



ETSO Workshop 2007 Handling of deviations



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04./05.12.2007

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Overview

- Regulatory context
- How to get access to deviations?
- How to apply for deviations?
- Examples of deviations
- What a deviation cannot be?
- Internal EASA handling of deviations

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Products certification procedure

- Article 21A.610 → request for submission for ETSO
- Management Board decision No 7-2004 products certification procedure dated 30 March 2004 → :
http://www.easa.europa.eu/doc/About_EASA/Manag_Board/2004/mb_decision_0704.pdf
- General principles of the procedures to be followed by EASA → Article 3 on *applicable requirements, certification specifications, acceptable means of compliance and guidance material*
- Article 3 states what procedures EASA must follow to administer applications for product certificate

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Article 3 (2.) of No 7-2004

- Applies inter alia to deviations to CS thus CS-ETSO
- Deviations are submitted internally at EASA to EASA Panel of Experts
- Deviations not already approved by EASA must be submitted to public consultation for at least 3 weeks



21A.610 & MB No 7-2004

21A.610 Approval for deviation

- (a) Each manufacturer who requests approval to deviate from any performance standard of an ETSO shall demonstrate that the standards from which a deviation is requested are compensated for by factors or design features providing an equivalent level of safety.
- (b) The request for approval to deviate, together with all pertinent data, shall be submitted to the Agency.

The hereby presented deviation requests shall be subject to public consultation, in accordance with EASA Management Board Decision No 7-2004¹ 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."



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How to access deviations?

→ Deviations published not yet approved → From EASA Web site

- ✦ Menu "Certification" → "Consultations"
- ✦ When a published deviation is selected, the text can be downloaded by clicking on "Download PDF"

→ Deviations approved → summarised in a single file

- ✦ Menu "Certification" → "Design Approvals" → "ETSO Authorisations"
- ✦ At bottom → Download "Summary of approved deviations"

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Web page for published deviations

Certification → Consultations from Home page

To select published deviations

The screenshot shows the EASA website's 'Certification' section. A left-hand navigation menu lists various topics, with 'Published deviations' highlighted. The main content area displays information about the Certification Directorate and lists various documents available for consultation, including 'Published deviations'.

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Details of published deviations

Certification → Consultations

To download the text of the deviation

The screenshot shows the 'Details of published deviations' page. It provides information about the Certification Directorate and lists various documents available for consultation. A link to 'Download deviations PDF' is highlighted, indicating where to click to download the text of a deviation.

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Web page for approved or rejected deviations

To select approved or rejected deviations

The screenshot shows the 'Web page for approved or rejected deviations'. It provides information about the Certification Directorate and lists various documents available for consultation. A link to 'Select approved or rejected deviations' is highlighted, indicating where to click to select approved or rejected deviations.

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Downloading summary

Certification → Design Approvals → ETSO Authorisations

Download summary in PDF format at bottom of page

The screenshot shows the 'Downloading summary' page. It provides information about the Certification Directorate and lists various documents available for consultation. A link to 'Download summary in PDF format' is highlighted, indicating where to click to download the summary in PDF format.

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File summarising deviations

Deviations

CS-ETSO Subpart A 2.1
Use of EUROCAE ED-14E/RTCA DO-160E instead of ED-14D/DO-160D change 3.
Published in [ETSO.DevP.02](#) from 26.2.2007 to 16.3.2007.
CRD document: [CRD.DevP02](#).

ETSO-C2d#1 – Airspeed Instruments
Deviate from ETSO-C2d 3.1.1 to use SAE AS 8019A instead of SAE AS 8019 as the Minimum Performance Standard.
Published in [ETSO.DevP.02](#) from 26.2.2007 to 16.3.2007.
CRD document: [CRD.DevP02](#).

Name	Description	Modified	Size
CRD.DevP07.pdf		13/06/2007 09:48:33	245 KB
CRD.DevP08.pdf		22/06/2007 11:53:39	15 KB
CRD.DevP10.pdf		05/09/2007 10:09:16	45 KB
CRD.DevP11.pdf		08/08/2007 11:48:07	12 KB
ETSO.DevP.02.r1.pdf		30/05/2007 10:55:05	124 KB

Published deviation Dev.P Comments Summary

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How to apply for deviations?

21A.610 Approval for deviation

(a) Each manufacturer who requests approval to deviate from any performance standard of an ETSO shall demonstrate that the standards from which a deviation is requested are compensated for by factors or design features providing an equivalent level of safety.

(b) The request for approval to deviate, together with all pertinent data, shall be submitted to the Agency.

- **Substantiate Equivalent Level of Safety (ELOS) via specific factor or different design feature that complies with the intent of the CS-ETSO**
- **Submit all supporting data**
- **Agency can distribute a template**
- **Agency must publish substantiation of ELOS together with supporting data**

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What information is needed for deviations: example

- **Indicate paragraph of the CS-ETSO/underlying standard for which a deviation is requested**
 - ✦ Ex: deviate from ETSO-C2d to modify the requirement 3.2.5 in SAE AS 8019A
- **Specify rationale and ELOS**
 - ✦ Ex: viewing angle modified:
 - Unit to be qualified towards several ETSOs in one single display
 - Various ETSOs specify different viewing angles
 - Apply what is required per ETSO-C113 and SAE AS8034
- **Authorisation refers to the deviations stated in the DDP; these deviations are clearly identified and documented for installation**

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Examples of deviations (1/2)

- Usage of updated standard
- Missing function, universally accepted
 - ✦ e.g. no 243 MHz transmitter for ELT → harmonisation with ICAO Annex 10, FAA TSO & marine beacons
- Change of technical mean to reach objective
 - ✦ e.g. missing function that is compensated by another feature such as an alert function replaced by a continuous display
 - ✦ e.g. combination of tape and digital readout for altitude in PFD instead of defined intervals with major increment markings (ETSO C10b)



Examples of deviations (2/2)

- More stringent requirement than ETSO
 - ✦ e.g. requirement not foreseen in ETSO C4c → DO178B
 - ✦ e.g. more stringent requirement than ETSO C52b
- Limited compliance to a defined requirement
 - ✦ Operational limitation e.g. maximum altitude
 - ✦ Installation limitation e.g. with compliant interface
 - ✦ Ultimate loads for ETSO C90c indicated on certificate + in CMM
- Adaptation of detailed ETSO requirements to overall operational philosophy of a unit
 - ✦ e.g. ETSO C129a: replace a requirement for an alert of manual input to automatic update when possible
- Adaptation of different requirements for an item identified by several ETSOs



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What a deviation cannot be? (1/2)

- A deviation cannot substantially modify the technical contents of the ETSO so as to completely modify the certification basis
 - ✦ No total replacement of a standard by another one, except for upgrade of version of standard
 - ✦ Partially replace some parts of a standard by other conditions without ELOS
 - ✦ Propose ELOS which needs detailed assumptions on an installation and that can only be substantiated by considering specific aspects of an implementation for an ETSO without specific links to installation
 - e.g. ETSO-2C37c/VHF versus ETSO-C135 that explicitly refers to installation



What a deviation cannot be? (2/2)

- Deviations on markings
 - ✦ e.g. for units with multiple ETSOs
- Requirement not applicable to a specific technology → indicated in compliance matrix
 - ✦ e.g. X-ray or UV- radiations test on LCD (vs. CRT)



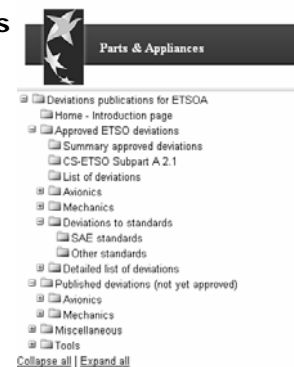
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Internal handling of deviations

- Tracking of all deviations
- Consolidated view by CS-ETSO & technical standard
- Consolidated view of published deviations
- Rejected deviations





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Discussion



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