

TERMS OF REFERENCE
Special Committee (SC) 244
Take-off Performance Monitoring System Strategy
Revision 1

SC LEADERSHIP:

| Position | Name | Affiliation | Telephone | email | Change |
|---|-----------------------|--------------------|-----------------------|--------------------------------------|----------------|
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BACKGROUND:

EUROCAE Working Group (WG) 129, in joint collaboration with RTCA Special Committee (SC) 244, has produced an Internal Report which describes the current technologies available to support Take-Off Performance Awareness and Alerting Systems (TOPAAS). Issue: The UK CAA received a safety recommendation from a UK Air Accidents Investigation Branch (AAIB) Serious Incident Report (AAIB-27895) relating to a take-off performance issue.

The Serious Incident Report concludes that a UK registered aircraft took off from a runway with insufficient power selected and, although the aircraft became airborne, it used up much more of the runway length than intended. Fortunately, there was sufficient runway to enable the aircraft to reach its rotation speed and lift off. During the climb out, the crew realized their mistake and applied full power. A total of 32 similar events occurred during 2017-2022 and AAIB identified these events in Appendix A of the UK AAIB Serious Incident Report.

To facilitate the introduction of a TOPAAS System, a minimum operational performance standard (MOPS) is required. These standards are essential for certification authorities to establish equipment standards (FAA TSO/E-TSO/UK TSO) and certification guidelines. The Internal Report highlights the growing technology capabilities but emphasizes a critical gap in existing policy and standards. The SAE AS8044A document is a historical document which does not bear relevance to today's 'modern' aircraft and systems. It re-affirms the requirement to produce a MOPS/MASPS document which reflects the technical advances available today.

PRODUCT DELIVERABLES:

| Product | Description | FRAC Completion Due Date* | Projected Publication Date** | Change |
|---|---|--|---|---------------|
| DO-XXX: MOPS for a Take Off Performance Awareness and Alerting Systems | This MOPS will include equipment standards (EASA ETSO, FAA TSO, UK TSO) and Functional requirements as mentioned in IR-001. | April 2026 | June 2026 | 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.

**Note: Projected Publication Date refers to the date that the item will be approved by the PMC and officially published by RTCA.

SCOPE and COORDINATION:

The MOPS should specify system characteristics and requirements for a Take-Off Performance Awareness and Alerting System that is useful to designers, manufacturers, installers, certification authorities, and users. The following scenarios represent the most common errors affecting take off performance. It should be noted that this list is not exhaustive and should not be used in isolation.

1. Weight values used
2. Center of gravity
3. Flight Management System Speeds
4. Wind conditions
5. Temperature
6. Pitch Trim Setting
7. Flap Setting
8. Take-off position
9. Runway condition
10. Flight Management System Thrust determination
11. Manual thrust lever angle
12. Realtime acceleration

Output of the system

To alert the crew of an issue which could affect the ability of the aircraft to perform a safe take-off.

The Special Committee should work with EUROCAE WG-129, the FAA, and EASA

ENVISIONED USE OF DELIVERABLE(S)

The MOPS could be recognized as Means of Compliance (MOC) within the Aviation Safety Regulations, support Aeronautical Industry (new and novel business development or technology), and addresses an emerging safety issue.

SPECIFIC GUIDANCE:

SC-244 is directed to operate as a joint committee with EUROCAE WG-129.

- *Initial Documentation*

| Documents | Intended Use |
|---|---------------------|
| IR 001 Technology Assessment of Take Off Performance Monitoring (TOPM) Systems to Inform Standards dated 12 December 2024 | Reference |
| Technical Report EUR 047-15 / WG94-16, titled WG-94 Take-off Performance Monitoring (TOPM) Systems Technical Report, dated 05 February 2015 | Reference |
| UK AAIB Serious Incident Report (AAIB-27895) | Reference |
| SAE AS8044A (Takeoff Performance Monitor (TOPM) System, Airplane, Minimum Performance Standard for) | Reference |
| EUROCAE ED-250 (Minimum Operational Performance Standards (MOPS) for a Runway Overrun Awareness and Alerting System) | Reference |
| AC 25-15 (Approval of Flight Management Systems in Transport Category Aircraft) | Reference |
| ANM-111-09-006 (Policy Statement on the Certification of Flight Management Systems (FMS) that Include Takeoff or Approach Reference-Speed Calculations) | Reference |

TERMINATION: When the scope of this Terms of Reference is complete, the committee will recommend to the PMC that the committee 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.