

TERMS OF REFERENCE
Special Committee (SC) 234
Portable Electronic Devices (PEDs)
(Version 4)

REQUESTOR:

Organization	Person
FAA Associate Administrator for Aviation Safety	Ms. Peggy Gilligan

SC LEADERSHIP:

Position	Name	Affiliation	Telephone	email	Change
Chair	Jamie Lutkus	Astronics	847.821.3000x831	Jamie.Lutkus@astronics.com	Billy Martin
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Secretary	TBD				

BACKGROUND:

On January 7, 2013, the Administrator of the FAA established the PED Aviation Rulemaking Committee (ARC) to provide a forum for the U.S. aviation community and government regulatory groups to review PED policy and guidance. The ARC was tasked to make recommendations to further clarify and provide guidance on allowing additional PED usage without compromising the continued safe operation of the aircraft. The ARC submitted its final report and recommendations to the FAA on September 30, 2013.

Based on the PED ARC recommendations, the FAA published Information for Operators ([InFO 13010](#)) on October 31, 2013, and [InFO 13010SUP](#) on June 9, 2014. These policy documents established the FAA position on expanding passenger PED use on aircraft and provided guidance for operators on how to expand passenger PED use.

Special Committee (SC) 234 (SC-234) and EUROCAE Working Group 99 (WG-99) Portable Electronic Devices developed DO-363/ED-130A, *Guidance for the Development of Portable Electronic Devices (PED) Tolerance for Civil Aircraft*, with publication in December 2016. This included an update to reflect industrial development and industry experience in order to accommodate the demand for the continuous use of PEDs on board aircraft and superseded DO-294C. Change 1 of DO-363/ED-130A was released in March 2019 to clarify the intent of low powered technologies section.

September 16, 2021

SC-234 and WG-99 also developed DO-307A/ED-239, *Aircraft Design and Certification for Portable Electronic Device (PED) Tolerance*, with publication in December 2016. This release revised specific requirements to be consistent with the existing high intensity radiated fields (HIRF) requirements and to incorporate industry lessons learned.

The DO-307A/ED-239 and the DO-363/ED-130A have been developed to ensure PED tolerance demonstration of aircraft independently from non-aviation PED radio communication standards.

The expansion in additional spectrum ranges of WiFi 6E adds support for 6 GHz wireless spectrum up to 7.125 GHz. The 5th generation cellular mobile network also known as 5G expands spectrum close to the radio altimeter spectrum. Applicants using the guidance material for PED tolerance may find today's documentation ambiguous regarding the spectrum expansions, because both spectrum allocations are not yet explicitly named. The DO-363/ED-130A aircraft PED tolerance demonstration will need to include spectrum up to 7 GHz demonstrations for Wi-Fi 6E PED tolerance clearance on non-HIRF legacy aircraft. The 5G spectrum expansion causes a need to clarify the interference path loss demonstration on aircraft as per DO-307A/ED-239, table 4.7.

Technically, both changes are expected to have little to no impact on existing PED tolerance demonstrations, because HIRF safely covers the frequency range up to 8 GHz, and the path loss of large transport aircraft cabin to the radio altimeter is known to be very large.

In this respect, the documents need an update in order for them to remain unambiguous guidance material.

DELIVERABLES:

Product	Description	FRAC Completion Due Date*	Change
Updated DO-363 / ED-130A	Analysis/evaluation of WIFI 6E spectrum expansion for testing non-HIRF legacy aircraft and primarily through update of section 6.3.2, table 6-4 "frequency range for full PED tolerant aircraft"	April 2022	
Updated DO-307A / ED-239	Clarification of radio altimeter IPL requirements, primarily through update of table 4-7 "target IPL by receiver"	April 2022	

*Note: Final Review and Comment (FRAC) Completion Due Date refers to the date that the committee plenary approves the document after completing the FRAC Process. SCs should submit the final document at least 45 days before the Program Management Committee (PMC) meeting

where it will be considered for approval.

SCOPE and COORDINATION:

SC-234 activity will be joint with WG-99 to ensure interoperable policy as it relates to expanding passenger PED use on aircraft.

SC-234/WG-99 is scoped to ensure PED effects on aircraft systems do not result in unsafe operating conditions on existing and newly designed aircraft. As for any new aircraft systems with safety critical functions, we continue to take credit for HIRF certification data on those safety critical systems required by regulation. This covers the backdoor coupling concern, especially for partial / non-HIRF aircraft because the changed product rule and certification basis for this new system must address HIRF testing. For the front door interference path loss (IPL) concern, if a system failure is catastrophic, then we would need to revise DO-307A/ED-239, section 4 to address that new system PED tolerance requirements, otherwise we would default to operational mitigations (e.g., turn off XYZ transmitter).

Additional coordination is recommended with SC-239 and WG-119 Low Range Radar Altimeter.

ENVISIONED USE OF DELIVERABLE

The updates will document the analysis of 6GHz WIFI operating frequencies and output power levels with focus to a very specific change to a targeted set of aircraft (non-HIRF and partial HIRF certified aircraft) and 5G potential impacts on aircraft systems. The updates will make appropriate clarifications to documents DO-307A/ED-239 and DO-363 Change 1/ED-130A Change 1. It is crucial to establish and maintain a close link between SC-239 on the RA 5G issue and SC-234 on the update of PED tolerance needs.

The FAA plans to implement these guidance documents as editorial updates to advisory circulars (AC) 20-164A to incorporate DO-307A/ED-239 changes and AC 91.21-1D to incorporate DO-363/ED-130A changes.

SPECIFIC GUIDANCE:

EUROCAE Coordination – This a joint RTCA/EUROCAE committee.

Initial Documentation

Documents	Intended Use
RTCA DO-307A / EUROCAE ED-239	Review and use as information
RTCA DO-363 C1 / EUROCAE ED-130A C1	Review and use as information

TERMINATION:

When the scope of this Terms of Reference is complete, the committee will recommend to the PMC that the committee will Sunset, go into Active Monitoring Mode, or spend a period of time in Hiatus. Any change/extension of the committee's work program requires prior PMC approval.