European Aviation Safety Agency

Deviations requests ETSO.Dev.P026 for an ETSO approval for CS-ETSO applicable to Electronic Instruments (ETSO-C4c, C46a, C47, C49b, C95, C151b) and to CS-ETSO Subpart A
Consultation Paper

1. Introductory note

The hereby presented deviation requests shall be subject to public consultation, in accordance with EASA Management Board Decision No 7-2004[1] products certification procedure dated 30 March 2004, Article 3 (2.) of which states:

"2. Deviations from the applicable airworthiness codes, environmental protection certification specifications and/or acceptable means of compliance with Part 21, as well as important special conditions and equivalent safety findings, shall be submitted to the panel of experts and be subject to a public consultation of at least 3 weeks, except if they have been previously agreed and published in the Official Publication of the Agency. The final decision shall be published in the Official Publication of the Agency."

2. CS-ETSO Subpart A 2.1 #2

Deviate form CS-ETSO Subpart A paragraph 2.1 and use EUROCAE ED-14F/RTCA DO-160F instead of ED-14D/DO-160D change 3.

Industry:
One major update resulting to a new revision of the document was the instruction of requirements for an 270 VDC power system. In other sections the requirements have been partially redefined. The revision F of the document defines the most current consensus on environmental testing requirements.

EASA:
We accept the deviation as alternate means to meet the requirement.

3. ETSO-C4c – Bank And Pitch Instruments

ETSO-C4c#4 – Bank and Pitch Instruments

Deviate from ETSO-C4c Section 4.1 to remove the marking requirement "*… the following information shall be legibly and permanently marked on the equipment: Nominal power input rating (electrical voltage and frequency, vacuum or air pressure)"*

Industry:
The display of pitch and roll data is only one of many electronic display functions. The power requirements for the display are called out in the installation manual.

EASA:
We accept the deviation as alternate means to meet the requirement.

[1] Cf. EASA Web: http://www.easa.europa.eu/ws_prod/g/doc/About_EASA/Manag_Board/2004/mb_decision_0704.pdf

4. ETSO-C46a – Maximum Allowable Airspeed Indicator

a) ETSO-C46a#2 – Maximum Allowable Airspeed Indicator

Deviate from ETSO-C46a paragraph 3.1.1 to use SAE AS 437A in lieu of SAE AS 437 as the Minimum Performance Standard.

Industry:
Using the current Minimum Performance Standards (MPS) revision level simply raises the performance standards used to the latest revision, and therefore imposes no reduction is the level of safety of the product. Changes in the revision are format/editorial only.

EASA:
We accept the deviation as alternate means to meet the requirement.

b) ETSO-C46a#3 - Maximum Allowable Airspeed Indicator

Deviate from ETSO-C46a paragraph 4.1 to remove the requirement for "*… the instrument must be marked to indicate its range in knots and, if applicable, to identify the* calibration *employed to control the movement of the maximum allowable airspeed pointer in the Vmo and Mmo ranges, or to identify the particular aircraft type design on which the instrument is intended to be used."*

Industry:
The display of maximum allowable airspeed is only one of many electronic display functions. The display does not compute airspeed and other data, it only displays it. The display can be configured for installation in a specific aircraft in accordance with the performance data for that aircraft. Configuration instructions are contained in the configuration section of the installation/configuration manual.

EASA:
We accept the deviation as alternate means to meet the requirement.

5. ETSO-C47 – Pressure Instruments – Fuel, Oil and Hydraulic

ETSO-C47#4 – Pressure Instruments – Fuel, Oil and Hydraulic

Deviate from ETSO-C47 Section 4.1 to remove the marking requirement for "*… in lieu of the weight, the range shall be shown*."

Industry:
The display of oil pressure is only one of many electronic display functions. The display does not compute pressure data, it only displays it. The display can be configured for installation in a specific aircraft. Configuration instructions are contained in the configuration section of the installation/configuration manual.

EASA:
We accept the deviation as alternate means to meet the requirement.

6. ETSO-C49b – Electric Tachometer: Magnetic Drag (Indicator and Generator)

ETSO-C49b#4 – Electric Tachometer: Magnetic Drag (Indicator and Generator)

Deviate from ETSO-C49b Section 4.1 to remove the marking requirement for "… *in addition, range and rating shall be shown."*

Industry:
The display of tachometer data is only one of many electronic display functions. The display does not compute tachometer data, it only displays it. The display can be configured for installation in a specific aircraft. Configuration instructions are contained in the configuration section of the installation/configuration manual.

EASA:
We accept the deviation as alternate means to meet the requirement.

7. ETSO-C95 - Mach Meters

ETSO-C95#1 - Mach Meters
Deviate from ETSO-C95 paragraph 3.1.1 to use SAE AS 8018A in lieu of SAE AS 8018 as the Minimum Performance Standard.

Industry:
Using the current Minimum Performance Standards (MPS) revision level simply raises the performance standards used to the latest revision, and therefore imposes no reduction in the level of safety of the product. Changes in the revision are format/editorial only.

EASA:
We accept the deviation as alternate means to meet the requirement.

8. ETSO-C151b - Terrain Awareness and Warning System (TAWS)

ETSO-C151b#1 - Terrain Awareness and Warning System (TAWS)
Deviate from ETSO-C151b Section 4.2.a to remove the marking requirement for "*… in Part 21 Section A Subpart Q § 21A.807(a)(3), the date of manufacture must be used in lieu of the serial number."*

Industry:
Given that the equipment is an electronic device with no scheduled maintenance or overhaul, Industry has determined that the date of manufacturer is NOT critical for maintenance and/or inspections, and proposes that the units be marked with the "more informative" serial number in lieu of the date of manufacture. It is widely accepted aviation industry practice to use serial numbers for tracking of individual components during their life cycle which would not be possible by using only a manufacturing date as more than one units are potentially manufactured per day.

EASA:
We accept the deviation as alternate means to meet the requirement, which is in line with Part 21.

ETSO-C151b#2 - Terrain Awareness and Warning System (TAWS)
Deviate from ETSO-C151b Section 4.2.a to remove the requirement "*…the applicable Class A, B or C must be permanently and legibly marked."* for accessory or display equipment.

Industry:
We agree that the Class information is useful information if provided on the main TAWS unit.

For accessories like controls or displays the Class selection does not change any requirement for the subcomponent as no functionality affected by the class selection may be integrated in those units. The respective Class declaration would be Class A/B/C to identify that they could be operated as part of any TAWS system independent from the associated Class. Under those circumstances the level of safety is independent from the fact that the unit is marked with the Class or not. As those units do have often a space problem on the label, we request not to require the marking of those units.

Electronic display units including symbol generators may provide functionality dedicated to one specific Class e.g. being able to support Class B/C TAWS systems only. Those units are approved to ETSO-C113 as the main certification standard and meet a lot of supporting ETSO for dedicated display function. For those units it is considered sufficient to provide the TAWS class information in the DDP and the installation documentation will identify to which kind of equipment the unit may be connected. In any case, the display is not the driving factor for the system performance mainly determined by the TAWS sensor. The information may even be irritating in cases where the display function is provided but no sensor installed on the aircraft. Industry considers that providing sufficient information regarding functionality and compatibility in the documentation is sufficient for a display system and provides an equal level of safety compared to marking the unit itself with the Class identifier.

EASA:
We accept the deviation as alternate means to meet the requirement.