

RTCA SC-229 ELT UPDATE

2020 NOAA Beacon Manufacturers Workshop

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AGENDA

1. RTCA SC-229 Update
2. RTCA SC-235 Update
3. EUROCAE WG-98 SC1 Update
4. ARINC AEEC Committee Update
5. FAA Update
6. EASA Update
7. ICAO Update
8. Industry View



RTCA SC-229 ELT COMMITTEE



- RTCA DO-204B - MINIMUM OPERATIONAL PERFORMANCE STANDARD FOR AIRCRAFT EMERGENCY LOCATOR TRANSMITTERS 406 MHz
- Published December 2019
 - Triggered in Flight ELT
 - Second Generation C/S
 - Crash Robustness
 - Harmonized with EUROCAE ED-62B
- Committee Active Monitoring Status
- Comments Received
 - Errata
 - Clarifications
 - References
- Committee Back to Active Status
- Schedule
 - Fall 2019: Changes Reviewed
 - December 2019: Plenary @ EUROCAE
 - 1Q 2020 FRAC
 - 2Q Virtual Final Plenary
 - June 2020: Virtual RTCA PMC Approval
- DO-204B Change 1
 - Published June 11, 2020
- Committee back to Active Monitoring Status



RTCA SC-235 NON RECHARGEABLE LITHIUM BATTERY COMMITTEE



- Update RTCA/DO-227 for Lithium battery to incorporate the latest understanding of lithium battery technology, including battery testing and installation considerations.
- RTCA DO-227B - MINIMUM OPERATIONAL PERFORMANCE STANDARD FOR NON-RECHARGEABLE LITHIUM BATTERIES
- Published September 2017
- Committee Non Active Status
- 2020 Comments Received from EASA
 - ETSO-C142a Deviations
 - Shock Vibe Thermal Runaway Sequencing
 - Modification of unit under test (TR)
 - Inconsistency of figures
 - Cell Discharge Tolerances
- Committee in Active Monitoring Status
- Oct 8, 2020: Plenary
 - Discussion of Changes
 - Inputs on DO-227A
 - Possible Course of Action
 - Possible TOR Revisions



EUROCAE WG-98 SC1 RLS TRIGGER



- Special Committee 1 (SC1)

ED-277 - MINIMUM AVIATION
SYSTEM PERFORMANCE
STANDARD FOR AIRCRAFT
EMERGENCY LOCATOR
TRANSMITTER RETURN LINK
SERVICE

- Galileo Return Link Service

Type 1 – Auto Acknowledge
Type 2 – Manual Ack, messaging.
Command Services:
Remote Activation/Deactivation;
Beacon Parameters

- Status

Dec 2019 Live Plenary Paris
April 2020: Virtual Plenary
June 2020: Start Open Consultation

- Remaining Schedule

2021 : EUROCAE Council Approval
2021: MASPS Publication ED-277
202?: Operational Validation –
Operators, Galileo, and ATSU
202?: 1st deployment with a few select
airlines
202?: Full deployment for all airlines.

- **ARINC Project Initiation Process**
 1. Document the end-to-end system requirements that are being levied by ICAO /CAA's..
 2. Develop candidate architectures that would meet these system-level requirements
 3. Choose an architecture(s) in which to develop detailed equipment and aircraft installation requirements, as well as ground system requirements

- **Autonomous Distress Tracking (ADT)**
 - ARINC Report 680
 - Published May 2019
 - ELT(DT), Iridium, Inmarsat, and ADS-B
 - **Possibly restart the committee 2021 for a Report Update**

- **Timely Recovery of Flight Data (TRFD)**
 - ARINC Report 681
 - Auto Deployable Flight Data Recorder with ELT (ADFDR)
 - Flight Data Streaming : Continuous or event triggered.
 - Active Editing of Report
 - Publish 2Q 2021

FAA



- FAA TSO-C126c issued March 2019
 - In effect September 2020
 - Change 1 implicit since it was for errata and clarifications.
- FAA Advisory Circular AC 91-44B Install Procedures for ELTs
 - Standard AC format is to provide an acceptable means to show compliance with a CFR 91.207
 - Extensive information related to ELT systems to aid the industry and hopefully reduce the number of false alarms and systems not working when needed.
 - Input from NOAA Aviation Team of Experts.
 - AC Sections include: Background, ELT System Overview, Design and Manufacturing Considerations, Purchasing considerations, Installation Considerations, Operational Considerations, Maintenance Considerations, Storage and Disposal Considerations, and Documents and Acronyms
 - Expected 2021
- House Resolution 302, Section 305
 - Assess data access and retrieval systems of Part 121, ETOPS capable aircraft (Commercial Aircraft)
 - Examine various methods for improving detection and retrieval of flight data, including ULDs (37.5Khz), LF ULD (8.8KHz), battery life for ULDs and ULBs, ADFR, ELTs, triggered transmission of Flt Data and other satellite-based solutions, Distress Tracking, and protections against disabling flight recorder systems

- EASA ETSO-C126C was issued 3Q 2020

- CAT.GEN.MPA.210 Location of Aircraft in Distress

“The following aeroplanes shall be equipped with robust and automatic means to accurately determine, following an accident where the aeroplane is severely damaged, the location of the **point of end of flight**:

MCTOM >27000kg, 19 people
MCTOM > 45000kg

New Aircraft CofA Mandate January 1, **2023**

- AMC/GM – Acceptable Means of Compliance and Guidance Material

Notice of Public Announcement (NPA) Draft
Issued in June 2019

Purpose: to establish a simplified certification basis that will permit EASA to issue airworthiness approvals of aircraft type (or changes to aircraft types) intending to comply with CAT.GEN.MPA.210.

- ELT(DT) Concerns

Nuisance Alert Considered a MAJOR failure classitions : **DESIGN ASSURANCE LEVEL C.**

For an ELT(DT) with crash survivability (C), a temperature classification of **Class 0 or 1** is stated.

Alternative compliance methods include an ELT(DT) (without crash survivability and Class 0,1, or 2) and a conventional ELT(AF)(AP) at **Class 0 or 1**.

- **2Q2020:**

Open Solicitation of Comments
Extended for Covid

- **Today :**

Only ~800 comments left for disposition

ICAO ELT / GADSS UPDATE



- Amendment 40-A to Annex 6 — Operation of Aircraft, Part I — 2 March 2016, with an applicability date of 10 November 2016. Included in this amendment were provisions (paragraph 6.18) related to location of an aeroplane in distress, requiring specified aeroplanes, as of **1 January 2021**, to **autonomously transmit information from which a position can be determined, when in distress.**
- ICAO consulted States and industry to determine their readiness to apply these provisions, in State Letter AN 11/1.1.29 – 19/78. This consultation resulted in the ICAO Council extending the future equipage date in the Standards to **1 January 2023.**
- ICAO opened a tender process for development and maintenance of the location of an aircraft in distress repository (LADR). Snowflake Software (UK) was awarded the tender for a web-based solution to ensure that position information of aircraft in distress can be made available to the appropriate organizations.
- PANS-OPS include air operator provisions supporting the implementation of the GADSS concept by establishing requirements for operators to develop procedures to:
 - monitor the aircraft tracking systems in use for their aircraft;
 - respond to any information received from such tracking systems in an appropriate manner; and
 - require that information received from an ADT system be forwarded to the LADR.

INDUSTRY VIEW

- **When Can a FGB ELT(DT) be certified on an aircraft?**
 - TSO-C126c Issued
 -Requires Cospas Sarsat full TAC
 - Not test protocol
 - Not geographically restricted
- **When Can a SGB ELT(DT) be certified on an aircraft?**
 - TSO-C126c Issued
 -Requires Cospas Sarsat full TAC
- **C/S JC-34**
 - Paper 8/03 Updates to Beacon Implementation Plan
 - SGB Beacons on the Market – Sometime in 2022
 - Previous Target Date Sept 2018-2019
 - ELT(DT) - At least 6 papers on ELT(DT) proposing changes.



COMMERCIAL AIRCRAFT CORPORATION OF CHINA
(COMAC)

There is still a Need for Achievable Schedules and Milestones !!



THANK YOU!