

Comment				Comment summary	Suggested resolution	From the commenter point of view a modification of the published text is*: -Not requested; -Recommended; -Requested	EASA comment disposition	EASA response
NR	Name of the organisation commenting	Section, table, figure	Page					
1	Individual	Subject	1	Subject of Special condition are consulted only once. Section 1549(b) is a subject common to all CS.	Make the ESF as generic as possible	Requested	Partially Accepted	Thank you for your comment. The comments is not fully understood since reference is made to a special condition while this is an ESF. EASA understands that the suggested resolution is to provide a broader applicability to this ESF. In this case it has been decided that the applicability of the ESF should be limited to CS-23 aeroplanes since for other aircraft categories, different compensating factors may be required. EASA has revised the applicability of this ESF, please see comment 2.
2	Individual	IDENTIFICATION OF ISSUE: APPLICABILITY	1 2	The applicability is too restrictive, Even a piston powered aircraft with Hydro-mechanical HMU controlled engine could be addressed.	Simplify and revise Applicabilty on page 2 to read: 1. APPLICABILITY This ESF is applicable to any aircraft other than airplane conforming to CS 23 at amendment 23-5 or later.	Recommended	Partially Accepted	Thank you for your comment. The applicability of this ESF has been revised as follows: “This ESF is applicable to CS-23 Aircraft.”
3	Individual	IDENTIFICATION OF ISSUE Compensating factors 1 & 2	1 2	The exact text of CS 23.1549 (Amdt 4 or earlier) Contains “yellow” not “amber”	Correct the text to reflect the same wording as the requirement	Requested	Accepted	Thank you for your comment. EASA has revised the text as proposed and only “yellow” is used in the text.
4	Individual	IDENTIFICATION OF ISSUE	1	Recognise that CS 23.1311(a)(7) doesn’t require identification of normal operating range	Include reference to CS 23.1311(a)(7)	Recommended	Not Accepted	Thank you for your comment. EASA does not agree to the comment as this ESF is related to CS 23.1549(b) for normal operating range. Also the paragraph CS 23.1311(a)(7) require electronic display instrument systems to comply with visual displays of instrument markings required by CS 23.1541 to 23.1553 and through application of CS 23.1549(b), normal operating range is to be displayed.
5	Individual	IDENTIFICATION OF ISSUE Compensating factors intro	1 2	Recognize that 23.1549 is applicable to more 23.1305 parameters that can be displayed	Provide a more generic list and names of engines parameters such as: engine rotor speeds, engine oil temperature & pressure and Indicated Turbine Temperature (ITT) (torque in case of propeller)	Recommended	Not Accepted	Thank you for your comment. EASA does not agree to the comment. The purpose of this ESF is not to provide an ESF for 23.1549 relative to all powerplant instruments for which the compensating factors may be different. EASA will not change the text.
6	Individual	IDENTIFICATION OF ISSUE Compensating factor 1	1 2	The ESF should concentrate on identification of abnormal conditions per CS 23.1311(a)(7)	Reword the first factor to highlight abnormal such as : The abnormal range of engine operating conditions are marked on graphical engine parameters indicators with yellow or red limits and ranges. The limit markings indicate the difference between normal and abnormal operational ranges.	Recommended	Not Accepted	Thank you for your comment. EASA does not agree to the comment as this ESF is related to CS 23.1549(b) for normal operating range. Also the definition on the ranges which are to be considered as “non-normal” is deemed clear enough in CS 23.1549.
7	Individual	Compensating factor 4	2-3	FADEC is not required and engine control is not the subject	Delete Compensating factor #4	Requested	Partially Accepted	Thank you for your comment. This ESF has been made for an aircraft with FADEC, that allows to reduce the crew workload in terms of engine management and is therefore a compensating factor. However, EASA has revised the text to mention that this compensating factor is only for aircraft having a FADEC and not to limit the applicability only to aircraft with FADEC.
8	FAA AIR-624	Gen	Gen	The proposed markings appear only to apply to the N1 and ITT gauges and not the other powerplant instruments. Consistency in gauge markings across all the powerplant instruments is the desire condition.			Accepted	Thank you for your comment. EASA has revised the text in order not to make this ESF applicable only to N1 and ITT.

Comment				Comment summary	Suggested resolution	From the commenter point of view a modification of the published text is*: -Not requested; -Recommended; -Requested	EASA comment disposition	EASA response
NR	Name of the organisation commenting	Section, table, figure	Page					
9	FAA AIR-624	Gen	Gen	A graphic or picture of the proposal would be helpful in making a determination of acceptability.			Noted	Thank you for your comment. EASA acknowledges the comment, but will not add the picture in this case as it would show the proprietary information of the applicant. In cases where this is not the case, EASA will attach diagrams or pictures to better illustrate the concept.
10	FAA AIR-624	Gen	Gen	FAA ELOS findings are for specific aircraft models (Ref. AC 20-166A). This proposed ELOS finding does not list any specific aircraft model and appears to be generic in nature. The FAA has historically not accepted a “generic ELOS” that is applicable to a wide range of aircraft models.			Noted	Thank you for your comment. In the EASA system, an ESF is raised based on the request of an applicant for their design. EASA can make the ESF more broadly applicability to other products if the defined conditions of that specific ESF allow. In this way the same ESF can be used by other applicants as well with no need of a new public consultation. In this specific case, EASA has found that the ESF can be applied to all aircraft defined in the applicability.
11	FAA AIR-624	Gen	Gen	The current FAA position on granting ELOS findings it to have the applicant step up to amendment 23-64 for the area of change and capture the requirements in an accepted means of compliance. The requirements in an accepted means of compliance would likely match the criteria identified as compensating features. Is EASA planning to propose this change to existing accepted MOCs such the consensus standards in ASTM F44?			Noted	Thank you for your comment. The described way to handle cases where the design does not comply with the CS requirements (for Amdt 4 and earlier) is also acceptable to EASA if suitable requirements are available in CS-23 amdt 5. EASA also raises ESF to CS-23 requirements (Amdt 4 and earlier) if so requested by the applicant and if suitable for the specific case. EASA reviews each request and advises the applicant, where appropriate, on the use of CS-23 Amdt 5. In this case, EASA has agreed to raise the ESF also to follow, as validating authority, the decision taken by the primary authority. EASA regularly reviews and provides inputs to ASTM F44 standards based on all available regulatory material (ESF, special conditions, Means of Compliance etc.), depending on the applicability of the ESF and the availability of other ASTMs standards addressing this issue.

Comment				Comment summary	Suggested resolution	From the commenter point of view a modification of the published text is*: -Not requested; -Recommended; -Requested	EASA comment disposition	EASA response
NR	Name of the organisation commenting	Section, table, figure	Page					
12	Transport Canada – Christopher Martin, Regional Engineer, Aircraft Certification	[all]	[all]	<p>Some colour combinations that can be challenging to distinguish and therefore are not typically used together. Along with the clearly understood implications of using green, yellow (amber) and red, they are considered far apart enough to be easily distinguishable. Using white in place of green may become more difficult to distinguish from yellow (amber).</p> <p>As stated in Section 5.c.(2) of AC 20-88A:</p> <p><i>(2) ...Emissive colors will inevitably appear different than reflective colors under different intensities and color temperatures of ambient illumination. At present, electronic display colors are not standardized and cannot be stated as general specifications. However, colors for electronic powerplant displays must be readily identifiable under all intensity settings and ambient light conditions. In particular, yellow (amber) must be easily distinguishable from both red and white, and green must be easily distinguishable from blue. Other colors used on electronic powerplant displays, if any, must be as distinctive as possible from the basic display marking colors.</i></p> <p>The difference between normal operating condition (typically green, but in this particular case, white) and takeoff or cautionary range (yellow/amber) under all intensity settings and ambient light conditions may be impacted and may not be readily identifiable, depending on design and operation of the particular indicator. This should be subject to Flight Test Crew evaluation for acceptability.</p> <p>Section 4.d of AC 20-88A states:</p> <p><i>d. Due to differences inherent in the various display media, methods of effectively applying scale markings can differ considerably. Furthermore, since aircraft powerplant installations vary in design and purpose, the final approval of any instrument (display) marking scheme (even those recommended herein) is subject to validation by the FAA flight test crew.</i></p>	The ESF should include a clear statement to say that an Authority Flight Test Crew evaluation will be necessary to ensure the colours used for the electronic powerplant displays are readily identifiable and distinguishable under all intensity settings and ambient light conditions	Recommended	Partially Accepted	Thank you for your comment. The proposed text would be too prescriptive which is not the intend of this ESF. EASA, however, has revised the text to include objective requirement for an assessment to be carried out.

* Please complete this column using the drop-down list