

TERMS OF REFERENCE
Special Committee (SC) 243
Airborne Electronic Hardware (AEH) Development Assurance
Initial

Commented [CEB1]: The more recent term is "Development Assurance"

ORIGINAL REQUESTOR(S):

Organization	Person
EUROCAE	Anna von Groote, Director General

SC LEADERSHIP:

Position	Name	Affiliation	Telephone	email	Change
Chair(s)	Karen Brack	Boeing	425-234-4926	Karen.g.brack2@boeing.com	New
Government Authorized Representative	Brenda Ocker	FAA	847-294-7126	Brenda.s.ocker@faa.gov	New
Secretary	Kelly Kinnard	Joby Aviation	602-524-7157	Kelly.Kinnard@jobyaviation.com	New

BACKGROUND:

In April 2000, DO-254/ED-80 "Design Assurance Guidance for Airborne Electronic Hardware" was published. DO-254/ED-80 was jointly prepared by RTCA SC-180 and EUROCAE Working Group (WG) 46. In January 2024, EUROCAE established a Terms of Reference (ToR) to stand up a new WG-128 to explore and identify potential updates to DO-254/ED-80 and to propose a strategy for such updates. Given that DO-254/ED-80 is a technically equivalent standard published by both RTCA and EUROCAE, the establishment of WG-128 would benefit from being a joint effort with RTCA.

DO-254/ED-80 has been widely used and has proven to be effective as guidance for Airborne Electronic Hardware (AEH) certification. It is recognized as an Acceptable Means of Compliance by Airworthiness Authorities (FAA via AC 20-152A and EASA via AMC 20-152A) and has been used for a large number of projects, providing a process-oriented framework, and associated

recognized guidance for multiple topics/activities such as requirement-based verification, safety, and development assurance approaches.

During its application on certified programs, jointly with A(M)C 20-152A, several improvements, clarifications or complements to the DO-254/ED-80 standard have been raised by both Authorities and industry that would be useful to record as potential updates. It is also important to recognize that maintaining the harmonization of certification requirements and guidance material among Authorities is expected by industry members.

In addition, as Airborne Electronic Hardware (AEH) technology is evolving quickly, some topics of the original DO-254/ED-80 may need to be clarified or updated or may even need additional guidance (e.g., model-based development).

DELIVERABLES:

Product	Description	FRAC Completion Due Date*	Change
Internal Report for the Program Management Committee	Strategy for updating DO-254/ED-80 Design Assurance Guidance for Airborne Electronic Hardware	September 2024**	New

*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 PMC meeting where it will be considered for approval.

** As an internal report, the report will be distributed to SC-243/WG-128 committee membership and the Program Management Committee members. Further, internal reports are not subject to the Final Review and Comment Process.

SCOPE and COORDINATION:

Prepare an Internal Report to clarify the scope of changes to DO-254/ED-80 and to propose a strategy to update DO-254/ED-80.

ENVISIONED USE OF DELIVERABLE(S)

The Internal Report will be used by the Program Management Committee and EUROCAE Technical Advisory Committee to scope either additional reports, updates to DO-254/ED-80 and/or additional technical standards to be produced by SC-243/WG-128.

SPECIFIC GUIDANCE:

SC-243 is directed to operate as a joint committee with EUROCAE WG-128.

The committee is directed to coordinate with the following internal and external groups:

- *SC-240/WG-117 Aviation Software Standards*
- *DO-254 User's Group*
- *Initial Documentation - if applicable, list any input documents that will be made available to this committee to include the source of documents and purpose.*

Documents	Intended Use
DO-254/ED-80	Baseline document
ARP4754B/ED-79B Guidelines for Development of Civil Aircraft and Systems	Input for defining the boundaries between system-level processes and AEH processes
CAST Paper-31 – Technical clarifications Identified for RTCA DO-254 / EUROCAE ED-80	Input to identify potential updates
CAST paper 33 - Compliance to RTCA DO-254/ EUROCAE ED-80, “Design Assurance Guidance for Airborne Electronic Hardware”, for COTS Intellectual Property Used in Programmable Logic Devices and Application Specific Integrated Circuits	Input to identify potential updates
AC 20-152A Development Assurance for Airborne Electronic Hardware	Input to identify potential updates
AC 20-189 Management of Open Problem Reports (OPRs)	Input to identify potential updates
ARP7495 Methods to Address Specific Issues Related to COTS Electronic Components in Airborne Electronic Hardware	Input to identify potential updates
AC 00-72 Best Practices for Airborne Electronic Hardware Design Assurance Using EUROCAE ED-80() and RTCA DO-254() AC 00-71 Best Practices for Management of Open Problem Reports (OPRs)	Input from industry experience with these documents
AC/AMC 20-193 Use of Multi-Core Processors	Input to identify potential updates

TERMINATION: At the completion of the initial Internal Report for the group, the group is asked to suggest to the Program Management Committee whether new deliverables should be developed, if the group should enter an Active Monitoring state, or the group should be sunset.