



EUR 323-23 / WG110-35

Saint Denis, 29 August 2023

RTCA Paper No.213-23/SC237-34.

**EUROCAE WG-110 Meeting #18 Calling Notice/ RTCA SC-237 Meeting #16 Calling Notice "Helicopter Terrain Avoidance Warning Systems (HTAWS)"**

<b>Date</b>	<b>23 - 24 August 2023</b> <i>Starting at 09.00 CET on the 1<sup>st</sup> day and ending at 15:00 CET on the second day</i>
<b>Place</b>	<b>EUROCAE</b>
<b>Venue</b>	9-23 rue Paul Lafargue "Le Triangle" building 93200 Saint-Denis France
<b>Hosted by</b>	<b>EUROCAE</b>
<b>Contact</b>	<b>Brandi Teel</b> , Program Director, RTCA (202) 330-0671 or <a href="mailto:bteel@rtca.org">bteel@rtca.org</a> <b>Esther Hoyas</b> , Technical Programme Manager, EUROCAE +33 762061895 or <a href="mailto:esther.hoyas@eurocae.net">esther.hoyas@eurocae.net</a> <b>Contact point at EUROCAE: Esther Hoyas</b> , Technical Programme Manager, EUROCAE +33 762061895 or <a href="mailto:esther.hoyas@eurocae.net">esther.hoyas@eurocae.net</a>

## ATTENDEES:

The following people attended all or part of the meeting, in person or virtually :

Organisation	First name	Last name	Email address
Airbus Helicopters Deutschland GmbH	Dietmar	Kleinitz (DK)	<a href="mailto:dietmar.kleinitz@airbus.com">dietmar.kleinitz@airbus.com</a>
Bell RTCA Chair	Michael	Deer (MD)	<a href="mailto:mdeer@bellflight.com">mdeer@bellflight.com</a>
Collins Aerospace	Philippe	Salmon (PS)	<a href="mailto:philippe.salmon@rockwellcollins.com">philippe.salmon@rockwellcollins.com</a>
EASA	Eric	Bennett (EB)	<a href="mailto:eric.bennett@easa.europa.eu">eric.bennett@easa.europa.eu</a>
EASA	Raffaele	Di Caprio (RDC)	<a href="mailto:raffaele.dicaprio@easa.europa.eu">raffaele.dicaprio@easa.europa.eu</a>
EUROCAE	Anna	Guegan	<a href="mailto:anna.guegan@eurocae.net">anna.guegan@eurocae.net</a>
EUROCAE	Javier	Diana (JD)	<a href="mailto:Javier.diana@eurocae.net">Javier.diana@eurocae.net</a>
FAA	Rich	Adler (RA)	<a href="mailto:Richard.Adler@faa.gov">Richard.Adler@faa.gov</a>
Garmin	Duncan	Macklin (DM)	<a href="mailto:Duncan.macklin@garmin.com">Duncan.macklin@garmin.com</a>
Honeywell EUROCAE Chair	Yasuo	Ishihara (YI)	<a href="mailto:yasuo.ishihara@honeywell.com">yasuo.ishihara@honeywell.com</a>
Leonardo	Luca	Savino (LS)	<a href="mailto:luca.savino@leonardocompany.com">luca.savino@leonardocompany.com</a>
RTCA	Brandi	Teel (BT)	<a href="mailto:bteel@rtca.org">bteel@rtca.org</a>
Sikorsky	Steve	Schellberg (SS)	<a href="mailto:steve.schellberg@lmco.com">steve.schellberg@lmco.com</a>
UK CAA	Dave	Howson (DH)	<a href="mailto:dave.howson@caa.co.uk">dave.howson@caa.co.uk</a>
UK CAA EUROCAE Secretary	Mark	Prior (MP)	<a href="mailto:mark@mpriorconsulting.com">mark@mpriorconsulting.com</a>

## **1 Introductions**

Yasuo Ishihara (YI) and Mike Deer (MD) welcomed everyone to the meeting.

## **2 Administrative Remarks/EUROCAE and RTCA Policy**

Javier Diana (JD) and Brandi Teel (BT) presented the mandatory slides which explained the obligation of members and covered administrative aspects of the meeting.

## **3 Acceptance of Previous Meeting Minutes**

The Minutes from Meeting 17 were accepted.

## **4 Review of Action Item**

The following action was open at the end of the last meeting.

Action Reference	Action	By Whom	By Date
17.1	All to review DO-309 prior to the next meeting for potential improvements.	All	Next meeting

Action 17.1 was closed.

Note: The following Minutes are recorded by topic and not necessarily in a chronological order.

## **5 Consolidated EUROCAE/RTCA MOPS Comments**

MD shared the consolidated EUROCAE/RTCA comment review document (CRD). The CRD contained 53 comments submitted by interested parties. For each item, the party submitting the remark could propose a means of resolving their comment. Finally, the document contained a note on how the Working Group/Special Committee proposed to resolve each comment. The CRD is attached to these Minutes as a record of resolution.

## 5.1 Non-Concur Items

There were 2 Non-Concur (NC) comments submitted by Airbus. A NC is a refusal or failure to concur with the contents of the document. The written NCs related to Airbus concerns that the MOPS did not address all potential helicopter operations, and so MOPS compliant equipment might have an increased nuisance alert rate for certain operations, such as utility and parapublic flights. Airbus would prefer a single set of envelopes, particularly Mode 1, that addressed all potential types of operations.

Dietmar Kleinitz (DK), representing Airbus, was reminded that the Group had previously stated that some types of onshore operations, such as utility and SAR were outside the scope of the MOPS. He was reminded that a single envelope, with a satisfactory nuisance alert rate for all operations, would not issue alerts in a timely manner for most operations. The envelopes detailed in the MOPS were the result of considerable work by industry experts, using flight and accident data where available. More dynamic operations, such as utility and SAR will require reduced envelopes. A Reduced Protection Mode (analogous to Low Alt in the FLTA Mode) is detailed in the MOPS for this purpose. It will allow certain flight profiles to be protected against a high nuisance alert rate by desensitising the alert envelope(s), albeit at the expense of a shorter alert time.

It will be the Operational Regulations that will mandate HTAWS for any type of operation, and it is extremely unlikely that the Regulators will require installing HTAWS for specific missions where it is not suitable, such as utility operations: the 3 Regulators present confirmed this.

DK undertook to discuss the issue with his colleagues and return to the Group the next day. Due to the lack of availability of his colleagues, DK was not able to resolve the issue on 24 August, so a meeting with Airbus is scheduled for 7 September 2023.

**[post meeting note: BT issued an invitation for interested parties to meet virtually – 7 September 2023. This meeting is reported in Appendix 1]**

If the Airbus NCs cannot be resolved on 7 September 2023, the dissenting procedure will be invoked.

## **5.2 Other Comments**

The remaining 51 comments were reviewed. Each comment was considered in turn and a note made on how the Group intended to resolve each Comment.

## **6 DO-309**

The Group's TORs include making recommendations on how DO-309 could be updated or improved. Previously, the FAA had expressed opposition to reopening the DO-309 MOPS. RA clarified the FAA's position and stated that there was now no opposition in principle, providing any recommendations did not include adding the Classic Modes to the FLTA Mode. It was agreed that the FLTA and Classic Modes MOPS would remain discrete documents.

A discussion followed where some key issues were identified that would be part of an update to DO-309. These included:

- Terrain database and obstacle database accuracy requirements.
- Incorporating lateral manoeuvres as an optional function.
- Database update frequency requirement.
- Permit a Reduced Protection Mode to be activated by the aircraft system (similar to the Classic Modes in the Onshore HTAWS MOPS).
- Evaluation of the FLTA envelope size (warning times). This will require the use of FDM and accident data to optimise the envelope(s).
- Add landing exclusion for 100ft level off during descent requirements.
- Add scenarios to bound the maximum size envelopes to reduce nuisance alerts.

Further work on DO-309 will be discussed at the next plenary meeting.

## **7 Next Meeting**

There will be a meeting with Airbus on 7 September 2023 to discuss their NCs.

The next plenary meeting will be held on 10 October 2023 to finalise the MOPS and discuss any further work required.

[BT issued an invitation for the plenary meeting – 10 October 2023]

## **8 AOB**

DH gave a short presentation on a recent S76 accident where Mode 7 might have warned the crew of a low energy situation. A short discussion followed.

## **9 Close**

The meeting closed at 12.40 CET on 24 August 2023.

Mark Prior

Secretary, SC 237/WG-110

**Appendix 1 to EUROCAE WG-110 Meeting #18 Calling Notice/ RTCA SC-237 Meeting  
#16 Calling Notice “Helicopter Terrain Avoidance Warning Systems (HTAWS)”**

As agreed during the Plenary, a supplementary meeting was held for Airbus Helicopters to provide a response to their action item to revisit their two non-concur comments.

**ATTENDEES:**

The following people attended all or part of the meeting, in person or virtually :

Organisation	First name	Last name	Email address
Airbus Helicopters Deutschland GmbH	Dietmar	Kleinitz (DK)	<a href="mailto:dietmar.kleinitz@airbus.com">dietmar.kleinitz@airbus.com</a>
Bell RTCA Chair	Michael	Deer (MD)	<a href="mailto:mdeer@bellflight.com">mdeer@bellflight.com</a>
Collins Aerospace	Philippe	Salmon (PS)	<a href="mailto:philippe.salmon@rockwellcollins.com">philippe.salmon@rockwellcollins.com</a>
EASA	Eric	Bennett (EB)	<a href="mailto:eric.bennett@easa.europa.eu">eric.bennett@easa.europa.eu</a>
EUROCAE	Esther	Hoyas (EH)	<a href="mailto:esther.hoyas@eurocae.net">esther.hoyas@eurocae.net</a>
FAA	Rich	Adler (RA)	<a href="mailto:Richard.Adler@faa.gov">Richard.Adler@faa.gov</a>
Garmin	Duncan	Macklin (DM)	<a href="mailto:Duncan.macklin@garmin.com">Duncan.macklin@garmin.com</a>
Honeywell EUROCAE Chair	Yasuo	Ishihara (YI)	<a href="mailto:yasuo.ishihara@honeywell.com">yasuo.ishihara@honeywell.com</a>
Leonardo	Luca	Savino (LS)	<a href="mailto:luca.savino@leonardocompany.com">luca.savino@leonardocompany.com</a>
RTCA	Brandi	Teel (BT)	<a href="mailto:bteel@rtca.org">bteel@rtca.org</a>
Sikorsky	Steve	Schellberg (SS)	<a href="mailto:steve.schellberg@lmco.com">steve.schellberg@lmco.com</a>
UK CAA	Dave	Howson (DH)	<a href="mailto:dave.howson@caa.co.uk">dave.howson@caa.co.uk</a>
UK CAA Secretary	Mark	Prior (MP)	<a href="mailto:mark@mpriorconsulting.com">mark@mpriorconsulting.com</a>

## **Introduction**

Mike Deer(MD) and Yasuo Ishihara(YI) welcomed everyone to the meeting. The meeting was issue specific, to discuss the two Non-Concur comments raised by Airbus Helicopters: Comments 36 and 37 on the OC WG-110 ED-316 Consolidated Comment Form.

## **Airbus Helicopters (AH) Position**

AH representative, Dietmar Kleinitz(DK), provided an update on the AH position. His explanation was supported by a series of PowerPoint slides that were shared with the group post meeting.

DK stated the Onshore HTAWS MOPS (ED-316) will be relevant for all AH helicopters and customers. He expressed a concern that some operators used their helicopters for different operational roles, and so the MOPS should cover all those roles. Members of the group stated that the MOPS were aimed at specific roles, such as corporate and HEMS users, not utility and SAR operators.

DK expressed a further concern that Onshore HTAWS would be mandated in the Operational Regulations by EASA under RMT 0708, the FAA and CAA. AH would like Onshore HTAWS to be optional, with the potential for some of the safety functions to be addressed by other aircraft systems. Finally, he stated the HELIONIX Mode 1 was not compliant with the MOPS and there would be a considerable development effort to render it compliant.

At the end of his comments, DK stated that AH was prepared to downgrade their Non-Concurs for Comments 36 and 37 to High but want reassurances that future changes to the MOPS could be made if there were issues with the Mode 1 envelope and wanted to understand the timeline for EASAs RMT.0708.



The EASA (EB), FAA (RA) and CAA (DH) representatives stated that they had no immediate plans to implement Onshore HTAWS. In the future if it was to be mandated, it would only be for specific missions and following a further analysis on the safety benefits. EB stated that EASA RMT 0708<sup>1</sup> will only address specific missions, as shown in its TORs: *“Based on the preliminary cost-effectiveness analysis, HTAWSs are not to be considered for the following operations: non-commercial operations with other than complex motor-powered aircraft (NCO), specialised operations (SPO), and commercial air transport (CAT) with small helicopters in visual flight rules (VFR) operations (night and day).”*

For helicopters used on multiple mission profiles, YI reminded the meeting that the Reduce Protection Mode was available to desensitize the system if the nuisance alert rate was likely to be unacceptable.

### **Further Discussions**

It was agreed that the Onshore HTAWS envelopes should be reviewed and updated as operational data and feedback became available. RA gave an example in fixed wing TAWS where the FLTA floor had been reduced from 700ft to 500ft due to operator feedback. DH repeated that objective sources of data should be used, such as Flight Data Monitoring, to refine the envelopes.

YI noted that the current EGPWS MKXXII Mode 1 was rarely triggered. The current high nuisance alert rate reported by operators was likely to be caused by the DO 309 FLTA Mode.

### **Action 18A.1**

**Airbus (DK) to write to EUROCAE and RTCA to state that their Non-Concur comments for #36 and #37 have been changed from Non-Concur to High.**

**Time: by 30 September 2023.**

---

<sup>1</sup> <https://www.easa.europa.eu/en/document-library/terms-of-reference-and-rulemaking-group-9-positions/tor-rmt0708>

## Next Steps

Following the AH change to Comments 36 and 37, it was confirmed that no changes were required to the draft MOPS and the comment was dispositioned based on the above discussion.

It was agreed that the next plenary meeting on 10 October 2023 would aim to agree the final version of the MOPS. It could then be sent to Council and PMC.

YI thanked everybody for attending the meeting, and DK in particular for helping to resolve this complex issue.

## Action

Action Reference	Action	By Whom	By Date
18A.1	Write to EUROCAE and RTCA to state that their Non-Concur comments for #36 and #37 have been changed from Non-Concur to High.	Airbus Helicopters (Dietmar Kelinitz)	30 September 2023

Mark Prior

Secretary, SC 237/WG-110