Deviations request #91 for an ETSO approval for CS-ETSO applicable to Airborne ATC Transponder Equipment (ETSO-C76d) & VHF Radio Communications Transceiver Equipment Operating Within The Radio Frequency Range 117.975 To 137.000 Megahertz (ETSO-2C169a) 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 as amended by EASA Management Board Decision No 12-2007[1] products certification procedure dated 11th September 2007, 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. ETSO-C76d#1 Airborne ATC Transponder Equipment

Deviate from ETSO-C74d to use RTCA/DO-144A instead of Appendix 1 of ETSO-C74d.

Requirement:
N/A

Industry:

ELOS is provided by use of a later revision requirement document.

EASA:

EASA accepts this deviation as an equivalent level of safety as the whole later revision requirement document is used. Further it is planned to cancel ETSO-C74d in the near future.

3. ETSO-2C169a#1 VHF Radio Communications Transceiver Equipment Operating Within The Radio Frequency Range 117.975 To 137.000 Megahertz

Deviate from EUROCAE ED-23C paragraph 3.1.3.2 to have up to 11.2 db reduction in audio output instead of 10 db.

Requirement:
3.1.3.2 Multi-Carrier Sensitivity

For Class C and H1, the combined level of a multi-carrier RF input signal, modulated 30 % at 1000 Hz, required to produce a signal-plus-noise to noise ratio of 6 dB shall not exceed -85 dBm with an audio output power not lower than 10 dB below the declared audio output power.

For Class H2, the combined level of a multi-carrier RF input signal, modulated 30 % at 1000 Hz, required to produce a signal-plus-noise to noise ratio of 6 dB

[1] Cf. EASA Web: http://easa.europa.eu/management-board/docs/management-board-meetings/2007/04/MB%20Decision%2012-2007%20amending%20the%20certification%20procedure.pdf

shall not exceed -90 dBm with an audio output power not lower than 10 dB below the declared audio output power.

Industry:

The requirement defines a test condition intended to ensure that audio volume in the operating environment is sufficient for communication. A reduction in audio output is normal/typical with an ETSO limit of 10 db decrease. The applicant notes that the practical difference in ETSO limit of -10 db and the -11.2 db requested is not consequential to the pilot since he/she will not be able to tell a difference between them with only 1.2 db difference between them. In other words operational use in the multi-channel environment based on pilot volume is not affected since the pilot cannot detect the difference in volume. Consequently ELOS is provided in the operational use case. ELOS is provided by undetectable lower volume for the pilot so operational use is not affected.

EASA:

The deviations can be granted. The output power is reduced for this test, so that the audio channel is not in saturation for the measurements of the test. The goal of not having the auto channel in saturation is achieved for the proposed test conditions.