European Union Aviation Safety Agency

Comment Response Document (CRD) to Special Condition CPTS-0000336 - issue 01 on Rotatating Antenna

1. Summary of the outcome of the consultation

A total of 13 comments have been collected on the proposed Special Condition. 5 comments have been accepted, 4 noted, 3 not accepted and the remaining one has been partially accepted. Most of the comments are from the industry.

The most commented issue was the reference in the SC to the Cert-Memo CM-S-013 that is not yet finalized, but for consultation only.

2. CRD table of comments, responses and resulting text

In responding to the comments, the following terminology is applied to attest EASA's position:

(a) **Accepted** — it means that EASA agrees with the comment and any proposed change is incorporated into the text

(b) **Partially accepted** — it means that EASA either partially agrees with the comment or agrees with it but the proposed change is partially incorporated into the text

(c) **Noted** — EASA acknowledges the comment, but no change to the text is considered necessary

(d) **Not accepted** — EASA does not agree with the comment or proposed change and the text will not be changed

IV. CRD table of comments, responses and resulting text

(General Comments)	-

comment	*1* comment by: *The Boeing Company* Attachment #1
response	Noted.

comment	*6* comment by: *The Boeing Company* This Proposed Special Condition refers to the Proposed Certification Memo CM-S-013 as Advisory Material. Boeing's position is that incorporation of proposed and unresolved advisory material as guidance for compliance is unsuitable.
response	Accepted. References to the proposed Cert-Memo CM-S-013 will be deleted.

comment	*7* comment by: *FOCA (Switzerland)* Thank you for the opportunity to comment. We would like to thank you for the work that has been done and will continue to follow the project. For the moment, we have no comments to add.

response	Noted. Thank you for your support.

comment	*9* comment by: *Airbus-Regulations-SRg* General Comment: Airbus Commercial Aircraft is pleased to participate in the commenting task on proposed Special Condition CPTS-0000336. Our matter experts and specialists have carefully reviewed this proposal. Our comments are allocated to the position within the CRT. Administrative notes : Airbus Documents classification : Not applicable Airbus Export Control classification : Not technical
response	Noted.

comment	*14* comment by: *LBA Germany* LBA has no comments.
response	Noted.

SUBJECT p. 1

comment *2* comment by: *The Boeing Company*

COMMENT #1 of 4			
Type of comment (check one)	***Non-Concur***	***Substantive*** ***X***	***Editorial***
Affected paragraph and page number	Page: 1 Paragraph: *REQUIREMENTS incl. Amdt.*		
What is your concern and what do you want changed in this paragraph?	**THE PROPOSED TEXT STATES:** "CS 25.251, CS 25.301, CS 25.302, CS 25.303, CS 25.305, CS 25.307, CS 25.561, CS 25.563, CS 25.571, CS 25.629, CS 25.631, CS 25.671, CS 25.901, CS 25.1309 and Appendix K amdt. 27" **REQUESTED CHANGE:** Delete CS 25.671 and CS 25.901 from the list of requirements: "CS 25.251, CS 25.301, CS 25.302, CS 25.303, CS 25.305, CS 25.307, CS 25.561, CS 25.563, CS		

	25.571, CS 25.629, CS 25.631, ~~CS 25.671,~~ ~~CS 25.901,~~ CS 25.1309 and Appendix K amdt. 27"
Why is your suggested change justified?	**JUSTIFICATION:** Antennae are not a "control system", "flight control system", or "powerplant" (installation or system), so while principles from CS 25.671 and CS 25.901 may be relevant, those actual regulations don't apply and should not be included as requirements.

response

Accepted.
The list of requirements has been consolidated. See response to Comment # 11.

comment

10 comment by: *Airbus-Regulations-SRg*

Cover Page, Advisory Material

Airbus Comment:
The section "ADVISORY MATERIAL" shall not be referring to a draft version of a certification memorandum.
Please remove the reference to proposed CM-S-013 Issue 01 from this proposal.
RATIONALE:
Final CM-S-013 Issue 01 is not yet published

response

Accepted.
The references to the proposed Cert-Memo CM-S-013 will be deleted.

comment

11 comment by: *Airbus-Regulations-SRg*

Cover Page, List of affected requirements

Airbus Comment:
The following regulations are not part of this consolation:
CS 25.301, CS 25.305, CS 25.307, CS 25.365, CS 25.561, CS 25.563, CS 25.571, CS 25.629,
CS 25.631, CS 25.671, CS 25.734, CS 25.901, CS 25.1309
Please remove non discussed requirements from the listing of affected requirements

RATIONALE:
For clarification & to ease reading

response

Partially accepted.
The following requirements will be removed: CS 25.671, CS 25.901, CS 25.1309.
The other requirements, although not specifically referenced, are called out by the text of the Special Condition.

1. APPLICABILITY p. 3

Comment 3 comment by: *The Boeing Company*

COMMENT #2 of 4			
Type of comment (check one)	***Non-Concur***	***Substantive***	***Editorial*** X
Affected paragraph and page number	Page: 3 Paragraph: *Applicability*		
What is your concern and what do you want changed in this paragraph?	**THE PROPOSED TEXT STATES:** This SC is applicable to CS 25 aeroplanes with a high speed or high energy rotating antenna installation. **REQUESTED CHANGE:** *Clarify what constitutes a "high speed or high energy rotating antenna installation."*		
Why is your suggested change justified?	**JUSTIFICATION:** The applicability of the proposed special condition is not clear from the general description. Systems Engineering Unit Members (E-UMs) are unclear of whether these terms refer to functional power or mechanical kinetic energy power.		

response Accepted.
The intention is to cover antennas with high speed or high mechanical kinetic energy. Clarification will be added regarding applicability of the Special Condition.

2. SPECIAL CONDITION p. 3

comment 4 comment by: *The Boeing Company*

COMMENT #3 of 4			
Type of comment (check one)	***Non-Concur***	***Substantive***	***Editorial*** X
Affected paragraph and page number	Page: 3 Paragraph: *2.*		
What is your concern and what do you want changed in this paragraph?	**THE PROPOSED TEXT STATES:** Note, proposed Cert-Memo CM-S-013 Issue 01 "Installation of Antennas on Large Aeroplanes (CS-25)" provides general guidance regarding the installation of the antennas, including antennas installed under a composite radome. **REQUESTED CHANGE:** Remove reference to proposed guidance.		

Why is your suggested change justified?	**<u>JUSTIFICATION</u>:** The proposed Cert-Memo for large antennas is largely consistent with the FAA policy for antennas; however, there are notable differences that have not reconciled and that are key to promote consistency in the guidance material.

response

Accepted.
The references to the proposed Cert-Memo CM-S-013 will be deleted.

comment

5 comment by: *The Boeing Company*

COMMENT #4 of 4			
Type of comment (check one)	***Non-Concur***	***Substantive*** ***X***	***Editorial***
Affected paragraph and page number	Page: 4 Paragraph: *2. (2) a)*		
What is your concern and what do you want changed in this paragraph?	**<u>THE PROPOSED TEXT STATES</u>:** The evaluation shall cover static strength, fatigue and damage tolerance, freedom from aeroelastic instability, vibration, the effects of aircraft handling, and loads including gyroscopic effects. **<u>REQUESTED CHANGE</u>:** *The evaluation shall cover static strength, fatigue and damage tolerance* ***of supporting principal structural elements****, freedom from aeroelastic instability, …*		
Why is your suggested change justified?	**<u>JUSTIFICATION</u>:** Antenna installations and components are not typically evaluated for fatigue and damage tolerance (i.e., crack growth). Clarifying that the fatigue and damage tolerance evaluation is applicable to the supporting fuselage structure will be consistent with the guidance provided in FAA Policy Statement PS-ANM-25-17, "Structural Certification Criteria for Antennas, Radomes, and Other External Modifications." Discrete source damage aspects for the antenna installation are adequately addressed by the other requirements defined in paragraphs 2. (2) b), c) d) and paragraph (3).		

response

Not accepted.
The CS 25.571 requirement already specifies applicability. This Special Condition does not intend to modify existing requirements or interpretations of these.

comment	*8* comment by: *Federal Aviation Administration* FAA comment regarding Failure Cases: This Special Condition permits the failure of the antenna to have severe degradation in aircraft level safety than what is allowed for failure of current antenna installations and other high speed rotating equipment on aircraft. The effect of a failed antenna on safety of the aircraft should not exceed the effect of the failure of other high speed rotating components on the aircraft (e.g., air cycle machines, air driven pumps, equipment cooling fans, electric motors). "Continued safe flight and landing" is the lowest level of safety standard, and it should only be acceptable under extreme conditions, as it implies an emergency condition requiring a diversion to the nearest airport. Rotating antenna failure conditions should only have minor, negligible or no effect on the safety of the aircraft.
response	Not accepted. The effect of failure stated in the Special Condition is consistent with CS 25.1461(d). Please note, the focus of this Special Condition is to address structural requirements.

comment	*12* comment by: *Airbus-Regulations-SRg* Page 3, para. 2, number (1) last sentence, quote: "....and any vibration and buffeting loads, acting on the installation, in accordance with CS 25.251 and CS 25 Subpart C" UNQUOTE Airbus Comment: For this regulation the proposed EASA ESF-B25.251-01 has already been commented by Airbus (see ref. X01LS2302383) RATIONALE: Please review the wording in comparison to proposed EASA ESF-B25.251-01.
response	Not accepted. The CS 25.251 requirement is applicable, as referenced in the Special Condition. This Special Condition does not intend to modify existing requirements or interpretations of these.

comment	*13* comment by: *Airbus-Regulations-SRg* Page 3, para. 2, number (2) last part of the sentence, quote: "....in accordance with CS-25 Appendix K, Interaction of System and Structure." UNQUOTE Airbus Commment: The link to the CS25.302 in the text is missing. RATIONALE: The cross-link to the listed "affected regulations" (cover page) should be visible.
response	Accepted.

Text will be updated to “whereas for system failures the safety factor is determined in accordance with **CS25.302 and** CS-25 Appendix K, Interaction of System and Structure.”