airworthiness and intended function).

Refer also to the responses to comments #5 and #26.

comment | *178* comment by: *Garmin International*

Subpart B, Standard Change CS-SC002c, Paragraph 1 Page 13:

Paragraph 1 contains the Note "This SC does not qualify the TABS equipment installation...". The purpose of the note is unclear, but is assumed to apply to the Class B TABS device described in Paragraph 4. It is suggested that the note be moved after the Paragraph 4 section describing an installation with a Class B TABS device.

response

Accepted

Refer to the responses to comments #4 and #5.

comment *179* comment by: *Garmin International*

Subpart B, Standard Change CS-SC002c, Paragraph 1 Page 14:

Paragraph 4 contains the sentence "However, the voluntary transmission of additional ADS-B data (e.g. GPS position and velocity) can be accepted when the position and velocity quality indicators report the lowest quality..., and the transponder is not authorised in accordance with ETSO-C166b or equivalent."

The restriction on ETSO-C166b authorization is not necessary and unnecessarily limits the voluntary transmission of ADS-B data. It is also inconsistent with other guidance (e.g. CS-SC006a) for limiting Source Integrity Level (SIL) and System Design Assurance (SDA) parameters for installations that are not intended to satisfy the requirements in Implementing Regulation (EU) 1207/2011 or AMC 20-14. A limitation on SIL and SDA indicators is sufficient to ensure that the ADS-B data is not used by certified ADS-B IN equipment, nor by air traffic control.

It is suggested the sentence be revised to: "The voluntary transmission of additional ADS-B data (e.g. GPS position and velocity) can be accepted for systems with a GNSS source that is not certified in accordance with an ETSO when the equipment manufacturer has stated compatibility with the directly connected GNSS source and the transponder is configured to report SIL=0 and SDA=0."

response

Accepted

Refer to the responses to comments #5 and #26.

comment *192* comment by: *Garmin International*

Subpart B, Standard Change CS-SC002c, Paragraph 4 - Page 14:

The second to last sentence in Paragraph 4 refers to "a Class B TABS". The reference should be to "a Class B TABS device".

response

Partially accepted

The case of a class B device is documented as an ADS-B OUT configuration.

comment *193* comment by: *Garmin International*

Subpart B, Standard Change CS-SC002c, Paragraph 4 - Page 14:

The last sentence of Paragraph 4 refers to "a Class A TABS equipment". This should be modified to "a Class A TABS device". According to CS-STAN.05 a Class A TABS can be "a Class A device, or a TSO-C112e- and TSO-C166b-compliant device". It is assumed the intent of the sentence is to prevent the installation of both a ETSO-C199a Class A device and a Mode S Transponder.

response Accepted

The term 'device' has been added.

comment *238* comment by: *RECTIMO AVIATION*

Keep the possibility to exchange the Mode S transponder have not safety impact.

response Accepted

Refer to the response to comment #145.

comment *245* comment by: *EUROCONTROL*

This SC is for the Iinstallation ~~or exchange~~ of a Mode S transponder, including, optionally, an altitude encoder ~~exchange~~. The individual installation of an altitude encoder is covered by this SC.
This SC does not include the installation of antennas (see CS-SC004, which may be applied concurrently).

Comment: Why "or exchange" was removed?

response Noted

Subpart A of CS-STAN contains the following definition:

'Installation' means the embodiment in/on the aircraft of equipment, instrument or system to provide a new function or new information not previously available at the aircraft. Unless otherwise mentioned, whenever a SC covers an 'Installation' of an equipment/instrument/system, the exchange of the equipment/instrument/ system is also covered by the same SC.

According to this definition, there is no need to keep 'installation and exchange' in the text of any SC.

Furthermore, to prevent any possible misunderstanding, the above-mentioned definition has been simplified.

comment *246* comment by: *EUROCONTROL*

	"Note: This SC does not qualify the TABS equipment installation to meet the transponder or ADS-B requirements defined in Commission Implementing Regulations (EU) Nos 1206/2011[13] and 1207/2011[14]. Therefore, this TABS installation is not sufficient to permit the pilot to fly the aircraft into transponder mandatory zones (TMZs)" Comment: This note must be incorrectly placed? It seems to belong to SC058. Suggest to delete
response	Accepted The note has been deleted. Refer also to the responses to comments #5 and #26.

comment	*247* comment by: *EUROCONTROL* *"Note:* SC-CS006 refers to the installation of ADS-B OUT equipment that is compliant with AMC 20-24" Comment: "Delete as part of the Merge and update of SC005 and SC006"
response	Accepted The note has been deleted. Refer also to the responses to comments #5 and #26.

comment	*248* comment by: *EUROCONTROL* "However, the voluntary transmission of additional ADS-B data (e.g. GPS position and velocity) can be accepted when the position and velocity quality indicators report the lowest quality, the equipment manufacturer has stated compatibility with the directly connected GNSS source, and the transponder is not authorised in accordance with ETSO-C166b or equivalent" Comment: Are provisions for zero QI system still needed? It is recommended that EASA reconsiders this text in the light of the final version of the SCs (005, 058). If EASA wants to keep the option then is suggested to add a RECOMMENDATION for full ADS-B installations: ADS-B installations are recommended to be made according to SC005 or SC058. And update the zero QI text as follows: Proposed new text: The voluntary transmission of additional ADS-B data (e.g. GPS position and velocity) is accepted for systems 1. with a GNSS source that is <u>not</u> certified in accordance with an ETSO and 2. when the equipment manufacturer has stated compatibility with the directly connected GNSS source and 3. the transponder is configured to report SIL=0 and SDA=0 (and NACp=0).

response | Partially accepted

This note has been deleted. EASA considered this comment in the scope of the revised CS-SC005a. Refer also to the response to comment #26.

comment | *249* comment by: *EUROCONTROL*

"The voluntary transmission of additional ADS-B data (e.g. GPS position and velocity) is also permitted when the position and velocity quality indicators report the quality provided by a Class B TABS certified in accordance with ETSO-C199() or equivalent, or by a GPS source that was certified in accordance with ETSO-C196a, C145c, C145e, C146c, or C146e"

Comment:
Suggest to delete this from this SC. It is better addressed under SC058 TABS (since it is a TABS equipment).

response | Partially accepted

EASA appreciates the intent of this comment. However, a TABS class B device is included in SC005a. Refer also to the response to comments for TABS for the other configurations.

comment | *250* comment by: *EUROCONTROL*

response | Noted

comment | *251* comment by: *EUROCONTROL*

Proposed updated text for last para in section 4:
In case an ETSO-C199 Class A TABS device is already installed in the aircraft, the Mode S transponder system cannot be installed using CS-STAN.
Note: An ETSO-C199 Class A TABS device is not certified in accordance with ETSO-C166() and ETSO-C112().

response | Partially accepted

The proposed note has not been introduced since the ETSO wording is not totally correct. However, the text in paragraph 4 has been amended to reflect the intent of this comment.

comment | *272* comment by: *Europe Air Sports*

Installation of Mode S elementary surveillance equipment

NPA text:
“However, the voluntary transmission of additional ADSB
data

	(e.g. GPS position and velocity) can be accepted when the position and velocity quality indicators report the lowest quality, the equipment manufacturer has stated compatibility with the directly connected GNSS source, and the transponder is not authorised in accordance with ETSO-C166b or equivalent." EAS Comment: The exclusion of the most recent transponder standard has never made sense here, and seems to be designed to make voluntary transmission practically impossible. The requirement for an explicit statement of compliance is equally limiting. Net safety will be improved by simplifying this to: "However, the voluntary transmission of additional ADSB data (e.g. GPS position and velocity) can be accepted when the position and velocity quality indicators report SDA=0 and SIL=0."
response	Partially accepted Refer to the response to comment #167 and to the responses to comments on SC058b.

comment	*283* comment by: *Airbus Helicopters* Paragraph No: 1.first paragraph Comment: An editorial correction is proposed below to achieve issue alignment Rationale: Completeness and editorial Proposed text: (see CS-SC004a which may be applied concurrently)
response	Not accepted To reduce the administrative burden, the revision status of the mentioned SCs is not reported in this kind of notes. This means that any revision status is acceptable.

comment	*306* comment by: *European Powered Flying Union* CS-SC002~~b~~c Installation of Mode S elementary surveillance equipment page 13/65 Second text block page 14/65: "However, the voluntary transmission of additional ADSB data (e.g. GPS position and velocity) can be accepted when the position and velocity quality indicators report the lowest quality, the equipment manufacturer has stated compatibility with the directly connected GNSS source, and the transponder

	is not authorised in accordance with ETSO-C166b or equivalent." Our Comment: The requirement for an explicit statement of compliance is equally limiting. Net safety will be improved by simplifying this to: "However, the voluntary transmission of additional ADSB data (e.g. GPS position and velocity) can be accepted when the position and velocity quality indicators report SDA=0 and SIL=0." Rationale: The exclusion of the most recent transponder standard has never made sense here, and seems to be designed to make voluntary transmission practically impossible.
response	Partially accepted Refer to the response to comment #167.

comment	*311* comment by: *EUROCONTROL* Attachment #1 Please refer to the attached file for an inline version of the comments and text proposals provided.
response	Partially accepted The option to broadcast ADS-B OUT with the lowest-quality indicators is kept for airborne traffic awareness. EASA has received several recommendations from accident investigation offices to facilitate electronic conspicuity. The ADS-B OUT configuration with the lowest quality indicators and a certified transponder is one safety-improving technology (refer to the European plan for Aviation Safety, 2018-2022). This is one means to address mid-air collisions between GA aircraft. The ADS-B reports can be properly used by the receiving applications thanks to the quality indicators. The transponder used in all proposed configurations are certified. Such transponders comply with the 1090 MHz transmission requirements. Pilots not receiving an ATS service should be able to enhance 'see and avoid'. Mid-air collisions in GA often lead to deaths. EASA should promote voluntary equipage of safety technologies that can reduce the number of deaths (e.g. FLARM, ADS-B, etc.). Also, refer to comments #152, #157, and #270 from the GA community. EASA used FAA AC 20-165B to specify the quality indicators. The ADS-B OUT configuration with the lowest quality indicators is similar to the 'ADS-B light' concept of operations from the FAA (https://spark.adobe.com/page/5Qlkj0YMFTecQ/) with the following differences: the ADS-B transmitter is certified and Europe does not only rely on ADS-B for surveillance. The FAA stretches the concept further by authorising non-TSO equipment as compliant for operations in US ADS-B airspace. Australia recently

expressed the intention to support UK Electronic Conspicuity devices (https://consultation.casa.gov.au/regulatory-program/dp1701as/results/summaryofconsultationondiscussionpaper1701as.pdf). Therefore, the EASA approach is conservative.

Refer also to the responses to comments #5 and #26. Also, refer to ADS-B OUT configurations in CS SC-005a.

comment

315 comment by: *General Aviation Manufacturers Association / Hennig*

EASA identifies a set of acceptable position sources (i.e., GPS/GNSS solutions) to support ADS-B including TABS equipment in the Mode S Elementary Surveillance section.

Manufacturers may develop equipment that meets (1) regulated airspace (i.e., Regulation No 1207/2011, or transponder mandatory zones), but also (2) equipment that can be installed on a voluntary basis for operation in unregulated airspace for purpose of increasing conspicuity.

The different sections speak to what permissible for a CS-STAN installation and, through various notes, is not permissible through a CS-STAN installation and in certain airspaces.

GAMA recommends that EASA provide clarity about what is permissible for purpose of different transponder and position source combinations under CS-STAN. GAMA encourages EASA to use the flexibility of CS-STAN to facilitate the greatest rate of voluntary equipage with transponder, TABS, and / or ADS-B equipment that improves safety and similarly enable the use of any position source that has been qualified to support ADS-B for surveillance and other functions.

response

Partially accepted

EASA appreciates the intent of this comment. EASA agrees that some other combinations might be worth to assess. Refer to the revised CS-SC005a.

Refer also to the responses to comments #5 and #26. In addition, refer to the responses to comments related to CS-SC0058b.

Standard Change CS-SC003bc p. 15-16

comment

34 comment by: *European Powered Flying Union*

CS-SC003~~b~~c
page 13/65
last textblock

5. Manuals
"-functions for listening to music" we read. We think such a provision is not required. Please delete this alinea.

The NPA text states: "Additionally, add a limitation in the AFMS to forbid the use of the following functions, if available, during take-off and landing: — bluetooth connections to smartphones, — telephony functions, — functions for listening to music."

Propoasal: Please rewrite, for example:
"If the audio selector includes connections to equipment with functions not part of the aircraft's control system or navigation system and which may emit distracting sounds, these functions shall not be used during take-off and landing. Examples are telephony and personal messaging functions".

Rationale:
We agree that the pilot should not be distracted by unnecessary sounds during take-off and landing, but find the list in the NPA too prescriptive. In fact, a provision of this nature might preferably belong to OPS regulation rather than airworthiness. We therefore suggest a co-operation with the EASA OPS section to find a common solution.

Situations exist where flight crews are obliged to use cellular phone e.g. to ask for IFR-releases at uncontrolled aerodromes.

response Accepted

This paragraph has been updated to reflect the intent of this comment.

comment *67* comment by: *Samionics / General Aviation Avionics*

"Audio selector amplifiers that feature automatic speech recognition are not eligible for installation by means of this SC."

Instead of limiting development of avionics we suggest that they are allowed to be installed with the limitation that the speech recognition function is disabled.

response Accepted

The text has been changed to reflect the intent of this comment.

comment *105* comment by: *Europe Air Sports*

Installation of audio selector panels and amplifiers

NPA text: "Additionally, add a limitation in the AFMS to forbid the use of the following functions, if available, during take-off and landing: — bluetooth connections to smartphones, — telephony functions, — functions for listening to music."

EAS Comment:
Rewrite, for example:
"If the audio selector includes connections to equipment with functions not part of the aircraft's control system or navigation system and which may emit distracting

	sounds, these functions shall not be used during take-off and landing. Examples are telephony and personal messaging functions". Rationale: We agree that the pilot should not be distracted by unnecessary sounds during take-off and landing, but find the list in the NPA too prescriptive. In fact, a provision of this nature might preferably belong to OPS regulation rather than airworthiness. We therefore suggest a co-operation with the EASA OPS section to find a common solution.
response	Accepted Refer to the response to comment #34.

comment	*150* comment by: *FNAM* **ISSUE - 2. Applicability/Eligibility** EASA proposed disposals ensure more flexibility for other than complex motor-powered aircraft, for rotorcraft that are not complex motor-powered aircraft and to any ELA2 aircraft. FNAM and GIPAG are not certain to understand the scope of this proposal and suggest EASA to clarify that ELA1 aircraft are included in the scope of audio selector panels and amplifier installation flexibility. Since ELA2 are included into the scope, there is no safety impact, otherwise a positive one, to include also ELA1 aircraft. Moreover, the entire scope of General Aviation aircraft is not covered by this proposed disposal. General Aviation organizations are also maintaining ELA1 and complex motor-powered aircraft. Since EASA proposed disposals goal is to support operations of "*General Aviation aircraft in Europe by reducing the regulatory burden for the embodiment of simple changes and repairs in certain aircraft*", FNAM and GIPAG suggest to ensure that following aircraft are included in the scope of CS-SC003c : • ELA1, ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT • All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO **PROPOSAL** Add all General Aviation aircraft into the scope of CS-SC003c such as: • ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT • All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO Clarify if ELA1 aircraft are included into the scope of CS-SC003c
response	Noted

	ELA1 aircraft are included in ELA2.
comment	*151* comment by: *FNAM* **ISSUE – 5.Manuals** Instruction of Continued Airworthiness are currently drown up by Design Approval Holders only. Nevertheless, EASA proposed disposals introduce possibilities for maintenance organizations to amend Instruction of Continuing Airworthiness in order to establish maintenance inspections/actions. This is non-consistent with Regulation (EU) N°1321/2014 maintenance organizations privileges. Therefore, FNAM and GIPAG suggest to harmonize EASA proposals in all European requirement by amending Regulation (EU) N°1321/2014 maintenance organizations privileges. **PROPOSAL** Harmonize proposed requirements in all European regulations
response	Not accepted Refer to the response to comment #148.
comment	*180* comment by: *Garmin International* **Subpart B, Standard Change CS-SC003c, Paragraph 1 - Page 15:** The last sentence in Paragraph 1 excludes (**emphasis** added) "Audio selector amplifiers that **feature** automatic speech recognition …". This exclusion is overly limiting. Audio selector amplifiers that "feature" automatic speech recognition should be eligible for installation if the automatic speech recognition "feature" is disabled. We recommend revising the sentence to: Audio selector amplifiers that feature automatic speech recognition are eligible for installation by means of this SC only if the automatic speech recognition feature is disabled.
response	Accepted Refer to the response to comment #67.
comment	*316* comment by: *General Aviation Manufacturers Association / Hennig* It is GAMA's view that the purpose of CS-STAN is to facilitate certain equipage on general aviation aircraft, especially technology that can enhance safety of European aviation through voluntary adoption by the GA community. CS-STAN is intended to set an appropriate set of requirements to ensure safety while facilitating enhancement of safety through the expanded installations across the fleet. There are, however, several sections of this NPA where CS-STAN proposes overly prescriptive requirements that would disqualify existing safety enhancing technology

to be adopted voluntarily by the GA community through the simplified CS-STAN regulatory mechanism, because of one-off capabilities. As an example, CS-SC003~~b~~c proposes a restriction from installation of audio selector and amplifiers that feature automatic speech recognition as opposed to permitting the use of CS-STAN for installation of equipment that may have the capability if the automatic speech recognition feature is disabled.

GAMA recommends that EASA use CS-STAN for its intended purpose and enable flexibility for installation of equipment in each category and not force redesigns. The audio selector / amplifier section can better define the framework within which CS-STAN can be used for the streamlined pathway to equipage by being less prescriptive.

response | Accepted

Refer to the response to comment #67.

Standard Change CS-SC005a p. 17-18

comment | *10* comment by: *FLARM Technology*

Regulation (EU) No 1207/2011 requires aircraft operating IFR/GAT to carry and operate a certified Mode-S transponder with an approved installation. This should be taken into consideration in Section 3 (and possibly Section 2). E.g. it affects the required transponder installation (reference to CS-SC002c).

response | Partially accepted

CS-SC002c has been modified to characterise a Mode S elementary transponder (certified installation). The various ADS-B OUT configurations have been specified in other SCs.

comment | *11* comment by: *FLARM Technology*

The note in Section 1 states that “The criteria of AMC 20-24 ensure that the aircraft will be seen by air traffic control and ACAS II (TCAS II) equipped aircraft”. This is however misleading/incorrect. Regarding ATC, it depends on the quality indicators, which in turn depend both on dynamic environmental factors as well as installation conditions. The latter include e.g. the position source. Many ATS units also have higher minima than the ones stated in AMC 20-24 for 5 nm separation and will normally not see such aircraft. E.g. AMC 20-24 and DO-303 state the minimum required for the equipment to be NIC>=4 and SIL>=2, but many ATC units (of the few that actually receive ADS-B) use NIC>=7 and SIL=3.

Regarding ACAS/TCAS, they don’t receive ADS-B but the transponder signal. The transponder installation is not part of this SC. If hybrid surveillance is intended to be referenced, it’s still incorrect, since DO-300A requires the intruder to have NIC>=6 and SIL=3.

response | Partially accepted

The text that was commented on has been removed in order to prevent any misunderstanding. EASA acknowledges that the proposed text did not consider the dynamic aspects and the implementation considerations. The text has therefore been revised in order to specify the quality indicators for the various ADS-B OUT configurations. One of the proposed ADS-B OUT configurations provides a SIL=3, and could thus be processed by a hybrid-surveillance TCAS. CS-SC002c has been rewritten to only address Mode S elementary surveillance transponder installations.

comment | *12* comment by: *FLARM Technology*

Section 3 states as a condition that the "transponder equipment and its installation are compliant with CS-SC002c […]". This would imply that the aircraft cannot fly in TMZs, which would negate the purpose of this SC. In addition, CS-SC002c states that a transponder installation according to that SC "cannot be claimed to be compliant with […] AMC 20-24". The statement should therefore be removed, and the SC should require an approved Mode-S transponder installation.

response | Partially accepted

Refer to the response to comment #11.

comment | *13* comment by: *FLARM Technology*

It is not clear if the SC includes also the installation of non-transponder-based ADS-B Out. The transponder is referenced in a way which doesn't make this clear. E.g. Condition #3 states that "The ADS-B transmit unit (transponder) is certified […]". If the intention is to only include transponder-based ADS-B, this should be stated under Section 1 and/or 3. If the intention is to also include non-transponder-based ADS-B, it should state that this cannot be done if a Mode-S transponder is installed, and the conditions under which it can be done with a Mode-C transponder. In that case, several of the conditions need to be rewritten as well.

response | Partially accepted

Refer to the response to comment #11.

comment | *14* comment by: *FLARM Technology*

It is not clear what is actually included in this SC in terms of installation. The installation of the transponder is not included (Condition #1) and the installation of the GPS source is not included (Condition #4). Neither can be installed as an SC (AMC 20-24 is excluded from CS-SC002c and CS-SC052 is for VFR situational awareness only and excludes ADS-B Out). The implication is then that the SC only covers "activation" of the ADS-B Out functionality, but this is not evident (and should probably be clarified). Furthermore, any connections between installed devices and configuration of said devices will already be covered by the corresponding (non-SC) installation, including activation of ADS-B functionality. The only use of this SC would then be for

	aircraft which already have a separate installed and approved Mode-S transponder and a separate and certified GPS source, which very few if any aircraft have (the SC requires "a direct digital interface between the GNSS receiver and the transponder", which precludes connecting the transponder to e.g. navigation equipment with an integrated certified GPS source). For the case where the GNSS receiver is integrated into the transponder (no such transponders currently exist as far as we know), activation of ADS-B Out will be part of the (non-SC) installation. For the reasons explained, the contents of this SC might be better suited for a Certification Memorandum.
response	Partially accepted The ADS-B OUT configurations have been rewritten. EASA does not have any means to monitor the number of installations that will be accomplished through SCs. However, EASA intends to consider any means to enhance safety; therefore, SCs enable the installation of different technologies to enhance the 'see and avoid' function. Interoperability between all the available technologies flying in a given area would provide a safety benefit to the users. Refer also to the response to comment #311 and to the responses to the comments related to ADS-B OUT.

comment	*27* comment by: *Luftfahrt-Bundesamt* This SC should be completely removed together with AMC 20-24. AMC 20-24 is a totally outdated document: It specifies technical parameters not compatible with European airspace requirements and refers to many documents no longer valid. Using a SC to set a pointer to that AMC could result in overloading/jamming the 1090 MHz frequency with lots of position signals indicated as low quality information and being useless for aviation purposes. An unnecessary congestion of the 1090 MHz frequency can significantly deteriorate the ATC surveillance system and as such constitutes a safety drawback. (**) People should be encouraged to use the opportunities proposed in the above comment to CS-SC002c (*) instead.
response	Partially accepted AMC 20-24 is outdated. However, Europe does not currently have a replacement for the concept of operation, and some aircraft flight manuals still contain references to AMC 20-24. Therefore, the revised concept of operation should also consider those aircraft. The proposed text of CS-SC005a has been revised, and now it specifies three ADS-B OUT configurations. EASA used FAA AC 20-165B to specify the quality indicators. In all configurations, the latency is reduced by a direct connection from the transponder to the GNSS source.

The voluntary broadcast of ADS-B data from some GA aircraft is not expected to overload the frequency. If it did, this would mean that the Mode-S/ADS-B ground infrastructure in Europe would have to be revisited anyway. The traffic increase on 1090 MHz as a result of one ADS-B OUT GA aircraft is likely to be negligible in comparison with the data traffic caused by ACAS-equipped aircraft in the same airspace. For example, one ACAS-equipped aircraft may create up to 30 replies per second in its vicinity, while one ADS-B OUT GA aircraft will transmit ADS-B reports only twice per second on the 1090 MHz frequency.

The SESAR deployment manager, in its report related to the status of ADS-B (https://ec.europa.eu/transport/sites/transport/files/20180515-sesar-ads-b-report.pdf section 6.1), mentions a concrete risk of band oversaturation in the transition period when all aircraft are expected to both broadcast ADS-B and reply to Mode S interrogations on the same channel. It also mentions that 'the selectivity of the Mode S technology is a valuable tool to moderate the channel as it allows the ground system to intelligently choose which targets to interrogate and how often.' The report also recognises the impact of TCAS interrogations. In the USA, the government launched the 'USA Spectrum Efficient National Surveillance Radar programme' (see e.g. https://faaco.faa.gov/index.cfm/attachment/download/73824).

The proposed configurations for ADS-B OUT are based on transponders that conform to ED-102A/DO-260B, which are thus fully qualified to transmit in the aviation band. Eurocontrol monitors Radio Frequency (RF) and Surveillance Avionics

(https://www.eurocontrol.int/articles/radio-frequency-rf-and-surveillance-avionics-analysis).

Therefore, EASA acknowledges that the risk of 1090 MHz congestion exists. However, the impact of voluntary ADS-B transmissions by CS-SC005a is negligible.

Refer also to the responses to comments #11 and #311.

comment *65* comment by: *GdF*

change:
This SC is for the installation of an ADS-B OUT system that is compliant with AMC 20-24 and not used for ATC identification.

merge:

The transponder equipment and its installation are compliant with CS-SC002c or later amendments, or are otherwise approved.

The transponder equipment and its installation are in compliance with CS ACNS.D.ELS.010.

The ADS-B surveillance functionality provides data according to CS ACNS.D.ADSB.020. Surface data is optional if the system is not capable of determining air/ground status.
If automatic determination of the on-the-ground status is not available, the on-the-ground status is set to 'airborne' (credit can be taken from the embodiment of SC002a or later revision).

Any antenna connected to the transponder has a resulting pattern that is vertically polarised, omnidirectional in the horizontal plane, and has sufficient vertical beam width to ensure proper system operation during normal aircraft manoeuvres (credit can be taken from the embodiment of SC002a or later revision).

The equipment is qualified for the environmental conditions to be expected during normal operation (credit can be taken from the embodiment of SC002a or later revision).

The reported pressure altitude is obtained from an approved source connected to the static pressure system that provides pressure to the instrument used to control the aircraft (credit can be taken from the embodiment of SC002a or later revision).

merge and replace:
~~Instructions from the equipment manufacturer have to be followed.~~

All instructions and limitations detailed in the equipment installation manuals must be observed.

~~The correct transmission of the required parameters, identified in Section 7 of AMC 20-24, is verified during a ground test, which is performed in accordance with the instructions provided by the manufacturer of the transponder. The guidance of Appendix 1 to EASA SIB 2011-15 (latest revision) should be considered.~~
~~The voluntary transmission of any additional parameters is verified to be correct though a ground test that is performed in accordance with the instructions provided by the manufacturer of the transponder.~~
A system ground test that verifies all transmitted data, including any optionally transmitted data where provided, according to CS ACNS.D.ADSB.020, must be performed.

Merged and changed the limitation from 006a. This limitation should be kept and not omitted.
Changed because this would result in pilots not accepting the new equipment, because they would have to turn it off when entering airspace E or higher.
Operation of the system is limited to uncontrolled flights in airspace G and E and is subject to Member State's authorisation/conditions as documented in the official aeronautical publication.

response

Partially accepted

The ADS-B OUT configurations have been reworded. An SC applies to the airborne installation. EASA agrees with the intent of 'not used for ATC identification'. However, CS-STAN cannot enforce such a limitation. The limitation to 'uncontrolled airspace' was expanded to introduce 'as further authorised by Member States'. EASA

expects Member States to specify the conditions of usage (airborne and ground) of the related installations. Ideally, there should be a European concept of operations that replaces AMC 20-24 and specifies the intended usage with assumptions and limitations.

Refer also to the responses to the comments related to ADS-B OUT.

comment

78 comment by: *DGAC Deputy Head of aircraft and operations rulemaking department*

In §5 “Manuals”, an update of the ICAs mandates the implementation of SIB N° 2011-15 provisions every 2 years. Considering the fact that aircraft applying that CS-STAN might be already equipped with the concerned equipment prior application of the CS-STAN without having to perform those checks every 2 years, this 2-year period seems too restrictive considering the expected benefits in term of safety.
France published guidelines requiring performing tests similar to SIB N° 2011-15 every 5 years. Mandating a 2 year interval will create non-justified distortions between aircraft with and without these CS-STAN applied.

So DGAC France suggests to change the §5 as follow : “Amend the Instructions for Continued Airworthiness (ICA) establish maintenance actions / inspections and intervals, if applicable. In particular, include in the ICAs:

- A check similar in term of content to EASA SIB N° 2011-15 provisions, at intervals defined an dpublished by the competent authority, or
- A check in accordance with the latest version of EASA SIB N° 2011-15 at intervals not to exceed 2 years.

response

Accepted

The text of this SC has been modified according to this comment.

Refer also to the response to comment #77.

comment

90 comment by: *ADAC Luftfahrt Technik GmbH*

SC005a should be deleted therefore installers should be encouraged to use CS-ACNS to provide a common standard.

response

Partially accepted

CS-STAN for ADS-B OUT targets operations for which the installation of ADS-B OUT is not required. Those configurations do not provide credit for CS-ACNS. They do not meet the requirements to deliver ATC service.

Refer also to the responses to comment #152 and #311.

comment

114 comment by: *EUROCONTROL*

	Title: delete "compliant with AMC20-24"
response	Partially accepted ADS-B OUT configurations has been reworded and the conditions have been further specified. Refer also to the responses to comments #27 and #311.

comment	*115* comment by: *EUROCONTROL* 1. Purpose: delete " that is compliant with AMC20-24"
response	Partially accepted Refer to the response to comment #114.

comment	*116* comment by: *EUROCONTROL* Change text of Note to: "The aircraft identified in the applicability/eligibility section of this Standard Change do not need to comply with Commission Implementing Regulation (EU) No 1207/2011. The installation supports the capability for aircraft to be seen by air traffic control and ACAS II (TCAS II) equipped aircraft."
response	Partially accepted The text has been completely deleted. Refer also to the responses to comments #11 and #65.

comment	*117* comment by: *EUROCONTROL* **3. Acceptable methods, techniques, and practices** " The transponder equipment and its installation are compliant with CS-SC002a or later amendments, or are otherwise approved. " Comments: Discuss how legacy installations are accepted, i.e. if an installation is made to SC002a Alternatively “revisions” to be updated consistently
response	Accepted The conditions are specified in CS-SC002b. A reference to CS-SC002b has been included.

comment	*118* comment by: *EUROCONTROL* "The transponder equipment and its installation are in compliance with CS ACNS.D.ELS.010. " Comment: Redundant to SC002 which already refers to this.

response | Accepted

The text has been modified accordingly.

comment | *119* comment by: *EUROCONTROL*

"The reported pressure altitude is obtained from an approved source connected to the static pressure system that provides pressure to the instrument used to control the aircraft (credit can be taken from the embodiment of SC002a or later amendments)"

Comment: Redundant to SC002 which already refers to this.

response | Accepted

The text has been modified accordingly.

comment | *120* comment by: *EUROCONTROL*

¾ The ADS-B transmit unit (transponder) is certified in accordance with ETSO-C166b, or later revisions, or equivalent.

Comment: Reference to later amendments/revisions may not be needed for ETSOs depending on EASA. Consistent use of later amendments/revisions to be checked by EASA.

response | Accepted

The text has been modified accordingly.

comment | *121* comment by: *EUROCONTROL*

Proposed text:
" The GNSS receiver is certified in accordance with:
· ETSO-C129a, or
· ETSO-C196a or ETSO-C145c or ETSO-C146c, or later amendments, or equivalent.

Comments: EASA to verify if older versions can be acceptable
"equivalent" - TBD

response | Accepted

The text has been modified accordingly.

comment | *122* comment by: *EUROCONTROL*

Delete text:
~~The ADS-B transmit unit (transponder) is certified in accordance with ETSO-C166b, or later revisions, or equivalent."~~

response	Accepted The text has been modified accordingly.

comment	*123* comment by: *EUROCONTROL* Proposed text: The GNSS installation is approved, or the GNSS receiver is integrated into the transponder and certified in accordance with ETSO-C196a, C145c, C145e, C146c or C146e [JM1] , or later amendments, or equivalent. Comment: Why is c and e spelled out is there an issue with version d. If so would be good to add a note explaining if/why d is not acceptable.
response	Partially accepted The numbering system in CS-ETSO is selected to refer to the corresponding FAA TSOs. This is a general principle. This means that the revision letters (e.g. b, c, etc.) are consistent with those of the equivalent FAA TSOs. Some revision letters may be skipped to maintain this consistency.

comment	*124* comment by: *EUROCONTROL* There is a direct digital interface between the GNSS receiver and the transponder, or the GNSS receiver is integrated into the transponder and certified in accordance with ETSO-C196a, C145c, C145e, C146c, or C146e - add "or later amendments, or equivalent"
response	Accepted The text has been clarified and simplified.

comment	*125* comment by: *EUROCONTROL* Suggested text"The compatibility of the combination of ~~a~~ the transponder and ~~a~~ the GNSS receiver ~~for compliance with AMC 20-24, including for latency~~ is explicitly stated by the manufacturer of the transponder.
response	Not accepted EASA is convinced that a reference for the concept of use is needed. The combination of the transponder and the GNSS receiver does not comply with all the sections of CS-ACNS. Therefore, this CS cannot be referenced; however, AMC 20-24 can be referenced. EASA has been informed that the stakeholders are working on a new concept of use for new equipment combinations (e.g. an ADS-B transceiver and GNSS source). Once available, this concept will also be considered in the frame of CS-STAN evolution.

	Refer also to the response to comment #27.

comment	*126* comment by: *EUROCONTROL* To be deleted: ~~The correct transmission of the required parameters, identified in Section 7 of AMC 20-24, is verified during a ground test, which is performed in accordance with the instructions provided by the manufacturer of the transponder. The guidance of Appendix 1 to EASA SIB 2011-15 (latest revision) should be considered.~~
response	Not accepted Refer to the response to comment #312.

comment	*127* comment by: *EUROCONTROL* Additional text to be inserted: ¾ The ADS-B surveillance functionality provides data according to CS ACNS.D.ADSB.020. Surface data is optional if the system is not capable of determining air/ground status. ¾ If automatic determination of the on-the-ground status is not available, the on-the-ground status is set to 'airborne' (credit can be taken from the embodiment of SC002a or later amendments). ¾ Any antenna connected to the transponder has a resulting pattern that is vertically polarised, omnidirectional in the horizontal plane, and has sufficient vertical beam width to ensure proper system operation during normal aircraft manoeuvres (credit can be taken from the embodiment of SC002a or later revision). The equipment is qualified for the environmental conditions to be expected during normal operation (credit can be taken from the embodiment of SC002a or later revision). Comment: Redundant to SC002 which already refers to this.
response	Partially accepted Refer to the response to comment #312.

comment	*128* comment by: *EUROCONTROL* To be deleted: ¾ ~~The voluntary transmission of any additional parameters is verified to be correct though a ground test that is performed in accordance with the instructions provided by the manufacturer of the transponder.~~
response	Accepted Refer to the response to comment #312.

comment	*129* comment by: *EUROCONTROL* "An installation according to this SC cannot be used to claim compliance with CS-ACNS Subpart D Section 4 '1090 MHz Extended Squitter ADS-B Out installations'." Comment: Is this sentence needed? This limitation is not listed for SC002. Is it also applicable for SC002? It is suggested to delete this sentence.
response	Not accepted CS-SC002c was modified to characterise a Mode S elementary transponder (certified installation). The various ADS-B OUT configurations that are specified in other SCs do not comply with all the requirements from CS-ACNS. Those SCs apply to aircraft that are not required to comply with CS-ACNS.

comment	*130* comment by: *EUROCONTROL* Proposed text: **1. Manuals** Amend the AFM with AFMS to include or refer to the equipment instructions for operations, as required ~~to include a statement of compliance with AMC 20-24~~. Amend the Instructions for Continued Airworthiness (ICAs) to establish maintenance actions/inspections and intervals, as required. In particular, include a check every 2 years in accordance with the latest version of EASA SIB No. 2011-15R2. The ground test shall also include voluntarily transmitted ADS-B data (if any). ~~This check satisfies the requirement for periodical maintenance referred to in AMC 20-24, Section 11~~
response	Partially accepted AMC 20-24 and CS-ACNS are the only references that are currently available. This installation provides compliance with AMC 20-24.

comment	*152* comment by: *FNAM* **AGREEMENT** FNAM and GIPAG thank for adding this new possibility
response	Noted The support from the GA community is noted. Receiving this type of comment enables EASA to balance the advantages for a community against the drawbacks expressed by other commentators.

comment	*153* comment by: *FNAM* **ISSUE - 2. Applicability/Eligibility** EASA proposed disposals ensure more flexibility for other than complex motor-powered aircraft which have a maximum cruising speed in ISA conditions below

250kt, for rotorcraft that are not complex motor-powered aircraft and to any ELA2 aircraft.
FNAM and GIPAG are not certain to understand the scope of this proposal and suggest EASA to clarify that ELA1 aircraft are included in the scope of ASB-B Out system installation flexibility. Since ELA2 are included into the scope, there is no safety impact, otherwise a positive one, to include also ELA1 aircraft.
Moreover, the entire scope of General Aviation aircraft is not covered by this proposed disposal. General Aviation organizations are also maintaining ELA1 and complex motor-powered aircraft. Since EASA proposed disposals goal is to support operations of "*General Aviation aircraft in Europe by reducing the regulatory burden for the embodiment of simple changes and repairs in certain aircraft*", FNAM and GIPAG suggest to ensure that following aircraft are included in the scope of CS-SC005a:

- ELA1, ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

PROPOSAL
Add all General Aviation aircraft into the scope of CS-SC005a such as:

- ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

Clarify if ELA1 aircraft are included into the scope of CS-SC005a

response

Partially accepted

EASA has amended the consulted proposal to include all aircraft that are not complex and motor-powered. As the applicability covers any ELA 2 aircraft, ELA1 is automatically included. SCs are applicable to simple installations. This is the purpose of SCs. The net safety benefit versus the risk is a complementary condition.

comment

154 comment by: *FNAM*

ISSUE - 2. Applicability/Eligibility
EASA proposed disposals are defining the applicability of CS-SC002c depending on the maximum cruise speed of the aeroplane: "*which have a maximum cruise speed in ISA conditions below 250kt*". FNAM and GIPAG wonder if the definition of this maximum cruise speed will fit to each and every General Aviation aeroplanes.
Moreover, aircraft speed could be measured with different referential : True Air Speed or Indicate Air Speed. In order to ensure an efficient understanding and implementation of EASA proposed disposals, FNAM and GIPAG suggest to precise if the maximum cruise speed is measured on True Air Speed or Indicate Air Speed. Therefore FNAM and GIPAG propose to add into CS STAN-80:

« Cruise speed: For this Regulation, the cruise speed is measured in ISA condition and expressed Knot and IAS. »
PROPOSAL
Define the abbreviation "*ISA*" and *"IAS"*
Add : *« Cruise speed: For this Regulation, the cruise speed is measured in ISA condition and expressed Knot and IAS. »*

response

Accepted

Refer to the response to comment #144.

comment *155* comment by: *FNAM*

ISSUE – 5.Manuals
Instruction of Continued Airworthiness are currently drown up by Design Approval Holders only. Nevertheless, EASA proposed disposals introduce possibilities for maintenance organizations to amend Instruction of Continuing Airworthiness in order to establish maintenance inspections/actions. This is non-consistent with Regulation (EU) N°1321/2014 maintenance organizations privileges. Therefore, FNAM suggests to harmonize EASA proposals in all European requirement by amending Regulation (EU) N°1321/2014 maintenance organizations privileges.
PROPOSAL
Harmonize proposed requirements in all European regulations

response

Not accepted

Refer to the response to comment #148.

comment *156* comment by: *FNAM*

ISSUE – 5.Manuals
An update of the ICAs mandates the implementation of SIB N° 2011-15 provisions every 2 years. Considering the fact that aircraft applying that CS-STAN might be already equipped with the concerned equipment prior application of the CS-STAN without having to perform those checks every 2 years, this 2-year period seems too restrictive considering the expected benefits in term of safety.
French NAA published guidelines requiring performing tests similar to SIB N° 2011-15 every 5 years. Mandating a 2 year interval will create non-justified distortions between aircraft with and without these CS-STAN applied.
PROPOSAL
Modify to : "*Amend the Instructions for Continued Airworthiness (ICA) establish maintenance actions / inspections and intervals, if applicable. In particular, include in the ICAs:*

- *A check similar in term of content to EASA SIB N° 2011-15 provisions, at intervals defined by the authority designated by the Member State of registry (if defined and published), or*

- *A check in accordance with the latest version of EASA SIB N° 2011-15 at intervals not to exceed 2 years*"

response | Accepted

Refer to the response to comment #78.

comment | *169* comment by: *The Norwegian Air Sports Federation*

NLF welcomes this proposal. We would like to suggest an amendment, which enables the pilot-owner to install and release the change, in case the ADS-B-out system is of a "zero install" design. Please refer to this product as an example of "zero install" products:

https://uavionix.com/products/skybeacon/

While the unit is UAT only – and hence currently only in limited use in Europe outside UAT test programs* – the product serves to illustrate why a more nuanced approach should be chosen for pilot-owner install and release to service. Further products of a similar design are likely to appear on the market.

Furthermore, if there are any items in the draft CS-SC005a, which precludes the installation of products of this or similar kinds in Europe, we would like to encourage the Agency to look into possible amendments/adaptions.

*) UAT test program: https://www.skydemon.aero/corporate/news.aspx?story=194
Please also refer to Eurocontrol/ICAO FMG/24 SoD UAT WP14.

response | Partially accepted

EASA thanks the Norwegian Air Sport Federation for this information. EASA invites the GA community to make a comprehensive proposal, including a concept of use for such installations. This also entails the availability of a UAT service in Europe. Such a proposal might be considered during future CS-STAN evolutions. Also, refer to the response to comment #270.

comment | *181* comment by: *Garmin International*

Subpart B, Standard Change CS-SC005a, Paragraph 1 - Page 17:

The Note contains the sentence "The criteria of AMC 20-24 ensure that the aircraft will be seen by air traffic control and ACAS II (TCAS II) equipped aircraft." This is not accurate. The criteria of AMC 20-24 ensure that the aircraft meets the requirements for the Enhanced Air Traffic Services in Non Radar Areas ADS-B IN Surveillance application. Suggest this sentence be deleted.

response | Accepted

The sentence has been deleted.

comment	*182* comment by: *Garmin International* **Subpart B, Standard Change CS-SC005a, Paragraph 3 - Page 17:** Paragraph 3 includes the condition: "The GNSS receiver is certified in accordance with: • ETSO-C129a, or • ETSO-C196a and ETSO-C145c or ETSO-C146c, or later revisions, or equivalent." It is unlikely the intent of the agency is to require a GNSS receiver with ETSO-C196a approval as well as an additional approval for ETSO-C145c or ETSO-C-146c. It is also unclear why exact versions of the ETSOs are specified. If the transponder manufacturer states that the GNSS source is compatible for AMC 20-24 compliance, then a limitation for specific ETSO versions is not needed for this Standard Change. It is suggested the item be revised to state: The GNSS receiver is certified in accordance with ETSO C129(), ETSO-C196(), ETSO-C145 () or ETSO-C146(), or equivalent.
response	Accepted The text has been modified to reflect the intent of this comment.

comment	*183* comment by: *Garmin International* **Subpart B, Standard Change CS-SC005a, Paragraph 3 - Page 17:** Paragraph 3 includes the condition: The GNSS installation is approved, or the GNSS receiver is integrated into the transponder and certified in accordance with ETSO-C196a, C145c, C145e, C146c or C146e It is unclear why exact versions of the ETSOs are specified. If the transponder manufacturer states that the GNSS source meets the requirements for AMC 20-24 compliance, then a limitation for specific ETSO versions is not needed for this Standard Change. It is suggested the item be revised to state: The GNSS installation is approved, or the GNSS receiver is integrated into the transponder and certified in accordance with ETSO-C196(), ETSO-C145() or ETSO-C146().
response	Accepted The text has been modified to reflect the intent of this comment.

comment	*184* comment by: *Garmin International*

Subpart B, Standard Change CS-SC005a, Paragraph 3 - Page 17:

Paragraph 3 includes the condition:

There is a direct digital interface between the GNSS receiver and the transponder, or the GNSS receiver is integrated into the transponder and certified in accordance with ETSO-C196a, C145c, C145e, C146c, or C146e

It is unnecessary to repeat the ETSO approval condition. It is suggested the item be revised to state:

There is a direct digital interface between the GNSS receiver and the transponder, or the GNSS receiver is integrated into the transponder.

response

Accepted

The text has been modified to reflect the intent of this comment.

comment *270* comment by: *Europe Air Sports*

Installation of an ADS-B OUT system compliant with AMC 20-24

EAS Comment:
EAS welcomes this proposal. We would like to suggest an amendment, which enables the pilot-owner to install and release the change, in case the ADS-B-out system is of a "zero install" design.
Please refer to this product as an example :
https://uavionix.com/products/skybeacon/

While this particular product is for the US and uses the UAT channel not used in Europe, it serves as a good example of adding safety with a very simple installation. Further products of a similar design are likely to appear on the market.
Furthermore, if there are any items in the draft CS-SC005a, which precludes the installation of products like the Skybeacon in Europe, EAS would like to encourage the Agency to look into possible amendments/adaptions.

response

Partially accepted

The current proposal for CS-STAN does not include this option. EASA has taken a conservative approach by restricting the installation to a certified transponder. This is a mitigation means to address the comments related to frequency congestion (protection against potential interference). The certification process addresses the frequency requirements for the transmitter. EASA recognises that this is a conservative approach compared with the FAA options for light-sport and experimental aircraft. The FAA controls the airborne and ground requirements, as well as the airspace requirements. Also, refer to the responses to comments #125 and #169.

comment *284* comment by: *Airbus Helicopters*

	Paragraph No: TITLE: INSTALLATION OF AN ADS-B OUT SYSTEM COMPLIANT WITH AMC 20-24 Comment: AMC 20-24 is NOT part of aeronautical products e.g. rotorcraft certification basis Rationale: AMC 20-24 section 2.2 QUOTE: "Acceptable Means of Compliance (AMC) illustrate a means, but not the only means, by which a requirement contained in an EASA airworthiness code or an implementing rule of the Basic Regulation, can be met" UNQUOTE Compliance with AMC 20-24 cannot be demonstrated due to the fact that it does not host / contain airworthiness requirements Proposed text: INSTALLATION OF AN ADS-B OUT SYSTEM **CONFORM TO** AMC 20-24
response	Accepted The text has been modified to reflect the intent of this comment.

comment	*285* comment by: *Airbus Helicopters* **Paragraph No**: 3 Acceptable methods, techniques and practices **Comment:** QUOTE "certified in accordance with ETSO-Cxyz" UNQUOTE is not in line with ETSO authorisation(s) issued by EASA **Rationale**: It it understood that EASA issues ETSO authorisations; EASA does not issue ETSO certificates. See also correct wording in CS-SC006a on page 20 for GNSS authorisation **Proposed text: authorised** in accordance with ETSO-Cxyz
response	Accepted The text has been modified to reflect the intent of this comment.

comment	*286* comment by: *Airbus Helicopters* Paragraph No: 4 Limitations **Comment**: NVG compatible lighting components limitation may be addressed, similar to CS-SC006a content **Rationale**: NVG compatibility to be equally addressed **Proposed text: In case of rotorcraft that are approved for aided VFR night flight, if cockpit panels are to be inserted, the change cannot be considered to be a SC**
response	Accepted A limitation that is similar to the one used in CS-SC002c has been added.

comment	*294* comment by: *NATS* SC005 & SC006 SC005 and SC006 are trying to deliver the same outcome to the same users but with different solutions. These SC are contradictory and inconsistent. Suggest SC005 and SC006 need to be reconciled into a single SC. NATS understands that UK CAA and Eurocontrol have coordinated a joint paper in response to the NPA on this issue and will present a consolidated way forward for SC005 and SC006 in their comments. NATS has had sight of this paper and believe that their approach resolves these issues. Our remaining comments below, also on SC005 & SC006, relate to the original drafting in the NPA and provide further discussion of our concerns with the original wording.
response	Partially accepted The configurations for ADS-B OUT have been modified. Refer to the responses to the comments from Eurocontrol.

comment	*295* comment by: *NATS* The implied reference to AMC20-24 in SC005 is too limiting by restricting the implementation to Version 0 (DO-260) ADS-B and does not permit the support of Version 2 (DO-260B) ADS-B. The requirements for SIL and SDA in SC005 are impossible to meet with AMC20-24 compliant ADS-B since these data items are not present in Version 0 (DO-260) ADS-B. Suggested Resolution Reference in the standard change should be to ADS-B broadcasting installations that support the most recent ADS-B technical standard.
response	Partially accepted This is not the intent of the reference to AMC 20-24. The reference to DO-260B is clearly indicated. AMC 20-24 is the only published concept of operations in addition to CS-ACNS. Refer to the responses to comments #27, #65 and #130.

comment	*296* comment by: *NATS* SC005 tries to permit high quality GNSS derived ADS-B data by permitting the pass through of SDA and SIL data items. This provides a means of delivering ADS-B position information with the full qualification of the position data. However, the hazard that

this presents (i.e. possible spoofing of position, corruption) would not appear to be 'Minor'. This, therefore, appears to be out of process or scope for the SC process which is only intended for Minor hazard changes.

However, we note that the onus may be on the user of ADS-B to assure themselves of, or mitigate, the risks that present themselves from the use of ADS-B.

Impact -
SC005 describes a Minor change but without the verification that the hazards related to full GNSS qualification being passed through and broadcast by aircraft subject to CS-STAN have been adequately qualified as a Minor Hazard.
However, it is noted that the SC would appear to comply with CS-ACNS for the integration of 2 TSO compliant devices.

Suggested Resolution -
Present the analysis that SC005 is within scope of CS-STAN and that spoofing and corruption is a Minor hazard. Alternatively, recognise that there are other mitigations within ATM that may address these issues – however, these should be declared.

The SC should make explicit the mitigations that have been identified in the installation (to support future users understanding of the provenance of the data). This should include the requirement that the positioning source data should be recognised by the transponder manufacturer or through an integrated piece of equipment.

response

Partially accepted

The quality indicators have been clarified, and now they are consistent with FAA AC 20-165B. EASA's approach is as conservative as the FAA's.

The FAA implements ADS-B OUT as the primary means of surveillance in their airspace (refer to the response to comment #311). All the proposed configurations are based on a certified ADS-B transmitter. Quality indicators take into account the quality of the GNSS position. The ADS-B units comply with the minimum performance and safety requirements. In the past, installations that conformed to AMC 20-24 with a certified GNSS source were processed as 'minor modifications' by EASA. CS-STAN makes it possible to consider that a configuration 1 installation is so straightforward that it does not even need a minor modification. For configurations 2 and 3, the evaluation made by the equipment manufacturer of the transponder is another means of compliance of a minor modification on a simple installation of a simple aircraft. A minor modification would be limited to administrative tasks in this case. Spoofing of the GPS signal can occur on any unit. Cyber security attacks can occur on any ADS-B unit. CS-ACNS and AMC 20-24 indirectly contain the ATM mitigation means for the described concepts of operations. The quality indicators should be used by the applications that use the transmitted data.

Refer also to the response to comment #27.

comment *308* comment by: *European Powered Flying Union*

Installation of an ADS-B OUT system compliant with AMC 20-24
page 17/65

We welcome this proposal. We would like to suggest an amendment, which enables the pilot-owner to install and release the change, in case the ADS-B OUT system is of a "zero install" design.
Please refer to this product as an example (note: this particular product is for the US market)
https://uavionix.com/products/skybeacon/

Rationale:
Further products of a similar design are likely to appear on the market. ADS-B IN/OUT enhance situational awareness considerably.

response

Partially accepted

Refer to the responses to comments #169 and #270.

comment

312 comment by: *EUROCONTROL*

Attachment #2

Please refer to the attached file for an inline version of the comments and text proposals provided.

response

Partially accepted

The majority of the proposals from commenters have been included in the various configurations for ADS-B OUT.

The main non-retained comment is the deletion of the reference to AMC 20-24.

Also, refer to the responses to comments #27, #130, #295, and #296.

comment

314 comment by: *General Aviation Manufacturers Association / Hennig*

The section Standard Change CS-SC005a addresses the "Installation of an ADS-B Out system compliant with AMC 20-24" according to its title and correctly points in section 1. to a note that states that compliance with Commission Implementation Regulation (EU) No 1207/2011 would not be achieved.

AMC 20-24 is primarily guidance built around ED-102 (DO-260) with references to parameters such as NUC. CS-SC005a, however, points to the "ADS-B transmit unit...is certified in accordance with ETSO-C166b, or later revisions, or equivalent."

GAMA recommends EASA clarifying the difference between the legacy avionics standards in AMC 20-24 (i.e., ED-102/DO-260) and this section pointing to only ESO-C166b or later revisions being acceptable to improve clarity. While ED-102/DO-260 is in limited use (e.g., Australia and Canada(for limited airspace)), the equipment may not necessarily be appropriate for aircraft covered by CS-STAN. Does the inclusion of a section about AMC 20-24 in CS-STAN infer a degree of acceptance by the agency of

	the legacy standard with its known operational issues and possible encouragement of new installations?
response	Accepted EASA's intent is not to include DO-260/ED-102 transmitters. The various configurations of ADS-B OUT have been amended to clearly refer to DO-260B or a later revision. AMC 20-24 is kept as a reference for the operational concept.

Standard Change CS-SC006a p. 19-20

comment	*15* comment by: *FLARM Technology* The last condition, "Only when the above criteria have been observed can the transponder be configured to report SIL=1 and SDA=1", is ambiguous. First, all of the conditions/criteria are mandatory, so the "only when" implies that some would be not. Second, it's not clear if SIL/SDA=1 are the maximum, minimum, or exact values that they should be set to (it should be maximum, since other considerations may require them to be set to 0).
response	Accepted The quality indicators have been clarified and are consistent with FAA AC 20-165B.

comment	*16* comment by: *FLARM Technology* Since the transponder installation is not approved, there should be a limitation that the aircraft cannot fly in TMZs (similar to CS-SC002c and CS-SC058b). In addition, limitations, warnings and placards should be added with "Not authorized for transponder mandatory zones". The pilot operating the aircraft could otherwise be made to believe that the aircraft can be operated in TMZs, since he does not know the airworthiness requirements under which the transponder was installed.
response	Accepted The text has been modified to clearly reference a transponder that can be used in TMZ for the eligible aircraft.

comment	*17* comment by: *FLARM Technology* EU regulations require aircraft operating IFR/GAT to carry and operate a certified Mode-S transponder (and fully approved installation). Applicability/Eligibility (Section 2) should therefore exclude aircraft certified for IFR. Alternatively, limitations, warnings and placards should be added with "VFR only". The pilot operating the aircraft could otherwise be made to believe that the aircraft can be operated IFR, since he does not know the airworthiness requirements under which the transponder was installed.
response	Accepted

CS-SC002c has been modified to refer to elementary surveillance only. The ADS-B OUT configurations can be installed on aircraft that do not have to comply with the ADS-B mandate in Europe (Commission Regulation (EU) No 1207/2011, of 22 November 2011).

comment *18* comment by: *FLARM Technology*

Section 4 states that CS-STAN cannot be used for installing the Mode-S transponder if TABS is already installed. However, it should not be permissible to install a Mode-S transponder with CS-STAN if any type of transponder is already installed. Otherwise, it would lead to two transponders being installed in the aircraft.

response Accepted

The ADS-B OUT configurations have been modified to include a reference to the transponder. There is a specific configuration for a class B TABS that is used as a GNSS position source.

comment *28* comment by: *Luftfahrt-Bundesamt*

This SC should be completely removed.
It would result in the same frequency congestion problem as described above (**) or even worse.
Furthermore, a system which can only be operated in uncontrolled airspace (e.g. G) and whose usage is subject to a specific AIP documented approval (which can be different in EU member states) adds very less value. On the other hand that limitation will be difficult/impossible to enforce.

response Partially accepted

The ADS-B OUT configurations have been reworded. Overall, EASA considered FAA AC 20-165B and adopted only the most conservative options.

Refer also to the responses to comments #296, #311 and #270.

comment *35* comment by: *European Powered Flying Union*

CS-SC006a Installation or activation of an ADS-B system for airborne awareness
page 19/65
1. Purpose
Top textblock

"The embodiment of this SC is on a no-hazard/no-credit basis": What does "no-hazard/no-credit"mean? Please explain this in a short explanatory sentence.

Rationale:
The term is difficult to explain to non-native language users, difficult to translate in other languages, this because one might assume that in the absence of hazards credits up to a certain limit would be granted...

The new SC is strongly supported, but the conditions lack clarity and are too restrictive in the following ways:

1) "Interfaced equipment must be specified within the individual equipment installation manuals."

-It lacks clarity.: What is "interfaced equipment" and which "individual equipment manuals"? In most cases it would be impossible for the manufacturer of one piece of equipment to foresee the existence, let alone the compatibility, of a piece of equipment developed later.

Our question: Do you really expect the manufacturer of an altitude encoder to specify the models of transponder and GNSS system for which it may serve as an altitude source?

2) "The GNSS system is authorised in accordance with: …"

The requirements for the GNSS system to meet ETSO-C129a, C145/6 or C196a may be necessary for the system to be configured to use SIL=1 and SDA=1. But this should not be a requirement for a SIL=0 and SDA=0 installation.

3) "Only when the above criteria have been observed can the transponder be configured to report SIL=1 and SDA=1." It is in the same list of bulleted items as the conditions, but it clearly is not a condition.

response

Accepted

The ADS-B OUT configurations have been amended.

comment

51 comment by: *CAA CZ*

CS-SC006a—Installation or activation of an ADS-B system for airborne awareness (new)
Comment: The GNSS equipment ETSO requirements are defined slightly different in this SC006a as compared to those included in SC005a, e.g. ETSO C145/146 (or later revisions) vs. ETSO-C145c and ETSO-C146c (or later revisions). Also, the specification of the connection between GNSS and transponder uses a different wording in SC006a as compared to SC005a. We recommend you to check consistency and consider using common requirements and language, where possible.

response

Accepted

The ADS-B OUT configurations have been amended.

comment

64 comment by: *GdF*

Is a proposal on the same topic as CS-SC005a. It should be merged and therefore we propose to delete 006a and improve 005a.

response | Accepted

The ADS-B OUT configurations have been amended.

comment | *79* comment by: *DGAC Deputy Head of aircraft and operations rulemaking department*

In §5 “Manuals”, an update of the ICAs mandates the implementation of SIB N° 2011-15 provisions every 2 years. Considering the fact that aircraft applying that CS-STAN might be already equipped with the concerned equipment prior application of the CS-STAN without having to perform those checks every 2 years, this 2-year period seems too restrictive considering the expected benefits in term of safety.
France published guidelines requiring performing tests similar to SIB N° 2011-15 every 5 years. Mandating a 2 year interval will create non-justified distortions between aircraft with and without these CS-STAN applied.

So DGAC France suggests to change the §5 as follow : “Amend the Instructions for Continued Airworthiness (ICA) establish maintenance actions / inspections and intervals, if applicable. In particular, include in the ICAs:

- A check similar in term of content to EASA SIB N° 2011-15 provisions, at intervals defined an dpublished by the competent authority, or
- A check in accordance with the latest version of EASA SIB N° 2011-15 at intervals not to exceed 2 years.

response | Accepted

Refer to the response to comment #77.

comment | *86* comment by: *DGAC Deputy Head of aircraft and operations rulemaking department*

This SC is subject to Member State's authorisation/conditions. Therefore it is raised several issues :
- cross border coordination,
- impact assessment,
- guidance for Member State's authorisation issuance, ...

DGAC France understands and supports the need to simplify voluntary installation of airbone awareness systems. Nevertheless DGAC France considers that this SC does not reduce the regulatory burden, because it is dependant on each Member State's decision. It should be discussed more in details between EASA and Member State's to be applicable without national limitations and added in CS-STAN.

response | Accepted

These limitations have been reworded to ‘uncontrolled airspace and as further authorised by Member States’.

comment	*91* comment by: *ADAC Luftfahrt Technik GmbH* SC006a should be deleted therefore installers should be encouraged to use CS-ACNS to provide a common standard
response	Partially accepted Refer to the responses to comments #89 and #90.

comment	*106* comment by: *Europe Air Sports* Installation or activation of an ADS-B system for airborne awareness NPA text: 1. Purpose: .... "The embodiment of this SC is on a *no-hazard/no-credit basis.*" EAS Comment: What does this mean? A clarifying rewrite or explanantion is requested.
response	Accepted The ADS-B OUT configurations have been amended.

comment	*131* comment by: *EUROCONTROL* SC006a requires the same system components as SC005a but sets different quality indicators. This causes detrimental overlap and confusion. It is suggested to remove SC006 and update SC005 as suggested.
response	Partially accepted The ADS-B OUT configurations has been amended.

comment	*157* comment by: *FNAM* **AGREEMENT** FNAM and GIPAG thank for adding this new possibility
response	Noted

comment	*158* comment by: *FNAM* **ISSUE - 2. Applicability/Eligibility** EASA proposed disposals ensure more flexibility for other than complex motor-powered aircraft which have a maximum cruising speed in ISA conditions below 250kt, for rotorcraft that are not complex motor-powered aircraft and to any ELA2 aircraft. FNAM and GIPAG are not certain to understand the scope of this proposal and suggest EASA to clarify that ELA1 aircraft are included in the scope of ADS-B system

for airborne awareness installation or activation flexibility. Since ELA2 are included into the scope, there is no safety impact, otherwise a positive one, to include also ELA1 aircraft.
Moreover, the entire scope of General Aviation aircraft is not covered by this proposed disposal. General Aviation organizations are also maintaining ELA1 and complex motor-powered aircraft. Since EASA proposed disposals goal is to support operations of "*General Aviation aircraft in Europe by reducing the regulatory burden for the embodiment of simple changes and repairs in certain aircraft*", FNAM and GIPAG suggest to ensure that following aircraft are included in the scope of CS-SC006a:

- ELA1, ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

PROPOSAL
Add all General Aviation aircraft into the scope of CS-SC006a such as:

- ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

Clarify if ELA1 aircraft are included into the scope of CS-SC006a

response

Partially accepted

Refer to the responses to comments #146 and #153.

comment

159 comment by: *FNAM*

ISSUE - 2. Applicability/Eligibility
EASA proposed disposals are defining the applicability of CS-SC002c depending on the maximum cruise speed of the aeroplane: "*which have a maximum cruise speed in ISA conditions below 250kt*". FNAM and GIPAG wonder if the definition of this maximum cruise speed will fit to each and every General Aviation aeroplanes.
Moreover, aircraft speed could be measured with different referential : True Air Speed or Indicate Air Speed. In order to ensure an efficient understanding and implementation of EASA proposed disposals, FNAM and GIPAG suggest to precise if the maximum cruise speed is measured on True Air Speed or Indicate Air Speed. Therefore FNAM and GIPAG propose to add into CS STAN-80:
« Cruise speed: For this Regulation, the cruise speed is measured in ISA condition and expressed Knot and IAS. »
PROPOSAL
Define the abbreviation "*ISA*" and *"IAS"*
Add : *« Cruise speed: For this Regulation, the cruise speed is measured in ISA condition and expressed Knot and IAS. »*

response	Accepted The CS has been amended and TAS is now specified.

comment	*160* comment by: *FNAM* **ISSUE – 5.Manuals** Instruction of Continued Airworthiness are currently drown up by Design Approval Holders only. Nevertheless, EASA proposed disposals introduce possibilities for maintenance organizations to amend Instruction of Continuing Airworthiness in order to establish maintenance inspections/actions. This is non-consistent with Regulation (EU) N°1321/2014 maintenance organizations privileges. Therefore, FNAM and GIPAG suggest to harmonize EASA proposals in all European requirement by amending Regulation (EU) N°1321/2014 maintenance organizations privileges. **PROPOSAL** Harmonize proposed requirements in all European regulations
response	Not accepted Refer to the response to comment #148.

comment	*161* comment by: *FNAM* **ISSUE – 5.Manuals** An update of the ICAs mandates the implementation of SIB N° 2011-15 provisions every 2 years. Considering the fact that aircraft applying that CS-STAN might be already equipped with the concerned equipment prior application of the CS-STAN without having to perform those checks every 2 years, this 2-year period seems too restrictive considering the expected benefits in term of safety. French NAA published guidelines requiring performing tests similar to SIB N° 2011-15 every 5 years. Mandating a 2 year interval will create non-justified distortions between aircraft with and without these CS-STAN applied. **PROPOSAL** Modify to : "*Amend the Instructions for Continued Airworthiness (ICA) establish maintenance actions / inspections and intervals, if applicable. In particular, include in the ICAs:* • *A check similar in term of content to EASA SIB N° 2011-15 provisions, at intervals defined by the authority designated by the Member State of registry (if defined and published), or* • *A check in accordance with the latest version of EASA SIB N° 2011-15 at intervals not to exceed 2 years*"
response	Not accepted Refer to the response to comment #148.

comment *168* comment by: *PPL/IR Europe*

The new SC is strongly supported, but the conditions lack clarity and are too restrictive in the following ways:

1) "Interfaced equipment must be specified within the individual equipment installation manuals."
lacks clarity. What is "interfaced equipment" and which "individual equipment manuals"? In most cases it would be impossible for the manufacturer of one piece of equipment to foresee the existence, let alone the compatibility, of a piece of equipment developed later. Do you really expect the manufacturer of an altitude encoder to specify the models of transponder and GNSS system for which it may serve as an altitude source?

2) "The GNSS system is authorised in accordance with: …"
The requirements for the GNSS system to meet ESTO-C129a, C145/6 or C196a may be necessary for the system to be configured to use SIL=1 and SDA=1. But this should not be a requirement for a SIL=0 and SDA=0 installation.

3) "Only when the above criteria have been observed can the transponder be configured to report SIL=1 and SDA=1."
is unclear. It is in the same list of bulleted items as the conditions, but it clearly is not a condition.

Proposal: replace section 3 from line 4 onwards as follows:

Additionally, the following conditions apply:
— Any antenna connected to the transponder has a resulting pattern that is vertically polarised, omnidirectional in the horizontal plane, and has sufficient vertical beam width to ensure proper system operation during normal aircraft manoeuvres (credit can be taken from the embodiment of SC002a or later revision).
— All instructions and limitations detailed in the equipment installation manuals must be observed.
— A system ground test that verifies all transmitted data, including any optionally transmitted data where provided, according to CS ACNS.D.ADSB.020, must be performed.

The transponder must be configured to transmit SDA=0 SIL=0, unless the following criteria are satisfied, in which case it may be configured to transmit SDA=1 SIL=1:
— The ADS-B surveillance functionality provides data according to CS ACNS.D.ADSB.020.
— The transponder equipment and its installation are in compliance with point CS ACNS.D.ELS.010 and the altitude encoder is approved in accordance with ETSO-C88A, or a later revision, or equivalent (credit can be taken from the embodiment of SC002a or later revision).
— If automatic determination of the on-the-ground status is not available, the on-the-ground status is set to 'airborne' (credit can be taken from the embodiment of SC002a or later revision).
— The reported pressure altitude is obtained from an approved source connected to the static pressure system that provides pressure to the instrument used to control the aircraft (credit can be taken from the embodiment of SC002a or later revision).

— The equipment is qualified for the environmental conditions to be expected during normal operation (credit can be taken from the embodiment of SC002a or later revision).
— The ADS-B transmit unit (transponder) is certified in accordance with ETSO-C166b, or later revisions, or equivalent.
— The GNSS system is authorised in accordance with:
• ETSO-C129a, or
• ETSO C196a and ETSO C145/C146, or later revisions, or equivalent.
Note: The GNSS receiver can be integrated into the transponder and authorised in accordance with:
— ETSO-C196a, or
— ETSO-C145/C146,
or later revisions, or equivalent.
— There is a direct digital interface connection between the GNSS receiver and the transponder (this connection must not be via data converters, data concentrators, interface units, other equipment, etc.);

response

Partially accepted

The ADS-B OUT configurations have been amended.

comment

170 comment by: *The Norwegian Air Sports Federation*

NLF welcomes this proposal. As with regard to CS-CS005a, we would like to suggest an amendment, which enables the pilot-owner to install and release the change, in case the ADS-B system is of a "zero install" design. Please refer to this product as an example:

https://uavionix.com/product/skysensor-exp/

Further products of a similar design are likely to appear on the market.

Furthermore, if there are any items in the draft CS-SC006a, which preclude the installation of products such "zero install" designs in Europe, NLF would like to encourage the Agency to look into possible amendments/adaptions.

response

Partially accepted

Even for the configuration with the lowest quality indicators, it is important to have those quality indicators correctly set to 0 and checked by a ground test. This mitigates the potential hazards for ATC. Refer also to the response to comment #296.

comment

185 comment by: *Garmin International*

Subpart B, Standard Change CS-SC006a, Paragraph 3 - Page 20:

Paragraph 3 includes the condition:

" The GNSS receiver is certified in accordance with:

- ETSO-C129a, or
- ETSO-C196a and ETSO-C145/C146,

or later revisions, or equivalent.

Note: The GNSS receiver can be integrated into the transponder and authorised in accordance with:

- ETSO-C196a, or
- ETSO-C145/C146,

or later revisions, or equivalent. "

It is unlikely the intent of the agency is to require a GNSS receiver with ETSO-C196a approval as well as an additional approval for ETSO-C145 or ETSO-C-146. It is also unclear why exact versions of the ETSOs are specified. If the interfaced equipment is specified within the individual equipment installation manuals, then a limitation for specific ETSO versions is not needed for this Standard Change. Further, this Standard Change should also be applicable to installations consisting of a Class B TABS GNSS source and an ETSO C166b certified transponder as noted in SC-002c Paragraph 3. It is suggested the item be revised to state:

The GNSS receiver is certified in accordance with ETSO C129(), ETSO-C196(), ETSO-C199() Class B, ETSO-C145() or ETSO-C146(), or equivalent.
Note: The GNSS receiver can be integrated into the transponder.

response

Accepted

The condition has been clarified.

comment

186 comment by: *Garmin International*

Subpart B, Standard Change CS-SC006a, Paragraph 4 - Page 20:

The fourth item of Paragraph 4 states:

If a traffic awareness beacon system (TABS) equipment is already installed in the aircraft, the Mode S transponder system cannot be installed using CS-STAN.

This should be modified to specify "a Class A TABS device". According to CS-STAN.05 a Class A TABS can be "a Class A device, or a TSO-C112e- and TSO-C166b-compliant device". It is assumed the intent of the sentence is to prevent the installation of both a ETSO-C199a Class A device and a Mode S Transponder. It is suggested the item be revised for clarity and consistency with SC-002c:

If a Class A TABS device, which is not certified in accordance with ETSO-C166() or ETSO-C112(), or equivalent, is already installed in the aircraft, the Mode S transponder system cannot be installed using
CS-STAN.

response

Accepted

The configuration of ADS-B OUT with a class B TABS as GNSS position source has been clarified.

comment

273 comment by: *Europe Air Sports*

Installation or activation of an ADS-B system for airborne awareness

EAS Comment:
The new SC is strongly supported, but the conditions lack clarity and are too restrictive in the following ways:

1) “Interfaced equipment must be specified within the individual equipment installation manuals.”

- lacks clarity. What is “interfaced equipment” and which “individual equipment manuals”? In most cases it would be impossible for the manufacturer of one piece of equipment to foresee the existence, let alone the compatibility, of a piece of equipment developed later. Do you really expect the manufacturer of an altitude encoder to specify the models of transponder and GNSS system for which it may serve as an altitude source?

2) “The GNSS system is authorised in accordance with: …”

The requirements for the GNSS system to meet ETSO-C129a, C145/6 or C196a may be necessary for the system to be configured to use SIL=1 and SDA=1. But this should not be a requirement for a SIL=0 and SDA=0 installation.

3) “Only when the above criteria have been observed can the transponder be configured to report SIL=1 and SDA=1.”

- is unclear. It is in the same list of bulleted items as the conditions, but it clearly is not a condition.

Proposal: replace section 3 from line 4 onwards as follows:

Additionally, the following conditions apply:
— Any antenna connected to the transponder has a resulting pattern that is vertically polarised, omnidirectional in the horizontal plane, and has sufficient vertical beam width to ensure proper system operation during normal aircraft manoeuvres (credit can be taken from the embodiment of SC002a or later revision).
— All instructions and limitations detailed in the equipment installation manuals must be observed.

— A system ground test that verifies all transmitted data, including any optionally transmitted data where provided, according to CS ACNS.D.ADSB.020, must be performed.
The transponder must be configured to transmit SDA=0 SIL=0, unless the following conditions apply, in which case it may be configured to transmit SDA=1 SIL=1:
— The ADS-B surveillance functionality provides data according to CS ACNS.D.ADSB.020.
— The transponder equipment and its installation are in compliance with point CS ACNS.D.ELS.010 and the altitude encoder is approved in accordance with ETSO-C88A, or a later revision, or equivalent (credit can be taken from the embodiment of SC002a or later revision).
— If automatic determination of the on-the-ground status is not available, the on-the-ground status is set to 'airborne' (credit can be taken from the embodiment of SC002a or later revision).
— The reported pressure altitude is obtained from an approved source connected to the static pressure system that provides pressure to the instrument used to control the aircraft (credit can be taken from the embodiment of SC002a or later revision).
— The equipment is qualified for the environmental conditions to be expected during normal operation (credit can be taken from the embodiment of SC002a or later revision).
— The ADSB transmit unit (transponder) is certified in accordance with ETSOC166b, or later revisions, or equivalent.
— The GNSS system is authorised in accordance with:
• ETSO-C129a,
or
• ETSO-C196a and ETSO-C145/C146, or later revisions, or equivalent.
Note: The GNSS receiver can be integrated into the transponder and authorised in accordance with:
— ETSO-C196a, or
— ETSO-C145/C146,
or later revisions, or equivalent.
— There is a direct digital interface connection between the GNSS receiver and the transponder (this connection must not be via data converters, data concentrators, interface units, other equipment, etc.);

In addition, similar to our comment on CS-SC005a, we would like to suggest an amendment, which enables the pilot-owner to install and release the change, in case the ADS-B system is of a "zero install" design. Please refer to this product as an example:
https://uavionix.com/product/skysensor-exp/

While this product is meant for the US non-certified market, it exemplifies that safety-enhancing ADS-B solutions can be very simple to install.
Further products of a similar design are likely to
appear on the market.
Furthermore, if there are any items in the draft CS-SC006a,
which preclude the installation of products
such "zero install" designs in Europe, EAS would like to
encourage the Agency to look into possible
amendments/adaptions.

response

Partially accepted

The ADS-B OUT configurations have been reworded. The comment related to CS-SC006a is identical to the proposal contained in comment #312. Refer to the response to comment #312. For the comment related to the lowest-quality indicators, please refer to the response to comment #170.

comment

275 comment by: *Martin Ryff*

Standard Change CS-SC006a
INSTALLATION OR ACTIVATION OF AN ADS-B SYSTEM FOR AIRBORNE AWARENESS
1. Purpose

Please clarify what is meant by "no-hazard/no-credit basis. The wording is not understandable.

response

Accepted

The ADS-B OUT configurations have been amended.

comment

287 comment by: *Airbus Helicopters*

Paragraph No: 4 Limitations
Comment: QUOTE “if a traffic awareness beacon system (TABS) equipment is already installed in the aircraft” UNQUOTE may address precisely the ETSO authorisation(s) issued by EASA
Rationale: EASA issues ETSO authorisation for TABS under the ETSO-C199
Proposed text: if a traffic awareness beacon system (TABS) **ETSO-C199 authorized** equipment is already installed in the aircraft

response

Accepted

The ADS-B OUT configurations have been amended.

comment

288 comment by: *European Sailplane Manufacturers*

The wording under "4. Limitations" regarding use of such a system is probably too onerous.

Current wording:
...Operation of the system is limited to uncontrolled airspace only and is subject to the Member State's authorisation/conditions as documented in the relevant official aeronautical publication.

Proposed wording:
...Operation of the system is limited to uncontrolled airspace and is subject to the Member State's authorisation/conditions as documented in the relevant official aeronautical publication, which could limit use in controlled airspace.

Rationale:
It is obviously in the responsibility of the member states to allow usage of such a system also in controlled airspace (is it so - needs to be checked).
If it is so, then the SC should make the operator aware of this fact.
But the SC should not forbid usage in controlled airspace per se.

Additionally, it could be discussed to require installation of a placard in the cockpit in case of restrictions of operation in certain airspaces to inform the pilot.

response

Accepted

The text has been amended for reasons of clarity.

Refer also to the responses to comments #26, #86, #296, and #311.

comment

297 comment by: *NATS*

SC006 tries to get around the Minor Hazard issue (raised in our earlier comment) by requiring that the full qualification of GNSS data is not provided and that instead this is 'dumbed down' or downgraded to a low SIL and SDA. This mitigates the hazard of corruption and spoofing by qualifying the data as 'do not trust'. However, this creates a number of issues: 1) this limits the potential benefits from ADS-B by limiting the possible use of this data – given that it cannot be trusted it is essentially worthless for any use; and 2) adds considerable practical complication for implementers that is not in accordance with the principles of safety benefits at low cost. Given that the GNSS source is 'good' and the Transponder is 'good', a further modification needs to be introduced between the two components to deliver the dumbing down. In practicality, this would likely be a software modification to either the transponder or GNSS – neither of which would be a Minor modification and would therefore be out of scope for the SC process.

Issue -
SC006 misses the point of ADS-B and fails to grasp the opportunity that ADS-B presents.

Hard-coded unqualified ADS-B cannot be used for any purpose and must be discarded by any receiving system. Since it cannot be used it is therefore worthless – worse, it is just interference on the frequency.

The introduction of an additional component or software modification into the surveillance chain to deliver the dumbing down of ADS-B would not appear to be a

	Minor change and is therefore out of scope of the SC process. Furthermore it would appear to add costs and so be at odds with the stated purpose of the SC process and approach. Suggested Resolution - Permit full qualification of GNSS data in ADS-B. But address the challenges of whether this is a Minor modification (as described in earlier comments to SC005). The integration of additional functionality in the surveillance chain to 'dumb down' the ADS-B data would appear to be at odds with the goals of cost-efficient changes that would undermine the practicality of this change.
response	Partially accepted CS-STAN is limited to airborne installations. CS-STAN does not address the ATC 'surveillance chain', and therefore modifications of ground systems are out of the CS-STAN scope. CS-STAN installations ensure that the minimum airborne functional and performance requirements are met. Also, refer to the response to comment #296.

Standard Change CS-SC034ab p. 21-22

comment	*36* comment by: *European Powered Flying Union* CS-SC034~~a~~b page 22/65 6. Release to service Thank you for this Pilot-owner release provision. Rationale: This is in-line with the pilosophy of Standard Changes/Standard Repairs.
response	Noted

comment	*52* comment by: *CAA CZ* **CS-S0034b—Exchange of an existing battery for a Lithium Iron phosphate (LiFePO4)** We propose to evaluate potential toxic fumes and fire risks to the cabin. Thermal runaway is less probable than in other lithium battery types but could occur. The ways how to improve the system would be metallic box with safety valve, venting outside, battery temperature measurement and warning etc. We propose to the installer to evaluate risks of lithium battery charging (appropriate charging system, ground battery charging outside the sailplane only). We recommend to the installer to amend the AFM with new battery that contains or references the equipment instructions for operation, as required.
response	Not accepted

	A number of mitigating factors have already been included in this SC (e.g. maximum energy, limitations, standards to be complied with). Additionally, any limitation defined by the battery system manufacturer has to apply. Introducing further limitations would jeopardise the possibility to use this SC.
comment	*81* comment by: *DGAC Deputy Head of aircraft and operations rulemaking department* DGAC France suggests to modify the end of the first bullet of §3 " Acceptable methods, techniques and practices" as follow : "[...] with one of the following **standards**:".
response	Accepted The text has been amended accordingly.
comment	*171* comment by: *The Norwegian Air Sports Federation* NLF strongly supports that the change in the mentioned cases may be released to service by the pilot-owner.
response	Noted
comment	*289* comment by: *FAA* Page 21 Para 3 Referenced Text: Before installation, a statement has to be available to ensure that Acceptable standards for the battery systems, batteries or the battery cells test (performed and stated by the battery manufacturer) are compliant at least with one of the following has to be available: Comment/Rationale or Question All the standards shown below specifies recharrgeable lithium batteries. is it possible for these sailplanes to be powered by non-rechargeable lithium batteries? If so maybe have to specify RTCA DO-227A or TSO c142b? Proposed Resolution Add non-rechargeable lithium batteries
response	Not accepted EASA does not envisage the need to add non-rechargeable batteries to this SC because their use would be uneconomical and not environmentally friendly.
comment	*290* comment by: *FAA*

Page 21 Para 3

Referenced Text: RTCA DO-347, Certification Test Guidance for Small and Medium Sized Rechargeable Lithium
Batteries and Battery Systems; or

Comment/Rationale or Question
Can they use TSO C179b?

Proposed Resolution
Add TSO C179b acceptability

response

Noted

Batteries that are certified against one or more of the standards listed in this SC and that meet the other limitations can be installed. This does not prevent the installation of batteries with a TSO/ETSO certification.

comment *291* comment by: *FAA*

Page 21 Para 3

Referenced Text: UL 1642, Standard for Lithium Batteries, or equivalent; or
- UL 2054, Standard for Household and Commercial Batteries, or equivalent; or

Comment/Rationale or Question
These 'or' functions allow the replacement batteries to be UL1642 or UL 2054. Is there a limit to the size of these batteries? such as 2 WH. Otherwise no applicant is going to do the previous two bulletized standards.

Proposed Resolution
Clarify whether these UL standards are indeed 'or' functions to the above bullets.

response

Noted

If the battery meets one of the mentioned standards, or an equivalent one, it is eligible for installation, provided that the other limitations are also met.

The maximum allowed capacity is 160 Wh.

comment *292* comment by: *FAA*

Page 21 Para 4

Referenced Text: Each installed battery system shall have a maximum capacity of 160 Wh.

Comment/Rationale or Question
160 WH may be too large for UL 1642, UL 2054, IEC 62133

Proposed Resolution
160 WH may be too large for UL standards.

response | Noted

160WH is to be considered to be the maximum capacity for the installed battery system. Smaller battery systems could be installed, depending on the needs of the aircraft.

Standard Change CS-SC035a p. 23-24

comment | *30* comment by: *Letecké dílny Medlánky*

In section 4. Limitations I propose to omit the following bullet:
The installation of solar cells on structural parts such as the fuselage (i.e. not on the doors) is subject to the aircraft manufacturer not objecting to this installation.

There are some aircraft types whose manufacturer does not exist any more. Next, I have the experience that aircraft manufacturers do not want to spend time dealing with aircrafts which are no longer in production.

response | Not accepted

EASA has determined that the area of the engine doors provides the lowest structural risk in case of a surface temperature increase due to solar radiation. All areas require a structural analysis, which cannot be covered by CS-STAN.

comment | *37* comment by: *European Powered Flying Union*

CS-SC035a
page 23/65
2. Applicability/Eligibility

We propose to include "ELA2".

Rationale:
From our point of view no considerable differences exist between "ELA1" and "ELA2" sailplanes and powered sailplanes as regards applicable technologies .
Installation of solar cells on sailplanes

Allow use of the solar generated electricity also for visual awareness lights and/or pilot heating clothing.

Rationale:
Visual awareness lights are important safety-wise as e.g. a transponder, and heated pilot garments contribute to comfort and thus flight safety.

response | Partially accepted

Please note that currently no ELA2 sailplanes or powered sailplanes exist, as CS-22 does not allow an MTOM that is higher than 850 kg.

The wording of 1. Purpose has been adopted to allow for other electrical consumers, such as for propulsion.

This might require a combined embodiment with other SCs.

comment | *53* comment by: *CAA CZ*

CS-SC035a —Installation of solar cells on sailplanes (new)
Paragraph 3.:
We propose to add following: solar battery charging system should be appropriate for the type of battery used
Paragraph 4.:
- Substitute text “direct charging” by “direct power supply” in the 6th dash.
- We recommend installation of solar cells system by means of this SC for charging **lead-acid type batteries only.** The reason is potential lithium batteries risks (e.g. fumes in the cabin during flight).

Paragraph 5.:
Add following to the end of the first statement: (e.g. Normal, Abnormal and Emergency Procedures for solar cell system power off).

response | Partially accepted

EASA has implemented the wording that is suggested under para 4 and 5. However, EASA does not agree to limit the installation to a type of batteries, as the installed batteries are typically of a smaller capacity, with a management system, and are not used for propulsion.

comment | *107* comment by: *Europe Air Sports*

Installation of solar cells on sailplanes

NPA text:
1. Purpose: "This SC is for the installation of solar cells on sailplanes for the purpose of allowing longer operation of the on-board avionics systems."

EAS Comment:
Allow use of the solar generated electricity also for visual awareness lights and/or pilot heating clothing.

Rationale:
Visual awareness lights can be regarded as important safety-wise as e.g. a transponder.
Heating clothing can become very useful during long flights.

response | Partially accepted

	See the response to comment #37.

comment	*276* comment by: *Martin Ryff* Standard Change CS-SC035a 2. applicability/eligibility Why are ELA2 sailplanes excluded from this very reasonable provision?
response	Noted See the response to comment #37.

comment	*299* comment by: *European Sailplane Manufacturers* Feedback from suppliers of solar cells (SC035) and visual awareness lights (SC036) indicate that the accepted methods for the required holes to install and connect these devices are too onerous. Current wording: ...Any holes required to route cables from the solar cells into the inner parts of the fuselage must not be larger than 5 mm in diameter and ...If several holes are required for these feedthroughs, then these shall not be closer than 30 mm from each other, and the number of holes must be minimised. and ...Any holes required to mount the visual awareness light and the related route cables into the inner parts of the fuselage must not be larger than 5 mm in diameter. Proposed wording: ...Any holes required to route cables from the solar cells into the inner parts of the fuselage should not be larger than 6 mm in diameter. If several holes are required for these feedthroughs, then the number of holes should be minimised. Rationale: The manufacturers of those devices are very much aware that the installation / attachment must not be made in a way that it would be weaking the structure. Therefore the limitations given in teh SC should not be too tight and the allowed areas of installation have already been choosen to represent no highly loaded, critical structural parts.
response	Accepted New wording has been introduced in line with this comment.

comment	*301* comment by: *European Sailplane Manufacturers* Feedback from owners and operators of solar cells on sailplanes indicate that the wording refarding charging batteries on ground is too onerous.

	Current wording: ...Ground charging by means of solar cells is not allowed. Proposed wording: ...Ground charging by means of solar cells is not allowed if the aircraft in unattended. Rationale: The idea of this limitation is probably to avoid any damages / malfunctions when the solar cells load the batteries over a lond period of time (e.g. at a tied-down glider or in a trailer with transparent windows over the solar cells). If the glider is on the ground before take-off or after landing and the pilot is already/still on board or even if the pilot is nearby teh cockpit, then the situation would not be very different to the re-charging when in flight. Therefore such re-charging when the aircraft is attended should not be forbidden.
response	Partially accepted EASA has removed the limitation for ground charging; however, further guidance on the installation of a battery charge controller has been added.

Standard Change CS-SC036a p. 25-27

comment	*54* comment by: *CAA CZ* **Paragraph 1.:** - Does not include explanation of technical performance for the LED lights (e.g. Power/Intensity (Watt/Candela), angle of emitted field etc.). We propose to add design requirements for performance of these LED lights. - Additionally, it is not clear what colours will be acceptable. It is defined that intention of visual awareness lights is to „avoid mid-air collisions“. In aviation we use lights for this purpose, e.g. red anti-collision light, which is generally known for this purpose. Since all basic colours used in aviation have the intended purpose as e.g. colours for exterior lights - red, green, white; white colour is used on tail or is flashing on wingtips, or with higher intensity it is used for landing/taxiing we **strongly recommend to define design requirements including colours** for visual awareness lights otherwise these lights could be very confusing for surrounding pilots. **Paragraph 3.:** In the 12th dash: we propose to add another adverse effect to the pilot view which is the reflection from the canopy/front windshield.
response	Partially accepted The first proposal goes beyond the scope, and may jeopardise the installation of this simple SC. The second proposal is accepted, and the SC has been modified accordingly.

comment	*82* comment by: *DGAC Deputy Head of aircraft and operations rulemaking department*

Considering the §4 "Limitations" of this SC, DGAC France suggests to modify the second bullet of the §5 "manuals" as follow :

- limitations, warnings and placards, at least, for the following:
  - 'For situational awareness only',
  - 'Use in day VFR only';

response

Partially accepted

The limitations to only use these lights for situational awareness have been added to the SC.

Regarding warnings and placards, they are already foreseen, and therefore there is no need to further specify them.

comment *162* comment by: *FNAM*

AGREEMENT
FNAM and GIPAG thank for adding this new possibility

response

Noted

comment *163* comment by: *FNAM*

ISSUE - 2. Applicability/Eligibility
EASA proposed disposals ensure more flexibility for ELA2 aircraft.
FNAM and GIPAG are not certain to understand the scope of this proposal and suggest EASA to clarify that ELA1 aircraft are included in the scope of visual awareness lights installation flexibility. Since ELA2 are included into the scope, there is no safety impact, otherwise a positive one, to include also ELA1 aircraft.
Moreover, the entire scope of General Aviation aircraft is not covered by this proposed disposal. General Aviation organizations are also maintaining ELA1 and complex motor-powered aircraft. Since EASA proposed disposals goal is to support operations of "*General Aviation aircraft in Europe by reducing the regulatory burden for the embodiment of simple changes and repairs in certain aircraft"*, FNAM and GIPAG suggest to ensure that following aircraft are included in the scope of CS-SC036a:

- ELA1, ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

PROPOSAL
Add all General Aviation aircraft into the scope of CS-SC036a such as:

- ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

Clarify if ELA1 aircraft are included into the scope of CS-SC036a

response

Noted

ELA1 aircraft are included in ELA2.

comment

164 comment by: *FNAM*

ISSUE – 5.Manuals
Instruction of Continued Airworthiness are currently drown up by Design Approval Holders only. Nevertheless, EASA proposed disposals introduce possibilities for maintenance organizations to amend Instruction of Continuing Airworthiness in order to establish maintenance inspections/actions. This is non-consistent with Regulation (EU) N°1321/2014 maintenance organizations privileges. Therefore, FNAM and GIPAG suggest to harmonize EASA proposals in all European requirement by amending Regulation (EU) N°1321/2014 maintenance organizations privileges.
PROPOSAL
Harmonize proposed requirements in all European regulations

response

Not accepted

Refer to the response to comment #148.

comment

300 comment by: *European Sailplane Manufacturers*

Feedback from suppliers of solar cells (SC035) and visual awareness lights (SC036) indicate that the accepted methods for the required holes to install and connect these devices are too onerous.

Current wording:
...Any holes required to route cables from the solar cells into the inner parts of the fuselage must not be larger than 5 mm in diameter
and
...If several holes are required for these feedthroughs, then these shall not be closer than 30 mm from each other, and the number of holes must be minimised.
and
...Any holes required to mount the visual awareness light and the related route cables into the inner parts of the fuselage must not be larger than 5 mm in diameter.

Proposed wording:
...Any holes required to route cables from the solar cells into the inner parts of the fuselage should not be larger than 6 mm in diameter. If several holes are required for these feedthroughs, then the number of holes should be minimised.

Rationale:
The manufacturers of those devices are very much aware that the installation / attachment must not be made in a way that it would be weaking the structure. Therefore the limitations given in teh SC should not be too tight and the allowed areas of installation have already been choosen to represent no highly loaded, critical structural parts.

response

Partially accepted

The proposal to increase the size of the holes to 6 mm has been accepted, and the SC has been amended accordingly.

The proposal to remove the requirement to have at least 30 mm between two holes has been kept, as this mitigates the risk of fatigue-related cracks.

Standard Change CS-SC037a p. 28

comment *38* comment by: *European Powered Flying Union*

CS-SC037a Exchange of a main aircraft battery
page 28/65
6. Release to service

Contrary to your proposal we are of the opinion that this standard change is suitable for the release to service of the aircraft by the Pilot-owner.

Ratioale:
Considering the actions required a change of a battery is quite a simple task, the applicability/eligibility section of SC037a supports this opinion.

In some cases the location of the batteries create difficulties and make a change painful in the purest sense of the word, but this is another story.

response

Accepted

A release to service by the pilot-owner is accepted.

comment *55* comment by: *CAA CZ*

We propose to add requirement for airplane charging system evaluation. The charging of the battery has to be appropriate for the battery used.
We propose to use the identical type of battery as the replaced one.

response

Not accepted

The scope of this SC is to allow the exchange of batteries that meet ETSO-C173A, or equivalent, standards. This condition, together with the other requirements of this SC, is deemed sufficient.

comment	*83* comment by: *DGAC Deputy Head of aircraft and operations rulemaking department* In order to be consistent with §4 of the CS-SC034, DGAC France suggest to modify the following limitation : "— Batteries used for ~~electrical or hybrid~~ propulsion are not covered."
response	Accepted The SC has been amended accordingly.

comment	*108* comment by: *Europe Air Sports* Exchange of a main aircraft battery NPA text: 6. Release to service: "This SC is not suitable for the release to service of the aircraft by the Pilot-owner." EAS Comment: Remove the word "not". Rationale: We consider this task simple enough to be eligible for the pilot.
response	Accepted Refer to the response to comment #38.

comment	*172* comment by: *The Norwegian Air Sports Federation* NLF strongly supports this proposal. However, for "direct replacement" batteries, the change is suitable for aircraft release to service by the pilot-owner.
response	Accepted Refer to the response to comment #38.

comment	*194* comment by: *FNAM* **AGREEMENT** FNAM and GIPAG thank for adding this new possibility
response	Noted

comment	*195* comment by: *FNAM* **ISSUE - 2. Applicability/Eligibility**

EASA proposed disposals ensure more flexibility for other than complex motor-powered, for rotorcraft that are not complex motor-powered aircraft and to any ELA2 aircraft.
FNAM and GIPAG are not certain to understand the scope of this proposal and suggest EASA to clarify that ELA1 aircraft are included in the scope of main aircraft battery exchange flexibility. Since ELA2 are included into the scope, there is no safety impact, otherwise a positive one, to include also ELA1 aircraft.
Moreover, the entire scope of General Aviation aircraft is not covered by this proposed disposal. General Aviation organizations are also maintaining ELA1 and complex motor-powered aircraft. Since EASA proposed disposals goal is to support operations of "*General Aviation aircraft in Europe by reducing the regulatory burden for the embodiment of simple changes and repairs in certain aircraft"*, FNAM and GIPAG suggest to ensure that following aircraft are included in the scope of CS-SC037a:

- ELA1, ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

PROPOSAL
Add all General Aviation aircraft into the scope of CS-SC037a such as:

- ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

Clarify if ELA1 aircraft are included into the scope of CS-SC037a

response

Noted

ELA1 aircraft are included in ELA2.

comment

196 comment by: *FNAM*

ISSUE – 5.Manuals
Instruction of Continued Airworthiness are currently drown up by Design Approval Holders only. Nevertheless, EASA proposed disposals introduce possibilities for maintenance organizations to amend Instruction of Continuing Airworthiness in order to establish maintenance inspections/actions. This is non-consistent with Regulation (EU) N°1321/2014 maintenance organizations privileges. Therefore, FNAM and GIPAG suggest to harmonize EASA proposals in all European requirement by amending Regulation (EU) N°1321/2014 maintenance organizations privileges.
PROPOSAL
Harmonize proposed requirements in all European regulations

response

Not accepted

Refer to the response to comment #148.

comment *277* comment by: *Martin Ryff*

Standard Change CS-SC037a
EXCHANGE OF A MAIN AIRCRAFT BATTERY
6. Release to service

Why should a pilot owner not be eligible to simply replace a main aircraft battery as described in "1. Purpose"?

response Accepted

Refer to the response to comment #38.

comment *293* comment by: *Airbus Helicopters*

Paragraph No: 3. Acceptable methods, techniques, and practices
Comment: Additional precautions regarding the potential consequences on the installation on the helicopter safety need to be considered
Rationale: The following considerations are normally taken into account when battery installation is performed through certification
Proposed text: Add following additional conditions;

- Any impact on the previous installation regarding crashworthiness in case of weight increase shall be considered
- Any impact on the explosive or toxic gases emmision in normal or as a result of any probable malfunction in the charging system or battery installation shall be considered

Add on the new battery characteristic that:
- **Any impact on the engine starting characteristics (starter maximum current , engine starting maximum torque) shall be considered.**

response Not accepted

Considerations regarding weight and balance are already included in the SC.

Crashworthiness and toxic gas emissions are covered by the requirement to install the new battery in the same location as that of the one that is to be removed. These points, together with the other requirements of the SC, are deemed sufficient.

Standard Change CS-SC038a p. 29-30

comment *56* comment by: *CAA CZ*

We propose not to allow using the DC to DC converter for the systems necessary for continued safe flight and landing or, perform successful Functional Hazard Assessment.

	Amend the AFM with DC to DC converters system that contains or references the equipment instructions for operation, as required.
response	Accepted Limitations have been added for essential avionics equipment.

comment	*84* comment by: *DGAC Deputy Head of aircraft and operations rulemaking department* In the §3 "Acceptable methods, techniques and practices", the following bullet should be added : "— Any impact on the weight and balance of the aircraft shall be considered."
response	Not accepted The typical weight of this equipment is negligible.

comment	*197* comment by: *FNAM* **AGREEMENT** FNAM and GIPAG thank for adding this new possibility
response	Noted

comment	*198* comment by: *FNAM* **ISSUE – 1. Purpose** *"This SC is for installations of direct current (DC) to DC converters to support avionics installations and equipment that require a power supply with a controlled voltage."* FNAM and GIPAG fear that avionics installations and equipment may limit the scope of EASA proposals for additional flexibilities. DC converters may also be used for other types of equipment such as pilot devices. Therefore, FNAM and GIPAG suggest to add pilot devices for the purpose of the installation of direct current to DC converters. **PROPOSAL** Add "*pilot devices*" for the purpose of installations of direct current to DC converters flexibility
response	Accepted Pilot devices have been added to Section 1.

comment	*199* comment by: *FNAM* **ISSUE - 2. Applicability/Eligibility** EASA proposed disposals ensure more flexibility for other than complex motor-powered, for rotorcraft that are not complex motor-powered aircraft and to any ELA2 aircraft.

FNAM and GIPAG are not certain to understand the scope of this proposal and suggest EASA to clarify that ELA1 aircraft are included in the scope of DC to DC converter installation flexibility. Since ELA2 are included into the scope, there is no safety impact, otherwise a positive one, to include also ELA1 aircraft.
Moreover, the entire scope of General Aviation aircraft is not covered by this proposed disposal. General Aviation organizations are also maintaining ELA1 and complex motor-powered aircraft. Since EASA proposed disposals goal is to support operations of "*General Aviation aircraft in Europe by reducing the regulatory burden for the embodiment of simple changes and repairs in certain aircraft"*, FNAM and GIPAG suggest to ensure that following aircraft are included in the scope of CS-SC038a:

- ELA1, ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

PROPOSAL
Add all General Aviation aircraft into the scope of CS-SC038a such as:

- ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

Clarify if ELA1 aircraft are included into the scope of CS-SC038a

response

Not accepted

ELA1 is included in ELA2.

comment

200 comment by: *FNAM*

ISSUE – 5.Manuals
Instruction of Continued Airworthiness are currently drown up by Design Approval Holders only. Nevertheless, EASA proposed disposals introduce possibilities for maintenance organizations to amend Instruction of Continuing Airworthiness in order to establish maintenance inspections/actions. This is non-consistent with Regulation (EU) N°1321/2014 maintenance organizations privileges. Therefore, FNAM and GIPAG suggest to harmonize EASA proposals in all European requirement by amending Regulation (EU) N°1321/2014 maintenance organizations privileges.
PROPOSAL
Harmonize proposed requirements in all European regulations

response

Not accepted

Refer to the response to comment #148.

comment	*239* comment by: *RECTIMO AVIATION* Add “pilot devices” for the purpose of installations of direct current to DC converters flexibility
response	Accepted Refer to the response to comment #198.

comment	*302* comment by: *Airbus Helicopters* Paragraph No: 3. Acceptable methods, techniques, and practices **Comment**: Additional precautions regarding the potential consequences on the installation on the helicopter safety need to be considered **Rationale**: The following consideration is normally taken into account when battery installation is performed through certification **Proposed text**: Add following additional condition; **- The bus bar rating and primary current protection shall allow this additional load**
response	Noted The concern expressed by the commentator has been already addressed by the following requirement: If there are systems or equipment that are supplied by an essential power supply, i.e. systems or equipment that are necessary for continued safe flight and landing, an electrical load analysis or electrical measurements shall be undertaken. This analysis or measurement shall take into account the maximum loading that may be utilised from the power supply system (PSS) for the portable electronic device (PED) to substantiate that the aeroplane’s electrical power generating system has sufficient capacity to safely provide the maximum amount of power required by the PSS for the PED. This assessment shall be recorded in EASA Form 123.

Standard Change CS-SC051bc p. 31-32

comment	*24* comment by: *FLARM Technology* Remove “Flight Alarm” in the first note. FLARM is a name and does not stand for “Flight Alarm”. (Historically it’s a portmanteau of "flight" and "alarm", but was never called as such, is not an abbreviation and does not stand for that). This was also not in the previous SC, not sure why it was introduced into the NPA.
response	Accepted The text has been amended accordingly.

comment	*57* comment by: *CAA CZ*

CS-SC051c —Installation of 'FLARM' equipment (amended)
Comment: We recommend you to consider removing the sentence/condition (paragraph 3. of the SC) "mandated by the respective Minimum Equipment List (MEL), if this exists".
Explanation: By its definition, MEL does not provide a mandate for an item of equipment. Contrarily, MEL provides alleviation (or a relief) from a requirement (mandate) applicable for that particular equipment item. Therefore, the SC user will probably have difficulty to find whether or not is the concerned 'other equipment' to be connected with the FLARM "mandated" by MEL. If the equipment item is not listed in MEL, it means, there is no alleviation applicable for that particular item (and as a consequence of that, such item shall probably not be connected with FLARM). In our understanding, the probable intent of this sentence is to allow connecting the FLARM with other equipment, for which alleviation (or a relief) is available in the MEL (if the MEL exists). On the other hand, the SC (implicitly) allows disregarding this requirement if the MEL does not exist for the particular aircraft. Since we believe the "MEL mandate" is not a relevant requirement (we do not see it would bring any additional practical limitation for the connected equipment item), we suggest you to consider removing this condition (bullet) from this SC.

response

Accepted

The reference to the MEL has been deleted.

comment *187* comment by: *Garmin International*

Subpart B, Standard Change CS-SC051c, Paragraph 1 - Page 31:

Paragraph 1 contains the note:

Note: FLARM equipment is not equivalent to Transponder Mode A/C/S, ADS-B, Class A TABS or TCAS/ACAS equipment.

It is suggested to add to this note to clarify the resulting performance of the equipment:

Note: FLARM equipment is not equivalent to Transponder Mode A/C/S, ADS-B, Class A TABS or TCAS/ACAS equipment. Aircraft will not be seen by air traffic control nor by ACAS (TCAS) unless the aircraft is equipped with at least a Mode A/C transponder.

response

Accepted

The text has been amended accordingly.

comment *201* comment by: *FNAM*

ISSUE - 2. Applicability/Eligibility
EASA proposed disposals ensure more flexibility for ELA2 aircraft.
FNAM and GIPAG are not certain to understand the scope of this proposal and suggest EASA to clarify that ELA1 aircraft are included in the scope of FLARM

installation flexibility. Since ELA2 are included into the scope, there is no safety impact, otherwise a positive one, to include also ELA1 aircraft.
Moreover, the entire scope of General Aviation aircraft is not covered by this proposed disposal. General Aviation organizations are also maintaining ELA1 and complex motor-powered aircraft. Since EASA proposed disposals goal is to support operations of "*General Aviation aircraft in Europe by reducing the regulatory burden for the embodiment of simple changes and repairs in certain aircraft*", FNAM and GIPAG suggest to ensure that following aircraft are included in the scope of CS-SC051c:

- ELA1, ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

PROPOSAL
Add all General Aviation aircraft into the scope of CS-SC051c such as:

- ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

Clarify if ELA1 aircraft are included into the scope of CS-SC051c

response

Not accepted

ELA2 includes ELA1. Thus, an SC that is applicable to ELA 2 aircraft is also applicable to ELA1 aircraft.

An applicability beyond ELA2 is not possible since an EASA Form 1 would be necessary for the release of the device. FLARM devices, however, do not come with a Form 1 for the time being.

comment

202 comment by: *FNAM*

ISSUE – 5.Manuals
Instruction of Continued Airworthiness are currently drown up by Design Approval Holders only. Nevertheless, EASA proposed disposals introduce possibilities for maintenance organizations to amend Instruction of Continuing Airworthiness in order to establish maintenance inspections/actions. This is non-consistent with Regulation (EU) N°1321/2014 maintenance organizations privileges. Therefore, FNAM and GIPAG suggest to harmonize EASA proposals in all European requirement by amending Regulation (EU) N°1321/2014 maintenance organizations privileges.
PROPOSAL
Harmonize proposed requirements in all European regulations

response

Not accepted

	Refer to the response to comment #148.

comment	*303* comment by: *European Sailplane Manufacturers* The proposed wording under "Limitations" could be misunderstood. Current wording: ...Any limitations defined by the manufacturer of the FLARM® device are applicable. These must include periodical firmware and database updates. Proposed wording: ...Any limitations defined by the manufacturer of the FLARM® device are applicable. These must include periodical firmware updates and such database updates which are neccessary for the continued function of the device. Rationale: Since introduction, the Flarm decices have ssen firmware updates to improve the traffic awareness functionality of the device. It is indeed important that such updates are made, otherwise such devices cannot any longer communicate with other Flarm devices and the traffic awareness function is not longer there. Additionally, the so called obstacle data base is continously updated and offered on a commercial basis by the Flarm company. This is a very useful tool for those flying in the mountains who need to avoid high-power lines and funicular cables but a large number of sailplanes do not need this feature (as they fly outside the mountains). Therefore wording should be avoided which would require owners to upload any upgrade, even if it not required for the basic function (i.e. the traffic awareness and collision avoidance).
response	Accepted The text has been amended accordingly.

Standard Change CS-SC052bc	p. 33-34

comment	*70* comment by: *Samionics / General Aviation Avionics* "For integrated systems that also provideing voice communications functionality and/or a VOR navigation capability, CS-SC052 may be applied concurrently with **CS-SC001** and/or **CS-SC056**." We can install a GNSS multi function COM/NAV/GPS unit but only exchange DME, ADF, VOR.

We still have requests for DME installations and a DME installation no more difficult than a transponder installation iaw CS-SC002b thus we suggest that the word "exchange" is replaced with "installation" in the 3 ea standard changes below.

CS-SC0054b - **Exchange** of DME
CS-SC0055b - **Exchange** of ADF equipment
CS-SC0056b - **Exchange** of VOR equipment

response

Not accepted

This proposal cannot be accepted. A new installation of such equipment would allow for increased operational credit (e.g. an aircraft certified for VFR operation could become eligible for IFR operation). As stated in CS STAN.20, equipment that is installed as part of an SC cannot be used to eliminate or reduce the existing airworthiness limitations and operational limitations of the aircraft.

comment

87 comment by: *DGAC Deputy Head of aircraft and operations rulemaking department*

DGAC France suggests to modify the second bullet of §5 Manuals as follow : "a limitations section stating the following: 'This equipment is to be used for situational awareness **and in day VFR** only'.

response

Not accepted

EASA considers that the limitation to VFR is sufficient.

comment

188 comment by: *Garmin International*

Subpart B, Standard Change CS-SC052c, Paragraph 1 - Page 33:

The last sentence in Paragraph 1 excludes the GNSS equipment installation from connection to an "ADS-B OUT system", while SC-002c, SC-005a, and SC-006a all allow the interface to a GNSS system meeting the conditions specified. The verbiage is inconsistent with the assumed intent of the Transponder/ADS-B Standard Changes.

We recommend revising the sentence to:

This SC does not cover the connection of the GNSS equipment to any kind of AFCS. This CS may also be used for GNSS installations that support ADS-B Out systems installed in accordance with CS-SC002c, CS-SC005a, or CS-SC006a.

response

Not accepted

There are no qualification criteria for GNSS in CS-SC052c. Refer also to the response to comment #20 for ADS-B OUT.

comment

191 comment by: *Garmin International*

Subpart B, Standard Change CS-SC052c, Paragraph 4 - Page 33 :

The first limitation in Paragraph 4 limits the GNSS equipment use to "situational awareness under VFR only", while CS-SC002c, CS-SC005a, and CS-SC006a all allow the interface to a GNSS system meeting the conditions specified. The verbiage is inconsistent with the assumed intent of the Transponder/ADS-B Standard Changes.

We recommend revising the item to:

The system is to be used for situational awareness or as an ADS-B Out position source under VFR only.

response

Not accepted

Refer to the response to comment #188.

comment

203 comment by: *FNAM*

ISSUE - 2. Applicability/Eligibility
EASA proposed disposals ensure more flexibility for non-pressurized aircraft with MTOM of less than 2721kg.
FNAM and GIPAG wonder why all General Aviation aircraft (other than complex motor-powered, complex motor-powered, ELA2,ELA1 aircraft) are not included in the scope of GNSS equipment installation flexibility. Since aircraft with MTOM of less than 2721kg are included into the scope, there is no safety impact, otherwise a positive one, to include also other General Aviation aircraft.
Moreover, the entire scope of General Aviation aircraft is not covered by this proposed disposal. General Aviation organizations are also maintaining General Aviation aircraft (other than complex motor-powered, complex motor-powered, ELA2,ELA1, pressurized and non-pressurized aircraft). Since EASA proposed disposals goal is to support operations of "*General Aviation aircraft in Europe by reducing the regulatory burden for the embodiment of simple changes and repairs in certain aircraft"*, FNAM and GIPAG suggest to ensure that following aircraft are included in the scope of CS-SC052c:

- ELA1, ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

PROPOSAL
Add all General Aviation aircraft into the scope of CS-SC052c such as:

- ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

Clarify if ELA1 aircraft are included into the scope of CS-SC052c

response	Noted ELA1 is included in ELA2.

comment	*204* comment by: *FNAM* **ISSUE – 4. Limitations** The scope of GNSS equipment installation flexibility is also limited to situational awareness in VFR operations. FNAM and GIPAG fear that this proposed disposal limits the safety value that can bring such a system for all aircraft and operations. GNSS equipment could support and help to have more precision during all types of operations: IFR, etc. Therefore, FNAM and GIPAG suggest to suppress the proposed limitation. **PROPOSAL** Remove the limitation of installing GNSS equipment only on aircraft for VFR operations
response	Not accepted EASA keeps the limitation 'for VFR only'. Additional analysis/considerations to support a net safety benefit approach would be needed to remove this limitation.

comment	*205* comment by: *FNAM* **ISSUE – 5.Manuals** Instruction of Continued Airworthiness are currently drown up by Design Approval Holders only. Nevertheless, EASA proposed disposals introduce possibilities for maintenance organizations to amend Instruction of Continuing Airworthiness in order to establish maintenance inspections/actions. This is non-consistent with Regulation (EU) N°1321/2014 maintenance organizations privileges. Therefore, FNAM and GIPAG suggest to harmonize EASA proposals in all European requirement by amending Regulation (EU) N°1321/2014 maintenance organizations privileges. **PROPOSAL** Harmonize proposed requirements in all European regulations
response	Not accepted Refer to the response to comment #148.

comment	*243* comment by: *DGAC Deputy Head of aircraft and operations rulemaking department* DGAC France recommends to add in §3 the following requirement (in order to cover 23.773(a), in particular for backlit and/or LED display instruments installed on aeroplanes certified for night VFR): - The instrument does not introduce any glare or reflections that could interfere with the pilot's vision. Compliance must be shown in all operations for which certification is requested.
response	Accepted

Refer to the response to comment #242.

Standard Change CS-SC058ab p. 35-36

comment	*19* comment by: *FLARM Technology* Section 1 states that "The installation of a TABS will enable an aircraft to be visible to air navigation service providers and other aircraft […]". This is however partially misleading. First of all, there is no ANSP, to our knowledge, that will show ADS-B Out with SIL/SDA=1. Second, if the transponder is referenced, the aircraft cannot fly in TMZs, so this benefit would be very limited. Furthermore, since "TABS" is mostly thought of as type of ADS-B based on a transponder, it's misleading because this benefit comes from the transponder and not the ADS-B subsystem. This applies similarly to TAS/TCAS aircraft, where the benefit comes from the transponder and not ADS-B. Regarding other aircraft with ADS-B In capability, it is not correct, since DO-317B (which is referenced from ETSO-C199, from where the text is copied, via ETSO-C195b) requires higher quality indicators than SIL/SDA=1. The aircraft will however be seen by FLARM, but a TABS installation for this purpose should not be promoted, since it will not give both aircraft synchronous collision warnings (and also the TABS aircraft would not see the FLARM aircraft).
response	Partially accepted As the comments and proposals that were received during the public consultation require further assessments by EASA, in particular on the supporting technical reference (ETSO C199), it has been decided to defer the publication of CS-SC058b. The SC is therefore restored to its current version, which is CS-SC058a. Refer also to the response to comment #20.

comment	*20* comment by: *FLARM Technology* Section 1 states that the SC does not qualify TABS equipment, which is not authorized according to ETSO-C112, as compliant with transponder requirements. A "TABS installation, in which the Class A TABS is not authorised according to ETSO-C112(), is not sufficient to permit the pilot to fly the aircraft into transponder mandatory zones". However, this must apply to all types of TABS installations, also if the transponder is ETSO-C112 certified. That the transponder is certified is not sufficient to fly in TMZ. The installation needs to be approved as well. Compare with CS-SC002c, which already requires the transponder to be ETSO-C112 certified (via the CS ACNS.D.ELS.010 requirement) but correctly still does not authorize flying in TMZs.
response	Partially accepted CS-SC005a and CS-SC006a have been merged. Conditions to transmit ADS-B OUT data have been gathered into several configurations. The current CS-SC058a has

	been kept unchanged. TABS Class B has been considered a specific ADS-B OUT configuration. ETSO-C199 needs to be revised in order to properly address all the comments received for the proposed CS-SC058b. Refer also to the response to comment #19.
comment	*21* comment by: *FLARM Technology* EU regulations require aircraft operating IFR/GAT to carry and operate a certified Mode-S transponder (and fully approved installation). Applicability/Eligibility (Section 2) should therefore exclude aircraft certified for IFR. Alternatively, limitations, warnings and placards should be added with "VFR only". The pilot operating the aircraft could otherwise be made to believe that the aircraft can be operated IFR, since he does not know the airworthiness requirements under which the transponder was installed.
response	Partially accepted Refer to the response to comment #20.
comment	*22* comment by: *FLARM Technology* Limitations, warnings and placards should be added with "Not authorized for transponder mandatory zones". The pilot operating the aircraft could otherwise be made to believe that the aircraft can be operated in TMZs, since he does not know the airworthiness requirements under which the transponder was installed.
response	Partially accepted Refer to the response to comment #20.
comment	*23* comment by: *FLARM Technology* Section 3 states that the equipment must be authorized according to ETSO-C199. However, there is no requirement that the installation requirements in ETSO-C199 must be followed (and the applicable requirements are not stated in the CS instead). For example, this should include that SDA/SIL must be set to 1 (maximum).
response	Partially accepted Refer to the response to comment #20.
comment	*29* comment by: *Luftfahrt-Bundesamt* FAA - the inventors of TABS – limit the usage of such equipment to gliders, balloons and aircraft without electrical system. EASA should follow that approach. Otherwise the number of installations could become that large that the above mentioned frequency congestion problems will also come up from here. Note: TABS's RF output power may be as high as for a regular XPDR according to CS ACNS.D.ELS.010 (b)(2) (min. 70W). Perhaps a further limit for the RF output power would be advisable.

response | Partially accepted

Refer to response to comment #20.

comment | *85* comment by: *DGAC Deputy Head of aircraft and operations rulemaking department*

CS.STAN.80 provides a new defintiion of TABS by including Class A and Class B TABS. CS-SC058b is modified as follow :

- §1 Purpose : "This SC does not qualify the TABS equipment installation, **in which the Class A TABS is not authorised according to ETSO-C112(), as compliant with** the transponder or ADS-B requirements defined in Commission Implementing Regulations (EU) Nos 1206/2011 and (EU) No 1207/2011. Therefore, this TABS installation, **in which the Class A TABS is not authorised according to ETSO-C112(),** is not sufficient to permit the pilot to fly the aircraft into transponder mandatory zones (TMZs)."
- §4 Limitations : "If a Mode A/C/S transponder system is already installed in the aircraft, **a Class A** TABS equipment cannot be installed using CS-STAN."

DGAC France understands that this kind of limitations is only applicable to Class A TABS. About the Class B TABS, we understand that they do not apply. This is a major change from the previous version of the CS-SC058 which is not supported by any impact assessment to cover the alleviations provided to the Class B TABS and to demonstrate that the proposed modifications are compatible with the current implementating rules regarding Interoperability and Surveillance.

In addition, if the limitations do not apply for Class B TABS, the pilot of an aircraft equipped with Class B TABS is authorised to fly into TMZ. In this case it is not consistent with the following sentence of §1 Purpose : "TABS equipment is intended for use as optional equipment on aircraft that are not required to carry a transponder or automatic dependent surveillance - broadcast (ADS-B) equipment." because in TMZ transponder is required.

Therefore, DGAC France suggests to clarify that this CS-SC058 is only applicable to Class A TABS and so Class B TABS installation is not covered and must be EASA approved.

response | Partially accepted

Refer to the response to comment #20.

comment | *189* comment by: *Garmin International*

Subpart B, Standard Change CS-SC058b, Paragraph 1 - Page 35:

Paragraph 1 lacks clarity due to referencing “TABS equipment” and “Class A TABS equipment” when it seems the intent is to address a “Class A TABS device” (ref. CS STAN.80 definition for Class A TABS).

It is suggested to revise the first sentence to:

This SC is for the installation of traffic awareness beacon systems (TABS) with an ETSO-C199() Class A TABS device.

The second sentence should be revised to:

A Class A TABS device is intended…

And the last two sentences should be revised to:

This SC does not qualify the TABS equipment installation, in which the Class A TABS device is not authorised according to ETSO-C112(), as compliant with the transponder or ADS-B requirements defined in European Commission Implementing Regulations (EU) Nos 1206/2011 and (EU) No 1207/2011. Therefore, this TABS installation, in which the Class A TABS device is not authorized according to ETSO-C112(), is not sufficient to permit the pilot to fly the aircraft into transponder mandatory zones (TMZs).

response

Partially accepted

Refer to the response to comment #20.

comment

190 comment by: *Garmin International*

Subpart B, Standard Change CS-SC058b, Paragraph 4 - Page 36:

The third limitation in Paragraph 4 lacks clarity due to referencing “Class A TABS equipment” instead of “Class A TABS device” (ref. CS STAN.80 definition for Class A TABS). It is suggested to replace “Class A TABS equipment” with “Class A TABS device”.

response

Partially accepted

Refer to the response to comment #20.

comment

206 comment by: *FNAM*

ISSUE - 2. Applicability/Eligibility
EASA proposed disposals ensure more flexibility for other than complex motor-powered aircraft, for rotorcraft that are not complex motor-powered aircraft and to any ELA2 aircraft.
FNAM and GIPAG are not certain to understand the scope of this proposal and suggest EASA to clarify that ELA1 aircraft are included in the scope of traffic awareness beacon system installation flexibility. Since ELA2 are included into the scope, there is no safety impact, otherwise a positive one, to include also ELA1 aircraft.
Moreover, the entire scope of General Aviation aircraft is not covered by this proposed disposal. General Aviation organizations are also maintaining ELA1 and complex motor-powered aircraft. Since EASA proposed disposals goal is to support

operations of "*General Aviation aircraft in Europe by reducing the regulatory burden for the embodiment of simple changes and repairs in certain aircraft*", FNAM and GIPAG suggest to ensure that following aircraft are included in the scope of CS-SC058b:

- ELA1, ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

PROPOSAL
Add all General Aviation aircraft into the scope of CS-SC058b such as:

- ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

Clarify if ELA1 aircraft are included into the scope of CS-SC058b

response

Partially accepted

Refer to the response to comment #20.

comment

207 comment by: *FNAM*

ISSUE – 5.Manuals
Instruction of Continued Airworthiness are currently drown up by Design Approval Holders only. Nevertheless, EASA proposed disposals introduce possibilities for maintenance organizations to amend Instruction of Continuing Airworthiness in order to establish maintenance inspections/actions. This is non-consistent with Regulation (EU) N°1321/2014 maintenance organizations privileges. Therefore, FNAM and GIPAG suggest to harmonize EASA proposals in all European requirement by amending Regulation (EU) N°1321/2014 maintenance organizations privileges.
PROPOSAL
Harmonize proposed requirements in all European regulations

response

Not accepted

Refer to the response to comments #148.

comment

244 comment by: *DGAC Deputy Head of aircraft and operations rulemaking department*

DGAC France recommends to add in §3 the following requirement (in order to cover 23.773(a), in particular for backlit and/or LED display instruments installed on aeroplanes certified for night VFR):

	- The instrument does not introduce any glare or reflections that could interfere with the pilot's vision. Compliance must be shown in all operations for which certification is requested.
response	Partially accepted The proposed CS-SC058b has been withdrawn, since the concept of operations for TABS is not yet mature. TABS class B has been included as a specific ADS-B OUT configuration. Refer also to the responses to comments #19 and #20.

comment	*252* comment by: *EUROCONTROL* "TABS equipment ~~are~~is intended for use as ~~voluntary equipage~~ optional equipment on aircraft that are not required to carry a transponder or automatic dependent surveillance - broadcast (ADS-B) equipment" Comment: Suggest to delete "on aircraft that are not required to carry a transponder or automatic dependent surveillance - broadcast (ADS-B) equipment" or at least remove the part "required to carry transponder" since this may indeed be configuration 2.
response	Partially accepted Refer to the response to comment #20.

comment	*253* comment by: *EUROCONTROL* — Class A TABS consists of a transponder, altitude source and ADS-B OUT functionality; The transponder and ADS-B OUT functionality must be authorised to either ETSO-C199 Class A or ETSO-C112e and ETSO-C166b or later revision as applicable Comment: Minimum version? e (as per ETSO-C199)?
response	Partially accepted Refer to the response to comment #20.

comment	*254* comment by: *EUROCONTROL* The GNSS position source must provide a GPS-only solution for use by the TABS ADS-B function; Comment: Suggest to Delete this. It is currently covered by ETSOs – however future evolutions of ETSOs may include non-GPS.

response | Partially accepted

Refer to the response to comment #20.

comment | *255* comment by: *EUROCONTROL*

Text to be added before the figure: "TABS include three acceptable configurations as depicted in the figure"

response | Partially accepted

Refer to the response to comment #20.

comment | *257* comment by: *EUROCONTROL*

"NOTE 1: Ensure device is configured as a TABS, for example; bits 53-54 should be set in the Type Code 31 message per A1.2.5.11 of the TABS TSO, SIL and SDA values should correctly reflect the capability of the TABS"
Comments:
TBD if this is too detailed for CS-STAN

response | Partially accepted

Refer to the response to comment #20.

comment | *258* comment by: *EUROCONTROL*

"This SC does not qualify the TABS equipment installation in which the Class A TABS is not authorised according to ETSO-C112e, as compliant with ~~to meet~~ the transponder or ADS-B requirements defined in ~~European~~ Commission Implementing Regulations (EU) Nos 1206/2011 and (EU) No 1207/2011~~,~~. ~~t~~Therefore, this TABS installation, in which the Class A TABS is not authorised according to ETSO-C112e, is not sufficient to permit the pilot to fly the aircraft into transponder mandatory zones (TMZs). Additional requirements may apply~~,~~ refer to CS-SC002b or a later amendment"

Comment:
"Is the intent here to prevent installations of transponders which should be installed per SC002?

This text is complicated and not very clear. Is the intent covered by the sentence above. If so, can this text be removed?"

response | Partially accepted

Refer to the response to comment #20.

comment | *259* comment by: *EUROCONTROL*

Suggested text"NOTE 2: A ETSO-C112e / 166b transponder paired with a ETSO-C129a or C145c or C146c or C196b GPS receiver is not a TABS configuration refer to SC005 (ref. to ADS-B merge of 005 and 006)."

response

Partially accepted

Refer to the response to comment #20.

comment

260 comment by: *EUROCONTROL*

To be deleted: ~~This SC does not qualify the TABS equipment installation, in which the Class A TABS is not authorised according to ETSO-C112(), as compliant with to meet the transponder or ADS-B requirements defined in European Commission Implementing Regulations (EU) Nos 1206/2011 and (EU) No 1207/2011,. tTherefore, this TABS installation, in which the Class A TABS is not authorised according to ETSO-C112(), is not sufficient to permit the pilot to fly the aircraft into transponder mandatory zones (TMZs). Additional requirements may apply;, refer to CS-SC002b or a later amendment.~~

and replaced by:
"This SC does not cover the installation of external antennas (see SC004, which may be applied concurrently)."

response

Partially accepted

Refer to the response to comment #20.

comment

261 comment by: *EUROCONTROL*

Suggested text:
"ETSO-C112e and ETSO-C166b compliant TABS devices must be capable of being configured for use with GNSS position sources that comply with ETSO-C199 Class B where applicable (i.e. configuration 2)"

response

Partially accepted

Refer to the response to comment #20.

comment

262 comment by: *EUROCONTROL*

Proposed text:
Additionally, the following conditions apply~~ies~~:
¾ This SC does not include the installation of GNSS antennas (see CS-SC004, which may be applied concurrently).
¾ The GNSS antenna must be installed with free line of sight to the sky (including all directions above the horizon) in normal flight conditions.[JM1]

— Ensure that the system is configured as TABS and that the correctness of all transmitted parameters are verified during post-installation functional test, especially verify that;

— For all configurations SDA shall be set to 1 and bits 53-54 should be set in the Type Code 31 message.
— For configuration 1 and 2 NIC shall not exceed 6 and SIL shall be set to 1.
— When position is not valid NIC shall be set to 0

Comment: Proposal to be reviewed.

response

Partially accepted

Refer to the response to comment #20.

comment

263 comment by: *EUROCONTROL*

Proposed text:
— If ~~case~~ a Mode A/C/S ~~T~~transponder system is already installed in the aircraft, ~~the~~ an additional Class A TABS equipment cannot be installed using CS-STAN. However, the existing transponder can be used as a Class A TABS, when connected to a Class B device position source (i.e. configuration 2).

response

Partially accepted

Refer to the response to comment #20.

comment

298 comment by: *NATS*

Discussion in SC058 ignores the discussion of Class B TABS devices. This is an omission that should be addressed and possibly provides a means of reconciling SC005 and SC006. TABS Class B devices can provide the low quality GNSS data that SC006 requires to mitigate the hazard that fully quantified GNSS data from a CS-STAN aircraft would appear to present. But this would support the principle of SC005, of providing ADS-B that reflects the true quality of the information and can be used.

SC058 is incomplete and a complete version taking into account Class B TABS would appear to provide a route to the reconciliation of SC005 and SC006

Suggested resolution - Reflect that the use of Class B TABS within the SCs could support the needs of SC005 without the limitations of SC006.

response

Accepted

Refer to the responses to comments #20 and #244.

comment

313 comment by: *EUROCONTROL*

Attachment #3

Please refer to the attached file for an inline version of the comments and text proposals provided.

response

Partially accepted

Refer to the response to comment #20.

Standard Change CS-SC084a p. 37

comment	*58* comment by: *CAA CZ* **CS-SC084a — Repainting of composite aircraft structures (new)** **Paragraph 3.:** - Add to the first dash following: Pay particular attention to avoid heat damage during removal. - Add another dash with following: This SC excludes painting of other outer surfaces like e.g. antennas. (For antennas see FAA Advisory Circular AC 43-13-2B, Chapter 3, Section 312.) **Paragraph 4.:** Alter/improve wording as appropriate: Colour of a new paint should not be changed if the new colour is not allowed by the aircraft manufacturer. There are cases where manufacturer did not explicitly limit the colour (e.g. limitation for the white colour) since this change without an approval was not even foreseen.
response	Partially accepted The first bullet has been included in the amended SC. The limitation to outer surfaces such as antennas is not needed, as the scope of this SC is already limited to composite aircraft structures. Paragraph 4 has been reworded to address the case of an absence of manufacturer instructions regarding the acceptable colours.

comment	*73* comment by: *CAA-NL* There is a remarkable difference between the proposed CS-SC084a and CS-SC085a: CS-SC084a requires (under 3. Acceptable methods, techniques and practices) that the paint manufacturer's instructions and safety information shall be observed. CS-SC085a in the corresponding paragraph requires that used materials be approved to be used on the given aircraft, or that the use of alternative materials be approved in accordance with Part 21, or that the materials' manufacturers declare equivalence. Proposal: to also include in CS-SC084a the requirement that used materials be approved to be used on the given aircraft, and offering the alternatives as now in the proposed CS-SC085a.
response	Noted The main difference between the two mentioned SCs is the fact that CS-SC084a addresses the surface painting, while CS-SC085a only covers the decorations that may be applied on top of it.

comment	*88* comment by: *DGAC Deputy Head of aircraft and operations rulemaking department*

	DGAC France suggest to modify the last bullet of §3 as follow : "Respect/replicate any mandatory placards or markings **as defined by AFM or ICAs**"
response	Accepted The SC has been amended accordingly.

comment	*208* comment by: *FNAM* **AGREEMENT** FNAM and GIPAG thank for adding this new possibility
response	Noted

comment	*209* comment by: *FNAM* **ISSUE - 2. Applicability/Eligibility** EASA proposed disposals ensure more flexibility for ELA2 aircraft with composite structures. FNAM and GIPAG are not certain to understand the scope of this proposal and suggest EASA to clarify that ELA1 aircraft are included in the scope of composite aircraft structures repainting flexibility Since ELA2 are included into the scope, there is no safety impact, otherwise a positive one, to include also ELA1 aircraft. Moreover, the entire scope of General Aviation aircraft is not covered by this proposed disposal. General Aviation organizations are also maintaining ELA1 and complex motor-powered aircraft. Since EASA proposed disposals goal is to support operations of "*General Aviation aircraft in Europe by reducing the regulatory burden for the embodiment of simple changes and repairs in certain aircraft"*, FNAM and GIPAG suggest to ensure that following aircraft are included in the scope of CS-SC084a: • ELA1, ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT • All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO **PROPOSAL** Add all General Aviation aircraft into the scope of CS-SC084a such as: • ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT • All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO Clarify if ELA1 aircraft are included into the scope of CS-SC084a
response	Noted

	ELA1 aircraft are included in ELA2.
comment	*210* comment by: *FNAM* **ISSUE – 5.Manuals** Instruction of Continued Airworthiness are currently drown up by Design Approval Holders only. Nevertheless, EASA proposed disposals introduce possibilities for maintenance organizations to amend Instruction of Continuing Airworthiness in order to establish maintenance inspections/actions. This is non-consistent with Regulation (EU) N°1321/2014 maintenance organizations privileges. Therefore, FNAM and GIPAG suggest to harmonize EASA proposals in all European requirement by amending Regulation (EU) N°1321/2014 maintenance organizations privileges. **PROPOSAL** Harmonize proposed requirements in all European regulations
response	Not accepted Refer to the response to comment #148.

Standard Change CS-SC085a p. 38-40

comment	*40* comment by: *European Powered Flying Union* CS-SC085a page 38/65 3. Acceptable methods, techniques, and practices (c)(2) Fuel filler openings Please take a look at your proposed texts , in our view it is not entirely correct, it should be re-worded, especially alinea 2. Rationale: There is an increasing number of aircraft in service equipped with reciprocating engines consuming "Jet-Fuel" (e.g. DA-42, but many others as well). The fact that different "Jet Fuels" exist is probably not important within this operational segment, should, however not be forgotten. Question: Do aircraft within the applicability/elligibility sector exist that may be re-fuelled by making use of a pressure fuelling system?
response	Accepted The SC has been amended to take into account the type of fuel that is allowed for each aircraft. The applicability of this SC may also cover aircraft with pressurised refuelling systems.

comment	*59* comment by: *CAA CZ* **Paragraph 3.:** Add following to item (a): (e.g. primer filler, …. of maximum thickness of paint/sticker). For IFR category aircraft critical areas of aircraft surface (metal or composite) are tested against direct effects of the lightning with given maximum thickness of paint/sticker in order to minimize extent of lightning strikes thermal damage.
response	Not accepted Manufacturers' limitations are already included in this SC, so this addresses the concern expressed by the commentator.

comment	*74* comment by: *CAA-NL* The list of attention points in CS-SC085a section 3(c) appears to be incomplete: for instance static ports are not mentioned. Proposal: review again this list for completeness.
response	Accepted A specific note has been added to prevent static ports, drainage holes, fuel venting and other openings from being covered by stickers/placards.

comment	*109* comment by: *Europe Air Sports* Exchange of an aircraft livery paint and decorative sticker scheme NPA text: 3. (c) " Design of the external livery: when defining the design of the external livery, the following must be considered: ..." EAS Comment: Add : "No obstructions of the aircraft's sensors (e.g. static port) or emitters (e.g. navigation light) or the flight crew's field of view are allowed". Rationale: A precautionary addition with the advent of new "whole aircraft" self-adhesive coatings and their installers in mind.
response	Accepted Refer to the response to comment #74.

comment	*211* comment by: *FNAM* **AGREEMENT** FNAM and GIPAG thank for adding this new possibility

response | Noted

comment | *212* comment by: *FNAM*

ISSUE - 2. Applicability/Eligibility
EASA proposed disposals ensure more flexibility for other than complex motor-powered aircraft, for rotorcraft that are not complex motor-powered aircraft and to any ELA2 aircraft.
FNAM and GIPAG are not certain to understand the scope of this proposal and suggest EASA to clarify that ELA1 aircraft are included in the scope of aircraft livery paint and decorative sticker scheme exchange flexibility. Since ELA2 are included into the scope, there is no safety impact, otherwise a positive one, to include also ELA1 aircraft.
Moreover, the entire scope of General Aviation aircraft is not covered by this proposed disposal. General Aviation organizations are also maintaining ELA1 and complex motor-powered aircraft. Since EASA proposed disposals goal is to support operations of "*General Aviation aircraft in Europe by reducing the regulatory burden for the embodiment of simple changes and repairs in certain aircraft*", FNAM and GIPAG suggest to ensure that following aircraft are included in the scope of CS-SC085a:

- ELA1, ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

PROPOSAL
Add all General Aviation aircraft into the scope of CS-SC085a such as:

- ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

Clarify if ELA1 aircraft are included into the scope of CS-SC085a

response | Noted

ELA1 aircraft are included in ELA2.

comment | *213* comment by: *FNAM*

ISSUE – 3. Acceptable methods, techniques and practices
EASA proposed disposals ensure that alternate materials can be used if original materials for painting are obsolete or do not follow current environmental protection requirements. These solutions are :
- To use alternate materials approved in accordance with Part 21; or

	- Materials which have been declared by the materials' manufacturer to be equivalents to the materials listed in ICAs. FNAM and GIPAG thank for these new possibilities but fear that these disposals will not ensure enough flexibility for the scope of General Aviation organizations. Since most of General Aviation aircraft have limited ICAs or have aircraft with no active manufacturer, maintenance organizations will have to obtain approval for the painting material according to Part-21. FNAM and GIPAG fear that this additional approval will be a supplemental administrative burden for SME in General Aviation. Since painting professionals for aircraft are highly qualified, FNAM and GIPAG suggest to ensure the safety of the repainting and the material used by demonstrating and recording the qualification and recent experience of professionals. **PROPOSAL** Add the possibility to demonstrate the safety for the change of aircraft livery thanks to personal qualification and recent experience
response	Not accepted The provisions of point 3(a) are considered necessary to mitigate the risk for safety that is related to the selection of the material to be used. At this stage, relaxing the requirements of this point is not deemed necessary by EASA.

comment	*214* comment by: *FNAM* **ISSUE – 5.Manuals** Instruction of Continued Airworthiness are currently drown up by Design Approval Holders only. Nevertheless, EASA proposed disposals introduce possibilities for maintenance organizations to amend Instruction of Continuing Airworthiness in order to establish maintenance inspections/actions. This is non-consistent with Regulation (EU) N°1321/2014 maintenance organizations privileges. Therefore, FNAM and GIPAG suggest to harmonize EASA proposals in all European requirement by amending Regulation (EU) N°1321/2014 maintenance organizations privileges. **PROPOSAL** Harmonize proposed requirements in all European regulations
response	Not accepted Refer to the response to comment #148.

comment	*278* comment by: *Martin Ryff* Standard Change CS-SC085a EXCHANGE OF AN AIRCRAFT LIVERY PAINT AND DECORATIVE STICKER SCHEME 3. Acceptable methods, techniques, and practices (2) Fuel filler openings must be marked at or near the filler cover with: — for reciprocating engine-powered aircraft: add: Jet Fuel (a number of reciprocation engien-powered aircraft use Jet Fuel.
response	Accepted

	Refer to the response to comment #40.

comment	*304* comment by: *Airbus Helicopters* Paragraph No: 3. Acceptable methods, techniques, and practices **Comment**: Additional precautions regarding the potential consequences on the installation on the helicopter safety need to be considered **Rationale**: The following consideration is normally taken into account when new painting is applied **Proposed text**: Add following additional condition; **- The thickness of the painting of the external livery should remain within the maximum allowable for compliance with the Lightning certification requirement of the aircraft**
response	Not accepted Refer to the response to comment #59.

comment	*317* comment by: *Diamond* CS-SC085a, 3. (c) (2) may be updated to a newer accepted wording under CS 23 Amdt. 5 (e. g. from ASTM Standard F3117) and give up the old direct assumption that reciprocating engines are AVGAS and Turbines are JET-Fuel: Wording from F3117: 13.9.3.1 Fuel filler openings must be marked at or near the filler cover with: (1) The permissible fuel designations, or references to the Airplane Flight Manual (AFM) for permissible fuel designations.
response	Accepted The SC has been amended to consider any kind of fuel. See also the response to comment #40.

Standard Change CS-SC086a	p. 41-42

comment	*25* comment by: *Aerostar International, Inc.* Note- comments in red 3. Acceptable related to the methods, techniques, and practices The following considerations apply: — The maximum take-off weight of the modified balloon shall not be greater than the original one. Asingle balloon model may have different maximum takeoff weights which may be related to the maximum weight that the basket has been tested and approved to or the performance/output of the burner. Likewise, the bottom end being combined with that envelope must not have a greater takeoff weight than it was tested and approved for use.

— The minimum landing mass of the modified balloon must be greater than or equal to the approved minimum landing mass of the original balloon. A good estimate for the minimum landing mass is/ Aerostar balloons have never had a minimum landing mass established.
The performance of the burner must be adequate for the size of the envelope. This is extremely objective. Just as discussed for the max takeoff weight, the output of the burner has been used to determine what the maximum takeoff weight. I am not sure how you depend on a pilot to make the determination as to burner output that is appropriate.

4. Limitations
— This SC is limited to configurations that do not require rotation valves. None of our balloons "require" rotation vents. So if they have rotators, does this still apply?

5. Manuals
The flight manual of the modified balloon must be supplemented for the bottom-end, and it should contain, at least, the following:
— the emergency and normal operating procedures; What precedence exists between the two sets of procedures that are being joined together; the original aircraft or the "bottom end" procedures and it is the pilot/owner that is making that decision?

response

Partially accepted

Further guidance regarding maximum take-off weight, minimum landing mass, burner performance and turning vents has been added.

Guidance for the user on how to create the AFMS has been added too.

comment *41* comment by: *European Powered Flying Union*

CS-SC086a
page 44/65
6. Release to service

We support this provision.

Rationale:
It helps the ballooning community, our sisters and brothers in the airspace, to keep costs down, this within reasonable tolerances and limitations.

response

Noted

comment *60* comment by: *CAA CZ*

CS-SC086a — Exchange of a balloon 'bottom-end' (new)
General comments:

	- Change of bottom-end is a major change in view of PART 21 and after our consideration it will not be easy to perform it as a standard change without proprietary data. - In line of the above mentioned we propose to allow only such combinations where the bottom-end from manufacturer A has in its approved combinations **higher limitation for descent rate** and **free flight take-off wind speed (surface wind)** than there are these limitations given for the particular envelope from manufacturer B, as referenced in applicable flight manuals. **Explanation:** maximum vertical velocity attained during uncontrolled descend determines basket resistance to distortion or failure. - In general it is not straightforward obvious who will be responsible for CAW of final a/c - envelope TC holder, after this kind of change carried out by the owner. **Paragraph 3.:** Word "adequate" in the text "The performance of the burner must be adequate for …" could be kind of confusing. We propose to add following statement: The burner must comply with the power/number of units required by the envelope manufacturer.
response	Partially accepted AMC 31HB.27(d) specifies the EASA guidance for the drop test to show the robustness of the basket. The guidance is independent of the cold descent speed and the free flight take-off wind speed. Further guidance regarding the performance of the burner has been added. It is, however, to be noted that only a few manufacturers actually specify the power/number of units of the burner. The CAW is the responsibility of the owner.

comment	*94* comment by: *AESA (NAA Spain)* 1. Purpose The TCDS and the AFM normally include instructions related with this subject. does it mean that changing only the burner (as an example) is out of the scope of this CS and it is not a modification???
response	Not accepted It is to be noted that the scope of CS-SC086a does not affect already approved configurations as defined by the TCDS. Changing only the burner is outside the scope of this SC.

comment	*95* comment by: *AESA (NAA Spain)* 2. Applicability/Eligibility Why not ELA2 and Why not commercial? if it is commercial or ELA2, are not there restrictions to possible combinations?
response	Noted

	EASA has decided to limit the eligibility of this SC to ELA1 balloons and non-commercial operations, as currently there is no risk-assessment available that supports an extension of the applicability.

comment	*96* comment by: *AESA (NAA Spain)* 3. Acceptable methods, techniques and practices Normally the most of ELA1 HAB has not min. landing mass limitation, this affect to sizes above 105.000 ft3 why is this consideration made? the mlm (if applicable) must be assured when loading the balloon and it has nothing to do with the components, except for the calculation itself. The mlm is related with the envelope's volume. ie. If the variation is due to the replacement of a double burner with a single burner, the mass used for the calculations will be less than the mass with two burnesrs, but the minimum mass for landing does not change since the volume of the envelope is the same.
response	Noted EASA has chosen to include the minimum landing mass as a criterion to define the possible configurations. EASA is aware that the minimum landing mass is not critical for balloons with a volume of less than 3 000 m^3, and that it is not always defined by the TC holder. The guidance has been reworded to address these circumstances.

comment	*97* comment by: *AESA (NAA Spain)* 3. Acceptable methods, techniques, and practices — The number of attachment points for the basket wires in the original configuration must be the same as in the new configuration after the exchange and the wires' lenght? and the rods' thickness and length? can be admissible any kind of extension or shorten?
response	Noted The guidance that is provided on the geometry of the burner frame is sufficient, and the lengths of the flying wires is constrained by the tolerances that are defined for the burner frame. Further guidance on the design of the burner is not deemed necessary, as all manufacturers fulfil the requirements of CS-31 or Part 31. Changes to the flying wires, e.g. extending or shortening them, is outside the scope of this SC. A limitation has been added.

comment	*98* comment by: *AESA (NAA Spain)* 3. Acceptable methods, techniques, and practices how must be considered the exclusion this point of those bottom-ends composed of: burner manufactured by A (eg.: Cameron Balloons)

	burner frame manufactured by B basket manufactured by B (eg.:Kubiceck) Cylinders manufactured by C (eg.: Ultramagic)
response	Accepted The wording under 1. Purpose has been adjusted to exclude mixed bottom ends.

comment	*99* comment by: *AESA (NAA Spain)* 4. Limitations This could mean that a basket from manufacturer A with one compartment, can not be attached to an evelope manufactured by manufacturer B although the compatibility is setted in the AFM. the AFM's have supplements including "other manufacturers equipment" setting the compatibilities. This capability of combination it is referred in the respective TCDS
response	Noted Please note that the scope of CS-SC086a does not affect already approved configurations as defined by the TCDS. The limitation on turning vents has been removed, and further guidance on baskets with a length to width ratio of greater than 1 to 1.3 has been added.

Standard Change CS-SC105a p. 43-45

comment	*1* comment by: *John SCHWARZ* Proposal to add the following text at the end of paragraph 3. "Acceptable methods, techniques, and practices" - **It shall be verified, that the installation does not interfere with emergency egress** Justification: The proposal is especially relevant for gliders, where canopy jettison and bail-out could be impaired by additional installations in the cockpit. Examples (for gliders): Electrical cables routed from the fuselage to equipment installed in the canopy should not interfere with canopy jettison. Equipment installed on the cockpit sidewall above the occupants bodies should not interfere with emergency bail-out. The proposal is written with gliders in mind, but it will not hurt to make the verification for other categories as well.
response	Accepted The following text has been added:

'As part of applying this SC, the installer shall define and record the locations where the mounting systems can be installed on the individual aircraft, ensuring that the installation does not impede the rapid evacuation of the occupants.'

comment *42* comment by: *European Powered Flying Union*

CS-SC105a
page 43/65
2. Applicability/Elligibility

We propose to include "CS-23 Level 1 and Level 2" aircraft.

Rationale:
They are not so different from "ELA2" machines, the proposed installation conditions would in our opinion fit perfectly.
Installation of mounting systems to hold equipment

3. Acceptable methods, techniques, and practices

As regards suction mounts we propose to classify these constructions as "suitable for the release to service of the aircraft by the Pilot-owner".

Rationale:
Suction mounts are light, quickly installed, and easy to handle, no srews or bolts are required, the structure of the aircraft remains untouched.
A release to service of the aircraft by the Pilot-owner keeps "time on ground" as well as costs down, any such measure allows for more flying, thus increasing safety indirectly.

response Not accepted

The applicability of SC105a is consistent with the provisions of CS-STAN.10 (Applicability) and 21.A.90B. In addition, this SC is limited to ELA2 (less than 2 000 kg). If it is supported by experience that is accrued in the future, the applicability might be extended up to the limits defined by 21.A.90B.

In addition, it is to be noted that many aircraft that fall within the CS-23 Level 1 and Level 2 categories and that carry up to 6 pax will also fall within ELA2.

comment *68* comment by: *Samionics / General Aviation Avionics*

"**Total** unit **weight** does not **exceed** 300grams."
"The **maximum mass** of the unit shall not exceed 300 g."

Use of diferent terms may cause confusion.

"'**unit**' means the 'equipment' plus the 'mounting system'."

Why not just use simplified English? Something like:

	The total combined weight of the mounting system and the attached device may not exceed 300 grams 300gr limitation makes this CS less usefull as an Ipad Mini weighs just over 300grams unit only. The standard version is about 480grams. A total combined weight mounting system and attached device, 600-700 grams would be more realistic. The drag load test should be applied directly to the mounting system and not to the attached device. A device that can easily removed from the pilots seat both physically and electrically would be concidered a portable device and stowed away during emergency procedures (treated as "baggage") and should not be part of the SC. Any notes to suction mounts should be removed as these should be treated as portable device/baggage. Everybody uses Ipad's today including suction mounts, all pilots have their own set of tablets and mounting devices. This SC should only be applicable for mounting systems that are physically attached to the aircraft requiring tools for the removal of the mounting system. We also noted that the load factors are different compared to CS.23.561 or even the older CAR 3 § 3.386. Applicability - ELA2 is way to restricting. We are discussing a simple mounting system installation not a hi tech avionics installation so ee suggest changing this to: "Aeroplanes not being complex motor-powered aircraft with a maximum cruising speed in ISA conditions below 250 kts, rotorcraft not being complex motor-powered aircraft and any ELA2 aircraft."
response	Partially accepted There is no use of different terms, as ‘unit’ is defined in the SC105a. The only confusion could come from the weight and mass of the unit, as the former refers to the force and the second is self-explanatory; however, the amount is always expressed in the same terms, i.e. 300 grams, and therefore there is no possible confusion. Nonetheless, the wording has been updated to only use the term ‘weight’. The proposal to extend the applicability up to 700 grams might be considered for future revisions of CS-STAN. However, EASA finds that 300 grams is an initial acceptable value for an installation to meet the CS-STAN objectives. The installation of heavier equipment should be addressed through the certification procedures given in 21.A.90A. It is to be noted that heavier equipment is also generally larger, and this may have an impact on other areas of concern. The load factors are different from those of CS 23.561, and are found to be adequate for the purpose of this SC.

	The applicability of SC105a is consistent with the provisions of CS-STAN.10 (Applicability) and 21.A.90B, plus an additional limitation to ELA2 (less than 2 000 kg).
comment	*110* comment by: *Europe Air Sports* Installation of mounting systems to hold equipment NPA text: 2. Applicability/Eligibility "This SC is applicable to ELA2 aeroplanes." EAS Comments: We propose to include "CS-23 Level 1 and Level 2" aircraft. Rationale: They are not so different from "ELA2" machines, the proposed installation conditions would in our opinion fit perfectly.
response	Not accepted Refer to the response to comment #42.
comment	*111* comment by: *Europe Air Sports* Installation of mounting systems to hold equipment NPA text: 3. Acceptable methods, techniques, and practices EAS Comment: As regards suction mounts we propose to classify these constructions as "suitable for the release to service of the aircraft by the Pilot-owner". Rationale: Suction mounts are light, quickly installed, and easy to handle, no srews or bolts are required, the structure of the aircraft remains untouched. A release to service of the aircraft by the Pilot-owner keeps "time on ground" as well as costs down, any such measure allows for more flying, thus increasing safety indirectly.
response	Partially accepted SC105a requires an amendment of the AFM to reference the instructions for the operation and the weight of the mounting system, as required. At the same time, CS-STAN.60 explains that the AFM supplement is considered to be part of the SC, and, therefore, it requires no specific approval.

	Thus, once the installation has been released to service by the maintenance organisation, the pilot-owner only needs to follow the AFM/AFMS that records the installation. An explanatory note has been added in Chapter 6, Release to Service.

comment	*215* comment by: *FNAM* **AGREEMENT** FNAM and GIPAG thank for adding this new possibility
response	Noted

comment	*216* comment by: *FNAM* **ISSUE - 2. Applicability/Eligibility** EASA proposed disposals ensure more flexibility for ELA2 aircraft. FNAM and GIPAG are not certain to understand the scope of this proposal and suggest EASA to clarify that ELA1 aircraft are included in the scope of mounting system to hold equipment installation flexibility. Since ELA2 are included into the scope, there is no safety impact, otherwise a positive one, to include also ELA1 aircraft. Moreover, the entire scope of General Aviation aircraft is not covered by this proposed disposal. General Aviation organizations are also maintaining ELA1 and complex motor-powered aircraft. Since EASA proposed disposals goal is to support operations of "*General Aviation aircraft in Europe by reducing the regulatory burden for the embodiment of simple changes and repairs in certain aircraft*", FNAM and GIPAG suggest to ensure that following aircraft are included in the scope of CS-SC105a: • ELA1, ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT • All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO **PROPOSAL** Add all non-pressure General Aviation aircraft into the scope of CS-SC105a such as: • ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT • All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO Pressure aircraft with MTOMs of less than 5700 kg could be added at condition that the main structure is not modified. Clarify if ELA1 aircraft are included into the scope of CS-SC105a

response | Not accepted

Refer to the response to comment #110.

comment | *217* comment by: *FNAM*

ISSUE – 5.Manuals
Instruction of Continued Airworthiness are currently drown up by Design Approval Holders only. Nevertheless, EASA proposed disposals introduce possibilities for maintenance organizations to amend Instruction of Continuing Airworthiness in order to establish maintenance inspections/actions. This is non-consistent with Regulation (EU) N°1321/2014 maintenance organizations privileges. Therefore, FNAM and GIPAG suggest to harmonize EASA proposals in all European requirement by amending Regulation (EU) N°1321/2014 maintenance organizations privileges.
PROPOSAL
Harmonize proposed requirements in all European regulations

response | Not accepted

Refer to the response to comments #148.

comment | *279* comment by: *Martin Ryff*

Standard Change CS-SC105a
INSTALLATION OF MOUNTING SYSTEMS TO HOLD EQUIPMENT

Suction mounts need to be excluded from not being suitable for release to service by the pilot.

They are easy to mount and do not at all affect the structure.

response | Partially accepted

This SC may require an amendment of the AFM to provide adequate reference to the instructions for the operation and the weight of the mounting system, as required.

At the same time, CS-STAN.60 explains that the AFM supplement is considered part of the SC, and, therefore, it does not require a specific approval.

Thus, once the installation has been released to service by the maintenance organisation, the pilot-owner only needs to follow the AFM/AFMS that records the installation.

To improve clarity, an explanatory note has been added in Chapter 6, Release to Service.

comment | *305* comment by: *European Sailplane Manufacturers*

The wording for the proposed load test should be improved:

	Current: ...Loading should be applied for at least 3 seconds with no failures, damage or permanent distress. Proposed: ...Loading should be applied for at least 3 seconds with no failures, damage or permanent deformation. Rationale: Use deformation instead of distress.
response	Accepted The wording has been improved.

Standard Change CS-SC106a p. 46-47

comment	*61* comment by: *CAA CZ* **CS-SC106a —Installation of flight time recorders (new)** **Paragraph 3.:** We recommend you to add this condition: There should be no emitting EM field from the recorder during the flight. **Paragraph 4.:** „GSM, UMTS …"gives restriction to no more than 100mW output power. After our consideration we are of the opinion that any EM field emitted from the recorder must not be allowed during the flight as it is mentioned above.
response	Partially accepted Section 3 already contains some hazard mitigations.

comment	*218* comment by: *FNAM* **AGREEMENT** FNAM and GIPAG thank for adding this new possibility, in particular for allowing the installation of this equipment without EASA Form 1
response	Noted

comment	*219* comment by: *FNAM* **ISSUE - 2. Applicability/Eligibility** EASA proposed disposals ensure more flexibility for ELA2 aircraft. FNAM and GIPAG are not certain to understand the scope of this proposal and suggest EASA to clarify that ELA1 aircraft are included in the scope of flight time recorder installation flexibility. Since ELA2 are included into the scope, there is no safety impact, otherwise a positive one, to include also ELA1 aircraft.

Moreover, the entire scope of General Aviation aircraft is not covered by this proposed disposal. General Aviation organizations are also maintaining ELA1 and complex motor-powered aircraft. Since EASA proposed disposals goal is to support operations of "*General Aviation aircraft in Europe by reducing the regulatory burden for the embodiment of simple changes and repairs in certain aircraft*", FNAM and GIPAG suggest to ensure that following aircraft are included in the scope of CS-SC106a:

- ELA1, ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

PROPOSAL
Add all General Aviation aircraft into the scope of CS-SC106a such as:

- ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

Clarify if ELA1 aircraft are included into the scope of CS-SC106a

response

Noted

ELA1 aircraft are included in ELA2.

comment *220* comment by: *FNAM*

ISSUE – 5.Manuals
Instruction of Continued Airworthiness are currently drown up by Design Approval Holders only. Nevertheless, EASA proposed disposals introduce possibilities for maintenance organizations to amend Instruction of Continuing Airworthiness in order to establish maintenance inspections/actions. This is non-consistent with Regulation (EU) N°1321/2014 maintenance organizations privileges. Therefore, FNAM and GIPAG suggest to harmonize EASA proposals in all European requirement by amending Regulation (EU) N°1321/2014 maintenance organizations privileges.
PROPOSAL
Harmonize proposed requirements in all European regulations

response

Not accepted

Refer to the response to comment #148.

Standard Change CS-SC107a p. 48-49

comment *44* comment by: *European Powered Flying Union*

CS-SC107a
page 48/65
3. Acceptable methods, techniques, and practices

As regards self-adhesive CO badge detectors we propose to classify these constructions as "suitable for the release to service of the aircraft by the Pilot-owner".

Rationale:
As the suction mounts mentioned in CS-SC105a self adhesive CO badge detectors are light, quickly installed, and easy to handle, no srews or bolts are required, the structure of the aircraft remains untouched.

A release to service of the aircraft by the Pilot-owner keeps "time on ground" as well as costs down, any such measure allows for more flying, thus increasing safety indirectly.

response

Partially accepted

According to the proposed SC, the pilot-owner cannot release the aircraft into service on the occasion of the first installation. However, any subsequent replacement of monoxide detectors badges can be performed by the pilot-owner.

comment

69 comment by: *Samionics / General Aviation Avionics*

Any references to self adhesive (non electrical) CO badge detectors should be deleted from SC107a.
Many GA aircraft already have these installed in the instrument panel thus making all aircraft with already installed CO badge detectors unairworthy due to unauthorized modification. So far we have never heard of an ARC review resuting in a remark due to an installed self ahdesive CO detector.

response

Not accepted

CS-STAN must not be confused with mandatory requirements.

CS-STAN is expected to foster the installation of safety equipment in an economical manner.

comment

112 comment by: *Europe Air Sports*

Installation of carbon monoxide detectors

NPA text:
3. Acceptable methods, techniques, and practices

EAS Comment:
As regards self-adhesive CO badge detectors we propose to classify these constructions as "suitable for the release to service of the aircraft by the Pilot-owner".

Rationale:
As the suction mounts mentioned in CS-SC105a self adhesive CO badge detectors are light, quickly installed, and easy to handle, no srews or bolts are required, the structure of the aircraft remains untouched.

A release to service of the aircraft by the Pilot-owner keeps "time on ground" as well as costs down, any such measure allows for more flying, thus increasing safety indirectly.

response | Partially accepted

See the response to comment #44.

comment | *173* comment by: *The Norwegian Air Sports Federation*

NLF welcomes this proposal. However, even the initial installation of a self-adhesive CO detector should be possible to perform and release by a pilot-owner.

response | Partially accepted

See the response to comment #44.

comment | *221* comment by: *FNAM*

AGREEMENT
FNAM and GIPAG thank for adding this new possibility

response | Noted

comment | *222* comment by: *FNAM*

ISSUE - 2. Applicability/Eligibility
EASA proposed disposals ensure more flexibility for other than complex motor-powered aircraft, for rotorcraft that are not complex motor-powered aircraft and to any ELA2 aircraft.
FNAM and GIPAG are not certain to understand the scope of this proposal and suggest EASA to clarify that ELA1 aircraft are included in the scope of carbon monoxide detectors installation flexibility. Since ELA2 are included into the scope, there is no safety impact, otherwise a positive one, to include also ELA1 aircraft.
Moreover, the entire scope of General Aviation aircraft is not covered by this proposed disposal. General Aviation organizations are also maintaining ELA1 and complex motor-powered aircraft. Since EASA proposed disposals goal is to support operations of "*General Aviation aircraft in Europe by reducing the regulatory burden for the embodiment of simple changes and repairs in certain aircraft*", FNAM and GIPAG suggest to ensure that following aircraft are included in the scope of CS-SC107a:

- ELA1, ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

PROPOSAL
Add all General Aviation aircraft into the scope of CS-SC107a such as:

- ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

Clarify if ELA1 aircraft are included into the scope of CS-SC107a

response: Noted

ELA1 aircraft are included in ELA2.

comment *223* comment by: *FNAM*

ISSUE – 5.Manuals
Instruction of Continued Airworthiness are currently drown up by Design Approval Holders only. Nevertheless, EASA proposed disposals introduce possibilities for maintenance organizations to amend Instruction of Continuing Airworthiness in order to establish maintenance inspections/actions. This is non-consistent with Regulation (EU) N°1321/2014 maintenance organizations privileges. Therefore, FNAM and GIPAG suggest to harmonize EASA proposals in all European requirement by amending Regulation (EU) N°1321/2014 maintenance organizations privileges.
PROPOSAL
Harmonize proposed requirements in all European regulations

response: Not accepted

Refer to the response to comment #148.

Standard Change CS-SC151ab p. 50

comment *224* comment by: *FNAM*

FNAM and GIPAG wonder why ELA1 aircraft are not included in the scope of headrests installation flexibility. Since ELA2 are included into the scope, there is no safety impact, otherwise a positive one, to include also ELA1 aircraft.

response: Accepted

ELA2 includes ELA1. Thus, an SC applicable to ELA 2 aircraft is applicable to ELA1 aircraft too.

Standard Change CS-SC152ab p. 51-52

comment *45* comment by: *European Powered Flying Union*

CS-SC152~~a~~b Changes to seat cushions including the use of alternative foam
page 51/65
2. Applicability/Elligibility

We propose to extend applicability and elligibility to "CS-23" Level 1 and Level 2 aircraft.

Rationale:
There is no technology gap between these aircraft.

Question: As regards CS-23.562: Would it be more helpful to indicate the more recent CS-23.2270? (or CS 23.2270, if you prefer, but both versions exist e.g. in the eRules CS-23 (Amendment 5), negligible "peanut" or worth to be adjusted?)
materials

response Partially accepted

CS-STAN is intended to cover existing and already certified aircraft, therefore the definition of ELA and CS-23.562 is deemed appropriate.

CS-2270 has been added in the list of examples.

comment *113* comment by: *Europe Air Sports*

Changes to seat cushions including the use of alternative foam materials

NPA text:
2. Applicability/Elligibility

EAS Comment:
We propose to extend applicability and eligibility to "CS-23" Level 1 and Level 2 aircraft.

Rationale:
There is no technology gap between these aircraft.

response Noted

Refer to the response to comment #45.

comment *225* comment by: *FNAM*

ISSUE - 2. Applicability/Eligibility
EASA proposed disposals ensure more flexibility for other than complex motor-powered aircraft, for rotorcraft that are not complex motor-powered aircraft and to any ELA2 aircraft.
FNAM and GIPAG are not certain to understand the scope of this proposal and suggest EASA to clarify that ELA1 aircraft are included in the scope of seat cushions including the use of alternative foam material change flexibility. Since ELA2 are included into the scope, there is no safety impact, otherwise a positive one, to include also ELA1 aircraft.
Moreover, the entire scope of General Aviation aircraft is not covered by this proposed disposal. General Aviation organizations are also maintaining ELA1 and complex motor-powered aircraft. Since EASA proposed disposals goal is to support operations of "*General Aviation aircraft in Europe by reducing the regulatory burden for the embodiment of simple changes and repairs in certain aircraft"*, FNAM and GIPAG suggest to ensure that following aircraft are included in the scope of CS-SC152b:

- ELA1, ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

PROPOSAL
Add all General Aviation aircraft into the scope of CS-SC152b such as:

- ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

Clarify if ELA1 aircraft are included into the scope of CS-SC152b

response | Not accepted

It is to be noted that the definition of ELA2 includes ELA1 aircraft.

Regarding the proposal for an extension of the applicability, at present, EASA does not have a proper substantiation and risk evaluation that supports this.

comment | *307* comment by: *European Sailplane Manufacturers*

We would propose to use the word "sailplane" instead of "glider" for consistency in the CS-STAN. (In para 3.(b)(3), two locations in that para.)

response | Accepted

Further guidance on rectangular baskets and turning vents has been introduced.

Refer also to the response to comment #94.

Standard Change CS-SC201ab p. 53-54

comment *177* comment by: *The Norwegian Air Sports Federation*

NLF would like to suggest that the following restriction is removed:

"This SC does not permit the installation of digital multifunction displays."

By precluding digital multifunction systems, extremely valuable data logging features (which multifunction engine instruments typically possess, unlike individual engine instruments) are not made available to pilots.

The logging of engine monitor data should rather be strongly supported by the Agency, as it is a very efficient means to monitor the health of an aircraft engine. Due to algorithms it is possible to detect anomalies, such as a poor exhaust valve, long before it becomes critical. We would like to highlight some articles about the subject to further emphasise why this restriction should be removed:

https://savvyanalysis.com/articles/interpreting-your-engine-monitor
https://www.planeandpilotmag.com/article/engine-analyzers-information-is-power/#.XA62oyd7lp4

response Not accepted

This proposal goes beyond the intent of CS-SC201b, which only allows the exchange of basic instruments, and it is not aimed at introducing MFDs for other functions.

However, it must be noted that there are already EASA aircraft multiple list (AML) STCs available that allow the installation of multifunction displays.

comment *226* comment by: *FNAM*

ISSUE - 2. Applicability/Eligibility
EASA proposed disposals ensure more flexibility for piston-engined aeroplanes with MTOMs of less than 2 730 kg, and to ELA2 aircraft.
FNAM and GIPAG are not certain to understand the scope of this proposal and suggest EASA to clarify that ELA1 aircraft are included in the scope of this flexibility. Since ELA2 are included into the scope, there is no safety impact, otherwise a positive one, to include also ELA1 aircraft.
Moreover, the entire scope of General Aviation aircraft is not covered by this proposed disposal. General Aviation organizations are also maintaining ELA1 and complex motor-powered aircraft. Since EASA proposed disposals goal is to support operations of "*General Aviation aircraft in Europe by reducing the regulatory burden for the embodiment of simple changes and repairs in certain aircraft"*, FNAM and GIPAG suggest to ensure that following aircraft are included in the scope of CS-SC201b:

- ELA1, ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

PROPOSAL
Add all General Aviation aircraft into the scope of CS-SC201b such as:

- ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

Clarify if ELA1 aircraft are included into the scope of CS-SC201b

response

Noted

ELA2 includes ELA1 aircraft.

comment

227 comment by: *FNAM*

ISSUE – 5.Manuals
Instruction of Continued Airworthiness are currently drown up by Design Approval Holders only. Nevertheless, EASA proposed disposals introduce possibilities for maintenance organizations to amend Instruction of Continuing Airworthiness in order to establish maintenance inspections/actions. This is non-consistent with Regulation (EU) N°1321/2014 maintenance organizations privileges. Therefore, FNAM and GIPAG suggest to harmonize EASA proposals in all European requirement by amending Regulation (EU) N°1321/2014 maintenance organizations privileges.
PROPOSAL
Harmonize proposed requirements in all European regulations

response

Not accepted

Refer to the response to comment #148.

comment

241 comment by: *DGAC Deputy Head of aircraft and operations rulemaking department*

DGAC France recommends to add in §3 the following requirement (in order to cover 23.773(a), in particular for backlit and/or LED display instruments installed on aeroplanes certified for night VFR):
- The instrument does not introduce any glare or reflections that could interfere with the pilot's vision. Compliance must be shown in all operations for which certification is requested.

response

Not accepted

Considerations related to glare or reflections are expected to be already sufficiently covered by ETSO authorisations, when applicable, and by the other provisions, in particular by the following:

— The display of information is consistent with the overall flight deck design philosophy.

— The instrument is suitable for the environmental conditions to be expected during normal operation.

comment *268* comment by: *Europe Air Sports*

Exchange of powerplant instruments

EAS Comment:
We would like to suggest that the following restriction is removed:
"This SC does not permit the installation of digital multifunction displays."

Rationale:
By precluding digital multifunction systems, extremely valuable data logging features (which multifunction engine instruments typically possess, unlike individual engine instruments) are not made available to pilots.
The logging of engine monitor data should rather be strongly supported by the Agency, as it is a very efficient means to monitor the health of an aircraft engine. Due to algorithms it is possible to detect anomalies, such as a poor exhaust valve, long before it becomes critical. We would like to highlight some articles about the subject to further emphasise why this restriction should be removed:
https://savvyanalysis.com/articles/interpretingyour-engine-monitor
https://www.planeandpilotmag.com/article/engineanalyzers-information-is-power/#.XA62oyd7lp4

response Not accepted

Refer to the response to comment #177.

comment *309* comment by: *European Powered Flying Union*

CS-SC201~~a~~b Exchange of powerplant instruments
page 53/65

Please remove this restriction: "This SC does not permit the installation of digital

multifunction displays."

Rationale:
By precluding digital multifunction systems, extremely valuable data logging features (which multifunction engine instruments typically possess, unlike individual engine instruments) are not made available to pilots.

The logging of engine monitor data should rather be strongly supported by the agency, as it is a very efficient means to monitor the health of an aircraft engine.

response

Not accepted

Refer to the response to comment #177.

Standard Change CS-SC206a p. 55-56

comment *62* comment by: *CAA CZ*

CS-SC206a EXCHANGE OF FIXED PITCH WOODEN PROPELLERS (new)
Paragraph 1., amend as follows:
This SC is for the exchange of fixed pitch wooden propellers **for a similar fixed pitch wooden propeller**.

Paragraph 3., add following text to the after the Table 1:
Dimensions of the installation (diameter of the centering hole, pitch circle, number and diameter of the mounting bolts) must match those of the original propeller. It is not possible to interfere with these dimensions of the new propeller unless expressly authorized by the manufacturer in the Installation Instructions.

response

Accepted

The SC has been amended in line with this comment.

comment *174* comment by: *The Norwegian Air Sports Federation*

NLF strongly supports this SC.

In accordance with NfL II 12/09, a similar concept has been tried and tested in Germany for nationally regulated aircraft since years. In Germany, the replacement propeller could either be approved according to Part-21 or in accordance with national German certification regulations. While we appreciate that the legal framework of the Basic Regulation is different than that applying to nationally regulated aircraft, the following proposed wording under item 3 may mean that unnecessary restrictions are put in place:

"The new propeller shall be type-certified by EASA".

This will preclude the installation of a number of potentially acceptable wooden propellers for a segment where type certification may not be practical, possible or even required by the Basic Regulation. Furthermore, the choice of wording («by

EASA») precludes propellers, which may be certified by other acceptable bodies than EASA, such as the FAA when EASA is just acting as the validating authority under the FAA-EASA TIP revision 6.1 chapter 3.5.3.2 (a). This provision explicitly confirms that validation of propeller TCs will normally be classified as «basic» projects.

NLF would like to suggest that the requirement is either deleted or replaced with the following wording:

"The new propeller shall have a type certificate issued in accordance with regulation (EU 2018/1139 article 11, unless the requirements for a derogation under article 18 (1) (a) is fulfilled or the new propeller has a type certificate issued or accepted in accordance with article 68 (1). The requirement for a type certificate does not apply if the original propeller has been certified as a part of the design of the aircraft in accordance with article 11 last paragraph, and the aircraft design approval holder has verified that the new propeller is acceptable as a replacement."

response

Partially accepted

EASA appreciates the intention of this comment, and the SC has been amended in order to provide more clarity.

However, the use of propellers that were certified as a part of the design of different aircraft types is not acceptable because those propellers were only approved for those dedicated aircraft types.

comment *228* comment by: *FNAM*

AGREEMENT
FNAM and GIPAG thank for adding this new possibility

response

Noted

comment *229* comment by: *FNAM*

ISSUE - 2. Applicability/Eligibility
EASA proposed disposals ensure more flexibility for ELA2 aircraft with fixed pitch wooden propellers.
FNAM and GIPAG are not certain to understand the scope of this proposal and suggest EASA to clarify that ELA1 aircraft are included in the scope of fixed pitch wooden propellers exchange flexibility. Since ELA2 are included into the scope, there is no safety impact, otherwise a positive one, to include also ELA1 aircraft.
Moreover, the entire scope of General Aviation aircraft is not covered by this proposed disposal. General Aviation organizations are also maintaining ELA1 and complex motor-powered aircraft. Since EASA proposed disposals goal is to support operations of "*General Aviation aircraft in Europe by reducing the regulatory burden for the embodiment of simple changes and repairs in certain aircraft"*, FNAM and GIPAG suggest to ensure that following aircraft are included in the scope of CS-SC206a:

- ELA1, ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

PROPOSAL
Add all General Aviation aircraft with fixed pitch wooden propellers into the scope of CS-SC206a such as:

- ELA2 and other than complex motor-powered with MTOW bellow 5700kg operating in NCO, SPO, CAT
- All complex aircraft with MTOM 5700kg which are not operated in CAT but in NCC and SPO

Clarify if ELA1 aircraft with fixed pitch wooden propellers are included into the scope of CS-SC206a

response

Not accepted

The scope of ELA 2 aircraft covers ELA 1 aircraft.

The extension of the applicability to a wider range of aircraft as proposed could be considered at a later stage. Currently, EASA does not have an appropriate substantiation and risk evaluation that supports such an extension of the applicability.

comment *230* comment by: *FNAM*

ISSUE – 5.Manuals
Instruction of Continued Airworthiness are currently drown up by Design Approval Holders only. Nevertheless, EASA proposed disposals introduce possibilities for maintenance organizations to amend Instruction of Continuing Airworthiness in order to establish maintenance inspections/actions. This is non-consistent with Regulation (EU) N°1321/2014 maintenance organizations privileges. Therefore, FNAM and GIPAG suggest to harmonize EASA proposals in all European requirement by amending Regulation (EU) N°1321/2014 maintenance organizations privileges.
PROPOSAL
Harmonize proposed requirements in all European regulations

response

Not accepted

Refer to the response to comments #148.

comment *267* comment by: *Europe Air Sports*

Exchange of fixed pitch wooden propellers

EAS Comment:

EAS supports this proposal.

Furthermore, the solution is based on a concept applied since years for nationally regulated aircraft in Germany, as per NfL II 12/09. But according to the German concept, the replacement propeller could either by approved according to Part-21 **or** the German national certification regulation. CS-SC206a specifies – however – that the replacement propeller should be «type-certified by EASA». This is far from ideal, as it precludes the installation of a number of potentially acceptable wooden propellers for a segment where type certification may not be practical or possible. Also, the choice of wording («by EASA») precludes propellers, which may be certified by other acceptable bodies than EASA, such as the FAA when EASA is just the validating authority under the US-EU BASA TIP revision 6.1 chapter 3.5.3.2 (a). This provision explicitly confirms that validation of propeller TCs will normally be classified as «basic» projects.

Therefore EAS proposes:
Replace the requirement with the following wording: «The new propeller shall have a type certificate issued in accordance with regulation (EU 2018/1139 article 11, unless the requirements for a derogation under article 18 (1) (a) is fulfilled or the new propeller has a type certificate issued or accepted in accordance with article 68 (1). The requirement for a type certificate does not apply if the original propeller has been certified as a part of the design of the aircraft in accordance with article 11 last paragraph, and the aircraft design approval holder has verified that the new propeller is acceptable as a replacement.»

response

Partially accepted

Refer to the response to comment #174.

comment

310 comment by: *European Powered Flying Union*

CS-SC206a Exchange of fixed pitch wooden propellers
page 55/65

We propose:
The new propeller shall have a type certificate issued in accordance with regulation (EU 2018/1139 article 11, unless the requirements for a derogation under article 18 (1) (a) is fulfilled or the new propeller has a type certificate issued or accepted in accordance with article 68 (1). The requirement for a type certificate does not apply if the original propeller has been certified as a part of the design of the aircraft in accordance with article 11 last paragraph, and the aircraft design approval holder has verified that the new propeller is acceptable as a replacement.»

Rationale:
We found this: the solution is based on a concept applied since years for nationally regulated aircraft in Germany, as per NfL II 12/09. But according to the German concept, the replacement propeller could either by approved according to Part-21 **or** the German national certification regulation. CS-SC206a specifies – however – that the replacement propeller should be «type-certified by EASA». This is far from ideal,

	as it precludes the installation of a number of potentially acceptable wooden propellers for a segment where type certification may not be practical or possible. Also, the choice of wording («by EASA») precludes propellers, which may be certified by other acceptable bodies than EASA, such as the FAA when EASA is just the validating authority under the US-EU BASA TIP revision 6.1 chapter 3.5.3.2 (a). This provision explicitly confirms that validation of propeller TCs will normally be classified as «basic» projects.
response	Partially accepted Refer to the response to comment #174.

Standard Change CS-SC207a p. 57

comment	*47* comment by: *European Powered Flying Union* CS-SC207a page 57/65 6. Release to service We support this provision. Rationale: It helps the ballooning community, our sisters and brothers in the airspace, to keep costs down, this within reasonable tolerances and limitations.
response	Noted

comment	*63* comment by: *CAA CZ* **Paragraph 3., add following dash:** - The new cylinder should be equipped with quick close valve. **Paragraph 4., add following dash:** The new cylinder must be similar in length/diameter and must not be heavier than the one that was originally installed.
response	Partially accepted The wording on geometric dimensions has been added. Additionally, a reference to EASA Safety Information Bulletin (SIB) 2018-14 has been introduced in order to provide guidance on quarter-turn ball valves.

comment	*100* comment by: *AESA (NAA Spain)* 2. Applicability/Elegibility Could it be supposed that non commecial with a HAB ELA 2 has not restrictions?

	(as e.g.: a HAB manufactured by Cameron, size 140, for 1+ 4 pax, categorized ELA2) Could it be supposed then that the exchange of HAB fuel Cyls has no restrictions for commercial OPS?
response	Noted EASA has decided to limit the eligibility of this SC to ELA1 balloons and non-commercial operations, as currently, there is no risk-assessment available that supports an extension of the applicability.

comment	*101* comment by: *AESA (NAA Spain)* 3. Acceptable methods, techniques and practices a) Does it mean that the cylinder must have a form one or a CRS or it can be included in the CRS of a fully equipped balloon? b) Attending the weight, it could mean that a different size of cylinders can not be used other than the cylinders acquired when it was purchased the first time, even though the cylinders are compatible and manufactured by the same manufacturer e.g.: Having two cyls of 20 kg (capacity) one of them, when empty, can not be replaced for another of 30 Kg, even when load calculation has margin enough?
response	Partially accepted a) the SC may be released by the Pilot-owner subject to compliance with AMC M.A.801 b) the installation of heavier fuel cylinders is not permitted; however, the SC does not restrict prior installation approvals by the OEM of the bottom-end.

comment	*102* comment by: *AESA (NAA Spain)* 4. Limitations Is changing the connectors considered a modification?
response	Noted No changes to the fuel cylinder or fuel system are permitted. Changing connectors is a change under Part 21, but this is not covered by SC207a.

Standard Change CS-SC401bc	p. 58-59

comment	*2* comment by: *Genave Italiana SNC*

	In this particular SC, the applicability for rotorcraft is too restrictive: none of the instruments are affected by the type of engine, therefore we do not understand why a simple instrument like a turn and slip should not be installed in a single turbine helicopter (e.g. AS350) under this Standard Change.
response	Noted This SC is limited to rotorcraft that are certified to operate in day-VFR conditions only (thus excluding IFR or night VFR); therefore, there could be only rare cases of turbine rotorcraft that are eligible to embody this SC. Nevertheless, EASA will assess the possibility of extending the applicability for rotorcraft as part of the next revision of CS-STAN.

comment	*46* comment by: *European Powered Flying Union* CS-SC401~~b~~c page 58/65 2. Applicability/Elligibility Question: Why is a single-engine turbine aeroplane elligible, why is a single-engine turbine helicopter not elligible? Many thanks for your answer. Exchange of basic flight instruments We suggest that the following being removed restriction is removed: "This SC does not permit the installation of digital multifunction displays." Rationale: In accordance with NCO.IDE.A.120, aircraft operated in day VFR only, have just very limited minimum requirements with regard to instruments: 1. magnetic heading 2. time 3. pressure altitude 4. indicated airspeed (alternatively Mach number) As long as these four mandatory instruments remain installed as separate instruments, multifunction instruments for all other functions – as well as duplications for item (1) to (4) – should be allowed. If kept as is, the restriction is potentially reducing safety.
response	Not accepted The first part of the comment is noted; see the response to comment #2. The proposal to remove the sentence 'This SC does not permit the installation of digital multifunction displays' is not accepted. This proposal goes beyond the intent of CS-SC401c, which only allows the exchange of basic instruments, and it is not aimed at introducing MFDs for other functions.

comment	*175* comment by: *The Norwegian Air Sports Federation*

NLF would like to suggest that the following restriction is removed:

"This SC does not permit the installation of digital multifunction displays."

In accordance with NCO.IDE.A.120, aircraft operated in day VFR only, has just very limited minimum requirements with regard to instruments:

1. magnetic heading
2. time
3. pressure altitude
4. indicated airspeed (alternatively Mach number)

As long as these four mandatory instruments remain installed as separate instruments, multifunction instruments for all other functions – as well as duplications for item (1) to (4) – should be allowed.

If kept as is, the restriction is potentially reducing rather than increasing safety.

response

Not accepted

This SC is not limited to day-VFR conditions, except for rotorcraft. The reference to balloons in Section 2 has been deleted.

comment

242 comment by: *DGAC Deputy Head of aircraft and operations rulemaking department*

DGAC France recommends to add in §3 the following requirement (in order to cover 23.773(a), in particular for backlit and/or LED display instruments installed on aeroplanes certified for night VFR):
- The instrument does not introduce any glare or reflections that could interfere with the pilot's vision. Compliance must be shown in all operations for which certification is requested.

response

Accepted

A condition for lighting or glare has been added in paragraph 3.

comment

269 comment by: *Europe Air Sports*

Exchange of basic flight instruments

EAS text:
We would like to suggest that the following restriction is removed:
"This SC does not permit the installation of digital multifunction displays."

Rationale:
In accordance with NCO.IDE.A.120, aircraft operated in day VFR only, have just very limited

minimum requirements with regard to instruments:
1. magnetic heading
2. time
3. pressure altitude
4. indicated airspeed (alternatively Mach number)
As long as these four mandatory instruments remain installed as separate instruments, multifunction instruments for all other functions – as well as duplications for item (1) to (4) – should be allowed.
If kept as is, the restriction is potentially reducing rather than increasing safety.

response Not accepted

EASA is convinced that these limitations should be kept. Please also refer to the response to comment #175.

comment *280* comment by: *Martin Ryff*

Standard Change CS-SC401bc
EXCHANGE OF BASIC FLIGHT INSTRUMENTS
2. Applicability/Eligibility

If I understand correctly, this rule would apply to a single-engine turbine aeroplane, but not to a helicopter. What is the reason for such different treatment given the fact that in both cases basic flight instruments as stated under 1 are being exchanged?

response Noted

See the response to comment #2.

Standard Repair CS-SR802bc p. 61-62

comment *48* comment by: *European Powered Flying Union*

CS-SR802~~b~~c
page 61/65
2. Applicability/Elligibility

Question: Why does the Agency explicitely mention "VLA" in this textblock?

Rationale:
If I remember correctly when CS-23 was re-organised CS-VLA was integrated. This is reflected by the integration of VLA povisions in CS-23 (Amendment 5).

response | Noted

EASA considers that the applicability of this SR does not need to be amended at this stage because, for the time being, there are no aircraft in service that have been certified according to Amendment 5 of CS-23. On the other hand, there are many aeroplanes which have been designed according to CS-VLA and CS-LSA and which are eligible to be repaired according to this SR. The applicability may be revised during the next regular update of CS-STAN.

comment | *93* comment by: *Siegfried LANITZ*

1. Purpose
I propose to implement into the Standard Repair CS-SR802bc the ORATEX Aircraft Fabric Repair Process. It can be applied to any kind of fabric covered light aircraft and any kind of covering used on the light airplane.

2. Application/Eligibility
The ORATEX Aircraft Fabric Repair Process is applicable to sailplanes, including powered sailplanes (as defined in ELA2), LSA, VLA and ELA2.

3. Acceptable methods, techniques, and practices
The following standard contains acceptable data:
ORATEX Application Manual & Airplane Maintenance Manual Supplement Doc. N° ADxC-51-001-AMM Edition 7.0 or higher.
Available under:
https://www.lanitz-aviation.com/downloads/viewcat/18/instructions_-manual

4. Limitations
The person responsible for the design of the repair has to apply chapter 51 of the ORATEX Application Manual & Airplane Maintenance Manual Supplement and must be familiar enough with the applicable airworthiness requirements to determine that the repair data developed from the reference in paragraph 3 above is appropriate to the product being repaired.
Why is the ORATEX Aircraft Fabric Repair Process applicable to all fabric covered aircraft?
The glue which is used to bond ORATEX to the structure or other fabric is based on a water-borne two component system, which bonds to almost any kind of surface. Due to its nature - being a water-borne system - it does NOT attack the underlaying paint system chemically - regardless of which chemical structure it may be. The "Wet Repair Process" is carried out by applying two layers of adhesive to the underlaying structure/fabric and two layers to the patch. The joint of the patch to the surface/fabric is carried out by joining the adhesive layer of the surface/fabric with the one of the patch by heat sealing - a so called thermo-contact-bonding. Before the ORATEX Aircraft Fabric Repair Process is applied, the load rating of the surface/fabric has to be carried out by applying the "Trial Attachment and Bonding Check" of chapter 20 of the ORATEX Application Manual & Airplane Maintenance Manual Supplement. If the surface/fabric fails the test, an additional integration by stitching is necessary. Small holes and damages can be repaired with the ORATEX "Dry Repair Process" of chapter 51-75-02 of the ORATEX Application Manual & Airplane Maintenance Manual Supplement.

response	Noted This proposal will be evaluated during the next revision of CS-STAN.

4. Impact assessment (IA) p. 63

comment	*231* comment by: *FNAM* **ISSUE – Impact Assessment** *"There is no need to develop in IA, in accordance with EASA MB Decision No 18-2015, as this NPA has been prepared in the framework of a regular update of CS-STAN"* FNAM and GIPAG fear that without impact assessment, stakeholders may not evaluate the real impact of EASA proposals on their activities. For example, organizations maintaining other than complex but also complex motor-powered aircraft may be impacted. All European regulation amendments should have a sound impact assessment. Even if this proposal has been prepared according to a dedicated framework, all stakeholders should be able to soundly comment this NPA and should be able to understand the potential impacts on their activities. **PROPOSAL** Provide an impact assessment
response	Not accepted Refer to the response to comment #136.

5. Proposed actions to support implementation p. 64

comment	*232* comment by: *FNAM* **ISSUE&PROPOSAL – FAQ and GA Community site** FNAM thanks EASA for the initiative to create GA Community site which may facilitate exchanges between all European stakeholders. FAQ and GA Community site cannot be considered as IRs, AMC/GM nor court of justice interpretations or guidelines but their aim is the same as a GM. FNAM and GIPAG fear that the FAQ provisions would not be applied as simple advice but as an IR due to the actual oversight framework. Since FAQ answers might be considered unproperly as regulatory requirements, FNAM and GIPAG suggest launching the usual required regulatory process described in the Basic Regulation : • For regulatory items: consult all stakeholders and competent authorities (comitology) in order to review all EASA's proposals (IR, AMC, GM); • For non-regulatory items: there is no room for such interpretative material in the Basic Regulation, so write GM and supersede FAQ.
response	Noted

FAQs are, indeed, non-regulatory material, and are set up to provide clarifications on specific questions. Their development is not governed by, or driven by, the Basic Regulation. As for the GA Community site, this provides a platform for all users to contact each other and share questions, experience and proposals with each other. Contributors from EASA have a similar role to other users, and this does not replace any formal regulatory material.

Experience has shown that, especially for general aviation, additional communication is needed to improve engagement and the understanding of the European framework.

3. Attachments

SC002 with amended text v3.pdf
Attachment #1 to comment #311

Merge of SC005 and SC006 ADS-B v3.pdf
Attachment #2 to comment #312

SC058b with amended text v3.pdf
Attachment #3 to comment #313