



ETSO Workshop 2007 Rulemaking

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Content of the presentation

- **Current Rulemaking tasks:**
 - + **NPA 2007-10** (Task ETSO.001)
Validation of existing national equipment specifications
 - + **NPA 2007-14** (Task ETSO.002 issue 1)
Systematic review and transposition of existing FAA TSO standards for parts and appliances into EASA ETSO
 - + **CRD 14-2005** (Task ETSO.004(b))
Miscellaneous ETSO
- **Future Rulemaking tasks:**
 - + **21.027** Repairs and design changes to ETSO
 - + **ETSO.002 (issue 2)** Systematic review and transposition of existing standards for parts and appliances into EASA ETSO

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NPA 2007-10 Validation of existing national equipment specifications

- **NPA published 05/07/2007**
- **22 Comments received until the end date (05/10/2007)**
- **CRD 1st quarter 2008**
- **Amendment 3 to CS-ETSO Mid 2008.**

ETSO-C100b	Child Restraint System (CRS)
ETSO-C132	Geosynchronous Orbit Aeronautical Mobile Satellite Services Aircraft Earth Station Equipment
ETSO-2C78	Crewmember Oxygen Mask
ETSO-2C512	Portable Gaseous Oxygen Supply (PGOS)
ETSO-2C513	Tow Release
ETSO-2C514	Airborne Systems for Non Required Telecommunication Services (In Non Aeronautical Frequency Bands) (ASNRT)

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NPA 2007-10 Validation of existing national equipment specifications

ETSO-C100b Child Restraint System (CRS)

- **There are no specific airworthiness provisions in CS-25 for impact protection of infants. These provisions are complemented by requirements on the seats themselves so that they can resist the possible impacts; these requirements are included in CS-ETSO. There is however yet no ETSO for Child Restrain Systems and, the Agency decided as a first step to adopt such ETSO based on the current FAA TSO standard (TSO-C100b)**
- **The next step is a study to determine possible enhancements. Results from this study are targeted 11 Month from signing a contract for this study.**

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NPA 2007-14 Systematic review and transposition of existing FAA TSO standards for parts and appliances into EASA ETSO

- NPA published 12/09/2007
- Comment end date 12/12/2007
- CRD 1st quarter 2008
- Amendment 3 to CS-ETSO Mid 2008.

ETSO-C44c	Fuel Flowmeters
ETSO-C45b	Manifold Pressure Instruments
ETSO-C47a	Pressure Instruments – Fuel, Oil and Hydraulic
ETSO-C56b	Engine Driven Direct Current Generator/ Starter Generators
ETSO-C121a	Underwater Locating Devices (acoustic) (self-powered)
ETSO-C142a	Non-Rechargeable Lithium Cells and Batteries
ETSO-C161	Ground Based Augmentation System (GBAS) Positioning and Navigation Equipment
ETSO-C166a	Extended Squitter Automatic Dependent Surveillance – Broadcast (ADS-B) and Traffic Information Services-Broadcast (TIS-B) Equipment Operating on the Radio Frequency of 1090 Megahertz (MHz)
ETSO-C173	Nickel-Cadmium and Lead-Acid Batteries
ETSO-C174	Battery Based Emergency Power Unit (BEPU)
ETSO-C175	Galley Cart, Containers and Associated Components

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CRD 14-2005 Miscellaneous ETSO

- The comment end date for NPA 2005-14 was 20/12/2005.
- comments and publication of revisions of similar TSO have shown that the majority of the ETSO proposals in NPA 14-2005 could no longer be considered mature standards.
- CRD 14-2005, published 12/10/2007.
- CS-ETSO Amendment 2 (4 quarter 2007)

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CRD 14-2005 Miscellaneous ETSO

- ETSO-C145a
 - Airborne Navigation Sensors using the Global Positioning System (GPS) Augmented by the Wide Area Augmentation System (WAAS)
- ETSO-C146a
 - Stand-Alone Airborne Navigation Equipment using the Global Positioning System (GPS) Augmented by the Wide Area Augmentation System (WAAS)
- ETSO-C151b
 - Terrain Awareness and Warning System (TAWS)
- ETSO-2C123b
 - Cockpit Voice Recorder Systems
- ETSO-2C124b
 - Flight Data Recorder Systems
- ETSO-2C509
 - Light Aviation Secondary Surveillance Transponders (LAST)
- ETSO-2C510
 - Crash Protected Airborne Recorder Systems - Image Recorder
- ETSO-2C511
 - Crash Protected Airborne Recorder Systems - CNS/ATM Recorder

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Future tasks

21.027 Repairs and design changes to ETSO

The objective of the task is to propose an amendment to the applicable paragraphs of IR Part 21 and related AMC/GM to:

- provide the option for applicants other than the ETSO authorisation holder, to do minor repairs and design changes to ETSO articles which have no appreciable effect on the airworthiness of the product in which they are installed.
- make the procedure for repair to APU consistent with the current procedures for repair to products.
- establish marking requirements for minor repair and design changes to ETSO. (Subpart Q)

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Future tasks

→ 21.027 Repairs and design changes to ETSO

- NPA is drafted by the Agency.
- This task is part of the 2008 RMP.



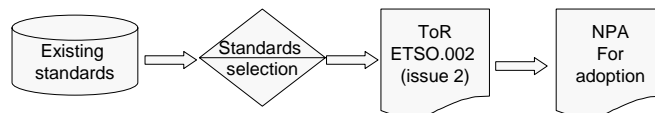
Future tasks

→ ETSO.002 (issue 2 planned to start 2008)

Systematic review and transposition of existing standards for parts and appliances into EASA ETSO.



Future tasks ETSO.002 (issue 2)



- Design independent from aircraft design
- Impact of the equipment on safety
- Request from Industry
- Harmonisation with FAA
- Equipment is not a standard part.



Future tasks ETSO.002 (issue 2)

- + *ETSO-C48/TSO-C48a* Carbon Monoxide Detector Instruments
- + *TSO-C39c* Aircraft Seats And Berths
- + *ETSO-C90c/TSO-C90d* Cargo Pallets, Nets and Containers
- + *TSO-C100c* Child restraint system
- + *TSO-C113b* Airborne Multipurpose Electronic Displays
- + *ETSO-2C123b/TSO-C123b* Cockpit Voice Recorders Systems
- + *ETSO-2C124b/TSO-C124b* Flight Recorder
- + *ETSO-C127a/TSO-C127a* Rotorcraft, Transport Aeroplane, and Normal and Utility Aeroplane Seating Systems
- + *TSO-C135a* Transport Aeroplane Wheels and Wheel and Brake Assemblies
- + *TSO-C138* Miscellaneous Non-Required Equipment
- + *ETSO-C145a/TSO-C145b* Airborne Navigation Sensors using the Global Positioning System (GPS) Augmented by the Wide Area Augmentation System (WAAS)
- + *ETSO-C146a/TSO-C146b* Stand-Alone Airborne Navigation Equipment using the Global Positioning System (GPS) Augmented by the Wide Area Augmentation System (WAAS)
- + *TSO-C165* Electronic Map Display Equipment for Graphical Depiction of Aircraft Position
- + *TSO-C172* Cargo Restraint Strap Assemblies
- + *ETSO-2C510/TSO-C176* Crash Protected Airborne Recorder Systems - Image Recorder
- + *ETSO-2C511/TSO-C177* Crash Protected Airborne Recorder Systems - CNS/ATM Recorder



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Future tasks ETSO.002 (issue 2)

TSO-C100c Child Restraint System (CRS)

In respect of the research study it is unlikely that this will be selected for issue 2 of ETSO.002.

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Future tasks ETSO.002 (issue 2)

TSO-C138 Miscellaneous Non-Required Equipment (TSO proposal)

The issue of "Non-Required Equipment" addressed by the FAA in the proposed TSO-C138 needs to be studied into more detail by EASA for a number of reasons:

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Future tasks ETSO.002 (issue 2)

The CS-ETSO is an Airworthiness code as a standard means to show compliance with the essential requirements of Annex 1 of the Basic Regulation.

21A.16A Airworthiness codes

→ "...these codes need to be sufficiently detailed and specific to indicate to applicants the conditions under which certificates will be issued".

→ "The Agency shall issue ... airworthiness codes..."

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Future tasks ETSO.002 (issue 2)

→ Conclusion:

- ✦ Selection of standards needs to be made.
- ✦ Standards need to be "mature"
- ✦ Standards need to fit into the EASA system.
- ✦ Priority (Safety) and resources will have an impact on the list.

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**Thank you for
your attention**



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