



NOTICE OF PROPOSED AMENDMENT (NPA) No 2011-08

DRAFT OPINION OF THE EUROPEAN AVIATION SAFETY AGENCY

for a Commission Regulation amending Regulation (EC) No 216/2008 of the European Parliament and the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC

and

for a Commission Regulation amending Commission Regulation (EC) No 1702/2003 of 24 September 2003 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations ('Part 21'),

and

DRAFT DECISION OF THE EXECUTIVE DIRECTOR OF THE EUROPEAN AVIATION SAFETY AGENCY

amending Decision No 2003/1/RM of the Executive Director of the European Aviation Safety Agency of 17 October 2003 on acceptable means of compliance and guidance material for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisation ('AMC and GM to Part 21'),

DRAFT DECISION OF THE EXECUTIVE DIRECTOR OF THE EUROPEAN AVIATION SAFETY AGENCY

amending Decision No 2003/3/RM of the Executive Director of the European Aviation Safety Agency of 17 October 2003 on certification specifications providing acceptable means of compliance for aircraft engine emissions and fuel venting ('CS-34')

and

DRAFT DECISION OF THE EXECUTIVE DIRECTOR OF THE EUROPEAN AVIATION SAFETY AGENCY

amending Decision No 2003/4/RM of the Executive Director of the European Aviation Safety Agency of 17 October 2003 on certification specifications providing acceptable means of compliance for aircraft noise ('CS-36')

'Implementation of CAEP/8 amendments'

TABLE OF CONTENTS

A.	EXPLANATORY NOTE	3
I.	GENERAL	3
II.	CONSULTATION.....	4
III.	COMMENT RESPONSE DOCUMENT.....	4
IV.	CONTENT OF THE DRAFT OPINION/DECISION.....	4
V.	REGULATORY IMPACT ASSESSMENT.....	9
B.	DRAFT OPINION AND DECISIONS	12
I.	DRAFT OPINION FOR AMENDING THE BASIC REGULATION AND FOR AMENDING COMMISSION REGULATION (EC) No 1702/2003 (PART 21)	12
II.	DRAFT DECISION FOR AMENDING AMC AND GM TO PART 21	16
III.	DRAFT DECISION FOR AMENDING CS-34	23
IV.	DRAFT DECISION FOR AMENDING CS-36	24

A. Explanatory Note

I. General

1. The purpose of this Notice of Proposed Amendment (NPA) is to envisage amending
 - Regulation (EC) No 216/2008¹ (the Basic Regulation);
 - Commission Regulation (EC) No 1702/2003²;
 - Decision No 2003/1/RM of the Executive Director of the European Aviation Safety Agency of 17 October 2003³;
 - Decision No 2003/3/RM of the Executive Director of the European Aviation Safety Agency of 17 October 2003⁴; and
 - Decision No 2003/4/RM of the Executive Director of the European Aviation Safety Agency of 17 October 2003⁵.
2. The scope of this rulemaking activity is outlined in the Terms of Reference (ToR) BR.008, 34.002 and 36.006 and is described in more detail below.
3. The European Aviation Safety Agency (hereinafter referred to as the 'Agency') is directly involved in the rule-shaping process. It assists the Commission in its executive tasks by preparing draft regulations, and amendments thereof, for the implementation of the Basic Regulation which are adopted as 'Opinions' [Article 19(1)]. It also adopts Certification Specifications, Acceptable Means of Compliance and Guidance Material to be used in the certification process [Article 19(2)].
4. When developing rules, the Agency is bound to follow a structured process as required by Article 52(1) of the Basic Regulation. Such process has been adopted by the Agency's Management Board and is referred to as 'The Rulemaking Procedure'⁶.
5. This rulemaking activity is included in the Agency's Rulemaking Programme for 2011–2012. It implements the rulemaking tasks:
 - BR.008 — Implementation of CAEP/8 amendments;

¹ Regulation (EC) No 216/2008 of the European Parliament and the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC (OJ L 79, 19.3.2008, p. 1), as last amended by Regulation (EC) No 1108/2009 (OJ L 309, 24.11.2009, p. 51).

² Commission Regulation (EC) No 1702/2003 of 24 September 2003 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations (Part 21) (OJ L 243, 27.9.2003, p. 6), as last amended by Regulation (EC) No 1194/2009 (OJ L 321, 8.12.2009, p. 5).

³ Decision on acceptable means of compliance and guidance material for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisation (AMC and GM to Part 21).

⁴ Decision on certification specifications providing acceptable means of compliance for aircraft engine emissions and fuel venting (CS-34).

⁵ Decision on certification specifications providing acceptable means of compliance for aircraft noise (CS-36).

⁶ Management Board decision concerning the procedure to be applied by the Agency for the issuing of opinions, certification specifications and guidance material (Rulemaking Procedure), EASA MB 08-2007, 13.6.2007.

- 34.002 — Update of CS-34 to refer to the Environmental Technical Manual on emissions certification as amended after CAEP/8; and
 - 36.006 — Update of CS-36 to refer to the Environmental Technical Manual on noise certification as amended after CAEP/8.
6. The text of this NPA has been developed by the Agency. It is submitted for consultation of all interested parties in accordance with Article 52 of the Basic Regulation and Articles 5(3) and 6 of the Rulemaking Procedure.
 7. The proposed rule has taken into account the development of European Union and international law (ICAO), and the harmonisation with the rules of other authorities of the European Union's main partners as set out in the objectives of Article 2 of the Basic Regulation. The proposed rule:
 - a. is equivalently stringent to ICAO Standards and Recommended Practices; and
 - b. is harmonised via the ICAO/CAEP⁷ process with the rules of FAA and TCCA.

II. Consultation

8. To achieve optimal consultation, the Agency is publishing this NPA on its internet site. Comments should be provided within 3 months in accordance with Article 6(4) of the Rulemaking Procedure. Comments on this proposal should be submitted by one of the following methods:

CRT: Send your comments using the Comment-Response Tool (CRT) available at <http://hub.easa.europa.eu/crt/>.

E-mail: In case the use of CRT is prevented by technical problems these should be reported to the [CRT webmaster](mailto:CRT_webmaster@easa.europa.eu) and comments sent by email to NPA@easa.europa.eu.

Correspondence: If you do not have access to internet or e-mail you can send your comment by mail to:
 Process Support
 Rulemaking Directorate
 EASA
 Postfach 10 12 53
 D-50452 Cologne
 Germany

Comments should be submitted the latest by **16 August 2011**. If received after this deadline they might not be taken into account.

III. Comment response document

9. All comments received in time will be responded to and incorporated in a comment response document (CRD). The CRD will be available on the Agency's website and in the Comment-Response Tool (CRT).

IV. Content of the draft opinion/decision

Amendment 10 to ICAO Annex 16, Volume I

10. Amendment 10 to the International Standards and Recommended Practices, Environmental Protection – Aircraft Noise (Annex 16, Volume I to the Convention on International Civil Aviation) arises from the recommendations of CAEP/8 in February 2010. Amendment 10 was adopted by the ICAO Council at the third

⁷ CAEP: Committee on Aviation Environmental Protection.

meeting of its 192nd Session on 4 March 2011. The ICAO Council prescribed that the amendment will become effective on 18 July 2011, except for any part for which a majority of Contracting States have registered their disapproval. To the extent it becomes effective, Amendment 10 will be applicable on 17 November 2011. Concerning these decisions ICAO Contracting States are notified by an ICAO State Letter.

11. The purpose of Amendment 10 of ICAO Annex 16 Volume I is to address technical issues arising from the application of demonstration schemes and related guidance for aircraft noise certification. The proposals include:
 - a) Amendments to the applicability provisions in order to remove unnecessary complexity, repetition and redundancy in the text while improving clarity and harmonisation amongst different chapters;
 - b) An update in the Annex to the references to ICAO Doc 9501 — Environmental Technical Manual, Volume I — Procedures for the Noise Certification of Aircraft;
 - c) New text in Chapter 3 of Annex 16, Volume I to clarify noise certification take-off reference speed for cases where airworthiness certification take-off speed is not specified;
 - d) Improvements to the readability and clarification of previously vague or incomplete guidance including the calculation of effective perceived noise level (EPNL), the adjustment of aircraft noise data to reference conditions using the simplified and integrated methods, measurement and characterisation of atmospheric sound attenuation, and miscellaneous technical issues and editorial errors; and
 - e) Clarification that the maximum noise levels applicable to subsonic jet aeroplanes may be used as a guideline for supersonic aeroplanes.
12. All proposals for changes in ICAO Annex 16, Volume I are considered stringency neutral (i.e. the proposals for changes do not change the noise limits).

Amendment 7 to ICAO Annex 16, Volume II

13. Amendment 7 to the International Standards and Recommended Practices, Environmental Protection – Aircraft Engine Emissions (Annex 16, Volume II to the Convention on International Civil Aviation) arises from the recommendations of CAEP/8 in February 2010. Amendment 7 was adopted by the ICAO Council at the third meeting of its 192nd Session on 4 March 2011. The ICAO Council prescribed that the amendment will become effective on 18 July 2011, except for any part for which a majority of Contracting States have registered their disapproval. To the extent it becomes effective, Amendment 7 will be applicable on 17 November 2011. Concerning these decisions ICAO Contracting States are notified by an ICAO State Letter.
14. The purpose of the amendment of the SARPs in ICAO Annex 16, Volume II is to update the provisions regarding the stringency of emissions (i.e. increase in stringency of NO_x limits) and to address technical issues arising from the application of demonstration schemes and related guidance for aircraft engine emissions certification. The proposals include:
 - a) The adoption of a new NO_x standard recommended by CAEP/8 to further reduce gaseous emissions, which increases the stringency of NO_x limits compared to the current CAEP/6 standard⁸ between 5 per cent to 15 per cent for small engines and by 15 per cent for large engines with an effective date as of 1 January 2014;

⁸ The CAEP/6 Standard was recommended at the CAEP/6 meeting in February 2004.

- b) An update to the production cut-off provision for engines which do not fulfil the CAEP/6 NO_x standard with an effective date as of 1 January 2013;
- c) Updates to the text to replace 'variations in procedures' by 'equivalent procedures' in order to improve consistency and harmonisation within Annex 16, Volume II and within ICAO Doc 9501 — Environmental Technical Manual, Volume II — Procedures for the Emissions Certification of Aircraft Engines; and
- d) Improvements to the readability by moving some paragraphs to more appropriate places and correcting some typographical and editorial issues.

ICAO Doc 9501 — Environmental Technical Manual, Volume I — Procedures for the Noise Certification of Aircraft

15. ICAO Doc 9501 — Environmental Technical Manual, Volume I — Procedures for the Noise Certification of Aircraft was approved by CAEP/8 in February 2010. The main purpose of the Environmental Technical Manual for noise certification is to make most recent information available to certifying authorities, noise certification applicants and other interested parties in a timely manner, aiming at achieving the highest possible degree of harmonisation in noise certification. The 'new' Environmental Technical Manual has a new structure containing nine chapters as follows:
 - Chapter 1 — Introduction;
 - Chapter 2 — General guidelines;
 - Chapter 3 — Technical procedures applicable to more than one type of aircraft;
 - Chapter 4 — Guidelines for subsonic jet aeroplanes, propeller-driven aeroplanes over 8 618 kg and helicopters;
 - Chapter 5 — Guidelines for propeller-driven aeroplanes not exceeding 8 618 kg;
 - Chapter 6 — Guidelines for helicopters not exceeding 3 175 kg;
 - Chapter 7 — Guidelines for tilt-rotor aircraft;
 - Chapter 8 — Guidelines on flight test windows and adjustment of land-use planning noise data;
 - Chapter 9 — Guidelines for aircraft re-certification.
16. The chapters dealing with specific Appendices of ICAO Annex 16, Volume I (Chapters 4 through 6) and Chapter 8 are each divided into three sections as follows:
 - Explanatory information — to explain the Annex noise standards language in a manner that is consistent with Contracting States' current policies regarding compliance with ICAO Annex 16, Volume I;
 - Equivalent procedures — test or analysis procedures which, while differing from those procedures specified in ICAO Annex 16, Volume I, in the technical judgement of the type certifying authority yield effectively the same noise levels as the specified procedure;
 - Technical procedures — test or analysis procedures, which are not defined in detail in ICAO Annex 16, Volume I, but which type certifying authorities have approved as being acceptable for compliance with the general provisions of ICAO Annex 16, Volume I.

ICAO Doc 9501 — Environmental Technical Manual, Volume II — Procedures for the Emissions Certification of Aircraft Engines

17. ICAO Doc 9501 — Environmental Technical Manual, Volume II — Procedures for the Emissions Certification of Aircraft Engines was approved by CAEP/8 in February 2010. This Environmental Technical Manual provides guidance to certifying authorities and applicants and promotes uniformity in the implementation of ICAO Annex 16, Volume II.
18. Section 1 of the Environmental Technical Manual for emissions certification provides introductory information. Section 2 provides the guidance material, and its structure is a replication of the structure of ICAO Annex 16, Volume II to ensure easy reference between the requirements and the guidance. At this stage Section 2 contains the following information⁹:
 - Part I — Definitions and symbols;
 - Part III, Chapter 2 — Turbojet and turbofan engines intended for propulsion only at subsonic speeds;
 - Part III, Chapter 3 — Turbojet and turbofan engines intended for propulsion at supersonic speeds;
 - Appendix 2 — Smoke emission evaluation;
 - Appendix 3 — Instrumentation and measurement techniques for gaseous emissions;
 - Appendix 4 — Specification for fuel to be used in aircraft turbine engine emission testing.
19. The guidance material in Volume II of ICAO Doc 9501 — Environmental Technical Manual contains, as in Volume I, explanatory information, equivalent procedures and technical procedures.

The NOx production cut-off requirement and the exemption process

20. Amendment 7 to Annex 16, Volume II contains a NOx production cut-off requirement stating that the engines produced on or after the 1 January 2013 have to comply with the NOx stringency level approved at CAEP/6. The CAEP/6 NOx production cut-off requirement provides certainty that non compliant engines will no longer be produced after that date. However, Annex 16, Volume II introduces also the possibility of having exemptions to this requirement allowing for time adjustments to decrease negative economic impacts. The exemption process is described in ICAO Doc 9501 – Environmental Technical Manual, Volume II – Procedures for the Emissions Certification of Aircraft Engines.
21. For the present rulemaking activity the text related to the exemption process from the Environmental Technical Manual, Volume II needed some adaptation in order to fulfil the needs of the Agency's regulation system. Moreover, it was necessary to make some key points binding (e.g. the timeframe in which exemptions can be granted and the limitation of the number of exemptions) in order to ensure that the purpose of the production cut-off requirement is maintained. For this reason the Agency decided not to give direct reference in Book 2 of CS-34 (see below Book 2, GM 34.1(d) of CS-34) to the exemption process as described in the Environmental Technical Manual, Volume II, but to introduce the exemption process at a different regulatory level.
22. Consequently, the text for the draft Opinion and Decisions of this NPA, concerning the production cut-off requirement and the exemption process, suggests the following:

⁹ Further guidance still needs to be developed by ICAO/CAEP.

- Subparagraph (a) to paragraph (1) of Article 6 of the Basic Regulation introduces a transition period of four years after the date on which the engine produced has to comply with the CAEP/6 NOx production cut-off requirement (which is 1 January 2013). During this transition period (1 January 2013 to 31 December 2016) Member States may grant exemptions. The number of exemptions is limited in the case of new engines installed on new aircraft. A register containing the data related to these exemptions has to be established and maintained by the Agency.
- The provisions for the NOx production cut-off requirement requires amending Commission Regulation (EC) No 1702/2003, namely the provisions in Section A of Part 21 (see below the text included in 21A.130 and 21A.165 of Part 21).
- The present NPA also proposes to include in the AMC and GM to Part 21 text from ICAO Doc 9501 — Environmental Technical Manual, Volume II, which is related to the exemption process. However, as mentioned above, this text had to be adjusted to fulfil the needs of the Agency's regulation system. The text describes, among others, the process and the criteria for exemptions and the evaluation process. It also clarifies the different responsibilities of the production organisation, the Competent Authority and the Agency during the exemption process.

Impact on the Agency rules

23. The Basic Regulation defines the essential requirements for environmental protection by referring to ICAO Annex 16. Article 6(2) specifies that when ICAO Annex 16 has been amended, adaptation may be carried out in accordance with the regulatory procedure with scrutiny referred to in Article 65(5) of the same Regulation, to align as appropriate the essential requirements for environmental protection with the related ICAO standards.
24. Amendment 10 to ICAO Annex 16, Volume I, and Amendment 7 to ICAO Annex 16, Volume II, as explained here above, close loopholes and help achieving equal treatment of all applicants. As some of these changes affect the formulation of the requirements themselves there is a need to include these improvements of ICAO Annex 16 in EU law. Such is the purpose of this NPA.
25. The scope of the requirements to be changed, however, is not limited to Article 6 of the Basic Regulation. As described above, the NOx production cut-off requirement and the exemption process require amending Part 21 of Commission Regulation (EC) No 1702/2003, and the AMC and GM to Part 21 as well.
26. The Agency's certification specifications for aircraft engine emissions and fuel venting (CS-34) contain procedures that have been accepted as technical means for demonstrating compliance with the essential requirements for environmental protection specified by Article 6(1) of the Basic Regulation. Concerning CS-34 this NPA proposes to include a reference in Book 2 to the relevant parts, appendices and attachments of ICAO Doc 9501 — Environmental Technical Manual, Volume II — Procedures for the Emissions Certification of Aircraft Engines.
27. The Agency's certification specifications for aircraft noise (CS-36) contain procedures that have been accepted as technical means for demonstrating compliance with the essential requirements for environmental protection specified by Article 6(1) of the Basic Regulation. CS-36 in its Book 2 refers to ICAO Doc 9501 — Environmental Technical Manual, Volume I — Procedures for the Noise Certification of Aircraft, which itself details the means to be used to demonstrate compliance with the certification requirements of ICAO Annex 16, Volume I. This

NPA proposes to take into consideration the new structure of and to update the reference to ICAO Doc 9501 — Environmental Technical Manual, Volume I¹⁰.

28. The envisaged changes to the Basic Regulation, to Commission Regulation (EC) No 1702/2003 (Part 21), to AMC and GM to Part 21, to CS-34 and to CS-36 are shown in Section B (draft Opinion and Decisions).

V. Regulatory Impact Assessment

1. Purpose and Intended Effect

a. Issue which the NPA is intended to address

29. The purpose of this NPA is to change the reference in Article 6(1) of the Basic Regulation to Amendment 10 to ICAO Annex 16 Volume I and to Amendment 7 to ICAO Annex 16 Volume II to the Chicago Convention, and to amend Commission Regulation (EC) No 1702/2003 (Part 21) and its related AMC and GM, as well as CS-34 and CS-36.

b. Scale of the issue

30. The major issue in this regard is the adoption of a new NO_x standard and the update of the production cut-off provision for engines according to the CAEP/6 NO_x standard. Although it is not possible to make a quantified evaluation of the volume of business and the number of persons affected, it can be assumed that the amendments to the Basic Regulation, to Commission Regulation (EC) No 1702/2003 (Part 21), to AMC and GM to Part 21, to CS-34 and to CS-36 do not lead to a major change of today's situation.

c. Brief statement of the objectives of the NPA

31. The intended effect is that the Agency's regulations are in line with the latest ICAO Standards and Recommended Practices and associated guidelines.

2. Options

a. The options identified

32. **Option 1:** Do nothing.
33. **Option 2:** To implement alternative requirements that would provide for an equivalent level of environmental protection.
34. **Option 3:** To adopt the amendments unaltered as agreed in ICAO.

3. Sectors concerned

35. The sectors concerned are mainly manufactures, owners, operators and people affected by aircraft noise and aircraft engine emissions.

4. Impacts

a. All identified impacts

i. Safety

36. No safety impacts are expected from these measures for any of the options.

ii. Economic

¹⁰ It has to be noted that only Chapters 2 through 6 and Chapter 9 of ICAO Doc 9501 — Environmental Technical Manual, Volume I, describe procedures which are within the remit of the Agency. Therefore, only these chapters have to be considered when CS-36 is amended.

37. Economic impacts for the industry can be expected for all options. Concerning Options 1 and 2 it can be stated that any deviation from the measures adopted by ICAO would increase the risk of European products not being acceptable in different parts of the world, with the associated costs that this would bring. Concerning Option 3, the adoption of a new NOx standard and the update to the production cut-off provision for engines, which do not fulfil the CAEP/6 NOx standard, will lead to additional costs for manufacturers and airlines. On the other hand and when compared to Options 1 and 2 (which both deviate from the measures adopted by ICAO), the reduction in administrative burden to the industry brought about by Option 3 (to adopt the measures of ICAO unaltered) is expected to have a positive economic effect.
- iii. Environmental
 38. Option 1 (the 'do nothing' option) would have a negative impact on the environment, while Options 2 and 3 are expected to have a positive effect on the environment. Concerning Option 3, this especially holds for the adoption of a new NOx standard and the update to the production cut-off provision for engines according to the CAEP/6 NOx standard. However, it is also believed that other changes implemented in ICAO Annex 16, Volumes I and II, and in ICAO Doc 9501 — Environmental Technical Manual, Volumes I and II, will have a positive impact on the environment. These changes resolve ambiguities and inconsistencies, provide clarification, provide update to the latest technical developments and introduce technically sound and well-defined specifications.
- iv. Social
 39. No social impacts are expected from the options other than the indirect effect of the mitigation of negative environmental effects of aviation on the environment.
- v. Global harmonisation
 40. Only Option 3 ensures that EU rules are consistent with the global set of rules adopted by ICAO.
- vi. Other aviation requirements outside the EASA scope
 41. It is expected that the ICAO proposals will be adopted unaltered by other aviation authorities of the world.

5. Summary and Final Assessment

a. Comparison of the positive and negative impacts for each option evaluated

42. Option 1 would create a misalignment with ICAO standards, recommended practices and guidelines, which are considered leading in environmental protection. It would most probably lead to divergence with other environmental protection standards and would leave some potential loopholes open.
43. Option 2 would almost certainly lead to higher costs most probably for industry and (indirectly) the public, because it would lead to additional costs to substantiate that the requirements of this option (which deviate from the measures adopted by ICAO) would be met. Concerning Option 2 it has also to be considered that almost certainly the Basic Regulation has to be changed (not only the amendment levels of ICAO Annex 16, Volumes I and II in Article 6 of Basic Regulation have to be amended).
44. Option 3 is considered a reasonable compromise between safety, environment and economy. During a three-year work cycle (2007–2010) several aircraft noise and aircraft engine emissions issues were thoroughly discussed in the CAEP working groups by high-level technical experts from aviation authorities — including the Agency —, manufacturers, operators, airports and researchers. The amendments have been prepared in consequence and, by enhancing measures related to aircraft

noise and engine emissions, the amendments further minimise the effects of aviation on the environment. The amendments as proposed are consistent with the EU objectives as regards improving environmental protection.

b. Final assessment and recommendation of a preferred option

45. Based on the above, it is recommended to adopt the amendments proposed by ICAO, i.e. to follow Option 3.

B. Draft Opinion and Decisions

The text of the amendment is arranged to show deleted text, new text or new paragraph as shown below:

1. Deleted text is shown with a strike through: ~~deleted~~
2. New text is highlighted with grey shading: **new**
3. ... indicates that remaining text is unchanged in front of or following the reflected amendment.

I. Draft Opinion for amending the Basic Regulation and for amending Commission Regulation (EC) No 1702/2003 (Part 21)

1. Draft text for amending the Basic Regulation

Article 1

Article 6 (1) of Regulation (EC) No 216/2008 is replaced by the following:

'Article 6

Essential requirements for environmental protection

1. Products, parts and appliances shall comply with the environmental protection requirements contained in Amendment 9~~10~~ of Volume I and in Amendment 6~~7~~ of Volume II of Annex 16 to the Chicago Convention as applicable on ~~20 November 2008~~**17 November 2011**, except for the Appendices to Annex 16.'

(a) By way of derogation from paragraph (1), Member States may grant exemptions of unlimited duration to the emissions production cut-off requirement of paragraph (d) of Volume II, Part II, Chapter 2, paragraph 2.3.2 of Annex 16 to the Chicago Convention, until 31 December 2016.

(i) Such exemptions shall be granted by the Competent Authority responsible for the organisation requesting the exemption, in consultation with the Agency.

Exemptions may only be granted when the economic impact to the organisation producing the engines outweighs environmental protection interests and, in the case of new engines to be installed on new aircraft, shall not be granted to more than 75 engines per engine type.

(ii) When considering a request for exemption, the Competent Authority shall take into account:

— the justification provided by the organisation, including, but not limited to, considerations of technical issues, adverse economic impacts, environmental effects, impact of unforeseen circumstances and equity issues;

— the intended use of the affected engines, namely whether they are spare or new engines;

— the number of new engines affected;

— the number of granted exemptions for that engine type.

(iii) When granting the exemption, the Competent Authority shall specify as a minimum:

— the engine's type-certificate number;

- the maximum number of engines included in the exemption;
 - the maximum duration and use of the affected engines;
- (iv) Organisations producing engines under an exemption granted in accordance with this article shall:
- ensure that the identification plates on the affected engines are marked 'EXEMPT NEW' or 'EXEMPT SPARE', as relevant;
 - have a quality control process for maintaining oversight of and managing the production of affected engines;
 - provide, on a regular basis, to the Competent Authority and the design organisation details on the exempted engines which have been produced, including model, serial number, use of the engine, and aircraft type on which new engines are installed.
- (v) All data referred to in (ii) and (iv) (3rd bullet point) shall, without undue delay, be communicated to the Agency by the Competent Authority that granted the exemption. The Agency shall establish and maintain a register containing such data and make it publicly available.

Article 2

1. This Regulation shall enter into force on the 20th day following its publication in the *Official Journal of the European Union*.

2. Draft text for amending Commission Regulation (EC) No 1702/2003 (Part 21)

Article 1

Annex Part 21 to Commission Regulation (EC) No 1702/2003 shall be amended as follows:

'ANNEX

Part 21

...

SECTION A

...

SUBPART A — GENERAL PROVISIONS

...

21A.4 Coordination between design and production

Each holder of a type-certificate, restricted type-certificate, supplemental type certificate, ETSO authorisation, approval of a change to type design or approval of a repair design, shall collaborate with the production organisation as necessary to ensure:

- (a) The satisfactory coordination of design and production required by 21A.122, ~~or~~ 21A.130(b)(3) and (4), 21A.133 ~~or~~ and 21A.165(c)(2) and (3) as appropriate, and
- (b) The proper support of the continued airworthiness of the product, part or appliance.

...

SUBPART F — PRODUCTION WITHOUT PRODUCTION ORGANISATION APPROVAL

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21A.130 Statement of conformity

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(b) A statement of conformity shall include:

1. For each product, part or appliance a statement that the product, part or appliance conforms to the approved design data and is in condition for safe operation;
2. For each aircraft, a statement that the aircraft has been ground and flight checked in accordance with 21A.127(a); ~~and~~
3. For each engine, or variable pitch propeller, a statement that the engine or propeller has been subjected by the manufacturer to a final functional test in accordance with 21A.128; ~~and additionally in case of engines a determination according to data provided by the engine type certificate holder that each completed engine is in compliance with the applicable emissions requirements current at the date of manufacture of the engine.~~
4. Additionally, in the case of engines, a statement that the completed engine is in compliance with the applicable emissions requirements on the date of manufacture of the engine.

...

SUBPART G — PRODUCTION ORGANISATION APPROVAL

...

21A.165 Obligations of the holder

The holder of a production organisation approval shall:

...

- (c) 1. Determine that each completed aircraft conforms to the type design and is in condition for safe operation prior to submitting Statements of Conformity to the Competent Authority, or
2. Determine that other products, parts or appliances are complete and conform to the approved design data and are in a condition for safe operation before issuing an EASA Form 1 to certify conformity to approved design data and condition for safe operation; ~~and additionally in case of engines, determine according to data provided by the engine type certificate holder that each completed engine is in compliance with the applicable emissions requirements as defined in point 21A.18(b), current at the date of manufacture of the engine, to certify emission compliance, or~~
3. Additionally, in the case of engines, determine that the completed engine is in compliance with the applicable emissions requirements on the date of manufacture of the engine.
34. Determine that other products, parts or appliances conform to the applicable data before issuing ~~an~~ EASA Form 1 as a conformity certificate.'

II. Draft Decision for amending AMC and GM to Part 21**AMC and GM to Part 21****SECTION A**

...

SUBPART F — PRODUCTION WITHOUT PRODUCTION ORGANISATION APPROVAL

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GM No. 2 to 21A.121**Applicability — Applicable design data**

Applicable design data is defined as all necessary drawings, specifications and other technical information provided by the applicant for, or holder of a design organisation approval, TC, STC, approval of repair or minor change design, or ETSO authorisation (or equivalent when Part 21 Section A Subpart F is used for production of products, parts or appliances, the design of which has been approved other than according to Part 21), and released in a controlled manner to the manufacturer producing under Part 21 Subpart F. This should be sufficient for the development of production data to enable manufacture in conformity with the design data.

Prior to issue of the TC, STC, approval of repair or minor change design or ETSO authorisation, or equivalent, design data is defined as 'not approved', but parts and appliances may be released with an EASA Form 1 as a certificate of conformity.

After issue of the TC, STC, approval of repair or minor change or ETSO authorisation, or equivalent, this design data is defined as 'approved' and items manufactured in conformity are eligible for release on an EASA Form 1 for airworthiness purposes.

For the purpose of Subpart F of Part 21 the term 'applicable design data' includes, in the case of engines and when applicable, the information related to the applicable emissions production cut-off requirement.

...

AMC 21A.130 (b) (4)**Applicable emissions requirements****1. General**

This determination is made according to the data provided by the engine type-certificate holder. This data should allow the determination of whether the engine complies with the emissions production cut-off requirement of paragraph (d) of Volume II, Part II, Chapter 2, paragraph 2.3.2 of Annex 16 to the Chicago Convention. It should be noted that in the case of engines for which the Competent Authority has granted an exemption from these requirements, the emissions requirements applicable are those of Amendment 4 to Volume II of Annex 16 to the Chicago Convention.

2. Process and criteria for exemptions against a NOx emissions production cut-off requirement**2.1 Request**

The organisation should submit a formal request to the Competent Authority, signed by an appropriate manager, and copied to all other relevant organisations and involved Competent Authorities including the Agency. The letter should include the following information for the Competent Authority to be in a position to review the application:

a) Administration

- Name, address and contact details of the organisation.

b) Scope of the request

- Engine type (model designation, type-certificate (TC) number, TC date, emission TC basis, ICAO Engine Emissions Databank Unique Identification (UID) Number);
- Number of individual engine exemptions requested;
- Duration (end date) of continued production of the affected engines.
- Whether the proposed affected engines are 'spares' or 'new' and whom the engines will be originally delivered to.

Note: In the case where the engines are 'new' (new engines installed on new aircraft), and if this would result in a larger negative environmental impact to spare engines, more detailed justification could be required to approve this application.

c) Justification for exemptions

When requesting an exemption for a 'new' engine, the organisation should, to the extent possible, address the following factors, with quantification, in order to support the merits of the exemption request:

- Technical issues, from an environmental and airworthiness perspective, which may have delayed compliance with the production cut-off requirement;
- Economic impacts on the manufacturer, operator(s) and aviation industry at large;
- Environmental effects. This should consider the amount of additional NO_x emissions that will be emitted as a result of the exemption. This could include consideration of items such as:
 - the amount that the engine model exceeds the NO_x emissions standard, taking into account any other engine models in the engine family covered by the same type-certificate and their relation to the standard;
 - the amount of NO_x emissions that would be emitted by an alternative engine for the same application; and
 - the impact of changes to reduce NO_x on other environmental factors, including community noise and CO₂ emissions;
- Impact of unforeseen circumstances and hardship due to business circumstances beyond the manufacturer's control (e.g. employee strike, supplier disruption or calamitous events);
- Projected future production volumes and plans for producing a compliant version of the engine model seeking exemption;
- Equity issues in administering the production cut-off among economically competing parties (e.g. provide rationale for granting this exemption when another manufacturer has a compliant engine and does not need an exemption, taking into account the implications for operator fleet composition, commonality and related issues in the absence of the engine for which exemptions are sought);
- Any other relevant factors.

2.2 Evaluation

2.2.1. Since the Agency has the overview of the exemptions granted within the Member States and within Third Countries by contacting the relevant Design Organisation, the Agency advises the Competent Authority during the process of granting exemptions. The advice from the Agency should take the form of a letter sent to the Competent Authority.

2.2.2 The evaluation of an exemption request should be based on the justification provided by the organisation and on the following definitions and criteria:

a) Use of engines

- 'Spare engines' are defined as complete new engine units which are to be installed on in-service aircraft for maintenance and replacement. It can be presumed that exemption applications associated with engines for this purpose would be granted as long as the emissions were equal to or lower than those engines they are replacing. The application should include the other items described in points (a) and (b) of paragraph 2.1 above, but it would not need to include the items specified in point (c). For spare engines, the evaluation of the exemption application would be conducted for record keeping and reporting purposes, but it would not be done for approval of an exemption.
- 'New engines' are defined as complete new engine units which are to be installed on new aircraft. They can only be exempted from a NOx production cut-off requirement if they already meet the previous standard (e.g. exemption from the CAEP/6 NOx production cut-off requirement is only possible if an engine type already meets the CAEP/4 NOx standard). Also, in order for an exemption to be granted for this type of engine the applicant must clearly demonstrate that they meet the criteria for an exemption by including items described in points (a), (b) and (c) of paragraph 2.1 above. The Competent Authority may require additional information regarding the appropriateness of the potential exemption.

b) Number of exemptions for new engines

Exemptions should be based on a total number of engines and time period for delivery of these engines, which would be agreed at the time the application is approved and based on the considerations explained in point (c) of paragraph 2.1 above. The number of engines exempted should not exceed 75 per engine type-certificate, and the end date of continued production of the affected engines should not exceed 31.12.2016. The number of exemptions is related to individual non-compliant engines covered under the same type-certificate.

Exemptions for new engines should be processed and approved by the Competent Authority, in agreement with the Agency, for both the manufacture of the exempted engines and the initial operator of the aircraft to which they are to be fitted. Given the international nature of aviation, the Agency should attempt to collaborate and consult on the details of exemptions. In the case where engine type certification is done through a reciprocity agreement between the Agency and Third Countries, the Agency should coordinate on the processing of exemptions and concur before approval is granted.

c) Other engines

Unlimited exemptions may be granted for spare engines having emissions equivalent to or lower than the engines they are replacing.

Engines for use on aircraft excluded from the scope of the Basic Regulation - i.e. aircraft specified in Annex II to the Basic Regulation and aircraft involved in activities referred to in Article 1(2) of the Basic Regulation (e.g. military, customs, police, search and rescue fire fighting, coastguard or similar activities and services) - are excluded from civil aircraft NOx production cut-off requirements.

2.3 Rejection of request

If the competent authority rejects the request for exemption, the response should include a detailed justification.

GM 21A.130 (b) (4)**Definitions of engine type certification date and production date**

Volume II of Annex 16 to the Chicago Convention contains two different references to applicability dates:

- 'Date of manufacture for the first individual production model' which refers to the engine type certification date; and
- 'Date of manufacture for the individual engine' which refers to the production date of a specific engine serial number (date of Form 1).

The second reference is used in the application of the engine NOx emissions production cut-off requirement, which specifies a date after which all in-production engine models must meet a certain NOx emissions standard.

21A.130(b)(4) includes the production requirements and refers to paragraphs (b) and (d) of Volume II, Part III, Chapter 2, paragraph 2.3 of Annex 16 to the Chicago Convention.

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SUBPART G — PRODUCTION ORGANISATION APPROVAL**GM 21A.131****Scope — Applicable design data**

Applicable design data is defined as all necessary drawings, specifications and other technical information provided by the applicant for, or holder of a design organisation approval, TC, STC, approval of repair or minor change design, or ETSO authorisation (or equivalent when Part 21 Section A Subpart G is used for production of products, parts or appliances, the design of which has been approved other than according to Part 21) and released in a controlled manner to a production organisation approval holder. This should be sufficient for the development of production data to enable repeatable manufacture to take place in conformity with the design data.

Prior to issue of the TC, STC, approval of repair or minor change design or ETSO authorisation, or equivalent, design data is defined as 'not approved' but parts and appliances may be released with an EASA Form 1 as a certificate of conformity.

After issue of the TC, STC, approval of repair or minor change or ETSO authorisation, or equivalent this design data is defined as 'approved' and items manufactured in conformity are eligible for release on an EASA Form 1 for airworthiness purposes.

For the purpose of Subpart G of Part 21 the term 'applicable design data' includes, in case of engines and when applicable, the information related to the applicable emissions production cut-off requirement.

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AMC No 2 to 21A.163(c) — Completion of the EASA Form 1

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EASA Form 1 Block 12 'Remarks'

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Examples of data to be entered in this block as appropriate:

- For complete engines, a statement of compliance with the applicable emissions requirements current **on** the date of manufacture of the engine.
- For ETSO articles, state the applicable ETSO number.
- Modification standard.

- Compliance or non-compliance with airworthiness directives or Service Bulletins.
- Details of repair work carried out, or reference to a document where this is stated.
- Shelf life data, manufacture date, cure date, etc.
- Information needed to support shipment with shortages or re-assembly after delivery.
- References to aid traceability, such as batch numbers.
- In case of an engine, if the Competent Authority has granted an emissions production cut-off exemption the record: '[NEW] OR [SPARE] ENGINE EXEMPTED FROM [NOx] EMISSIONS PRODUCTION CUT-OFF REQUIREMENT'.

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AMC 21A.165(c)(3)

Applicable emissions requirements

1. General

This determination is made according to the data provided by the engine type-certificate holder. This data should allow the determination of whether the engine complies with the emissions production cut-off requirement of paragraph (d) of Volume II, Part II, Chapter 2, paragraph 2.3.2 of Annex 16 to the Chicago Convention. It should be noted that in the case of engines for which the Competent Authority has granted an exemption from these requirements, the emissions requirements applicable are those of Amendment 4 to Volume II of Annex 16 to the Chicago Convention.

2. Process and criteria for applying for exemptions against a NOx emissions production cut-off requirement.

2.1 Request

The organisation should submit a formal request to the Competent Authority, signed by an appropriate manager, and copied to all other relevant organisations and involved Competent Authorities including the Agency. The letter should include the following information for the Competent Authority to be in a position to review the application:

a) Administration

- Name, address and contact details of the organisation.

b) Scope of the request

- Engine type (model designation, type-certificate (TC) number, TC date, emission TC basis, ICAO Engine Emissions Databank Unique Identification (UID) Number);
- Number of individual engine exemptions requested;
- Duration (end date) of continued production of the affected engines.
- Designate whether the proposed exempted engines are 'spares' or 'new' and whom the engines will be originally delivered to.

Note: In the case where the engines are 'new' (new engines installed on new aircraft), and if this would result in a larger negative environmental impact to spare engines, more detailed justification could be required to approve this application.

c) Justification for exemptions

When requesting an exemption for a 'new' engine, the organisation should, to the extent possible, address the following factors, with quantification, in order to support the merits of the exemption request:

- Technical issues, from an environmental and airworthiness perspective, which may have delayed compliance with the production cut-off requirement;
- Economic impacts on the manufacturer, operator(s) and aviation industry at large;
- Environmental effects. This should consider the amount of additional NO_x emissions that will be emitted as a result of the exemption. This could include consideration of items such as:
 - the amount that the engine model exceeds the NO_x emissions standard, taking into account any other engine models in the engine family covered by the same type-certificate and their relation to the standard;
 - the amount of NO_x emissions that would be emitted by an alternative engine for the same application; and
 - the impact of changes to reduce NO_x on other environmental factors, including community noise and CO₂ emissions;
- Impact of unforeseen circumstances and hardship due to business circumstances beyond the manufacturer's control (e.g. employee strike, supplier disruption or calamitous events);
- Projected future production volumes and plans for producing a compliant version of the engine model seeking exemption;
- Equity issues in administering the production cut-off among economically competing parties (e.g. provide rationale for granting this exemption when another manufacturer has a compliant engine and does not need an exemption taking into account the implications for operator fleet composition, commonality and related issues in the absence of the engine for which exemptions are sought);
- Any other relevant factors.

2.2 Evaluation process.

2.2.1. Since the Agency has the overview of the exemptions granted within the Member States and within Third Countries by contacting the relevant Design Organisation, the Agency advises the Competent Authority during the process of granting exemptions. The advice from the Agency should take the form of a letter sent to the Competent Authority.

2.2.2 The evaluation of an exemption request should be based on the justification provided by the organisation and on the following definitions and criteria:

a) Use of engines

- 'Spare engines' are defined as complete new engine units which are to be installed on in-service aircraft for maintenance and replacement. It can be presumed that exemption applications associated with engines for this purpose would be granted as long as the emissions were equal to or lower than those engines they are replacing. The application should include the other items described in points (a) and (b) of paragraph 2.1 above, but it would not need to include the items specified in point (c). For spare engines, the evaluation of the exemption application would be conducted for record keeping and reporting purposes, but it would not be done for approval of an exemption.
- 'New engines' are defined as complete new engine units which are to be installed on new aircraft. They can only be exempted from a NO_x production cut-off requirement if they already meet the previous standard (e.g. exemption from the CAEP/6 NO_x production cut-off requirement is only possible if an engine type already meets the CAEP/4 NO_x standard). Also, in order for an exemption to be granted for this type of engine the applicant

must clearly demonstrate that they meet the criteria for an exemption by including items described in points (a), (b) and (c) of paragraph 2.1 above. The Competent Authority may require additional information regarding the appropriateness of the potential exemption.

b) Number of exemptions for new engines

Exemptions should be based on a total number of engines and time period for delivery of these engines, which would be agreed at the time the application is approved and based on the considerations explained in point (c) of paragraph 2.1 above. The number of engines exempted should not exceed 75 per engine type-certificate, and the end date of continued production of the affected engines should not exceed 31.12.2016. The number of exemptions is related to individual non-compliant engines covered under the same type-certificate.

Exemptions for new engines should be processed and approved by the Competent Authority, in agreement with the Agency, for both the manufacture of the exempted engines and the initial operator of the aircraft to which they are to be fitted. Given the international nature of aviation, the Agency should attempt to collaborate and consult on the details of exemptions. In the case where engine type certification is done through a reciprocity agreement between the Agency and Third Countries, the Agency should coordinate on the processing of exemptions and concur before approval is granted.

c) Other engines

Unlimited exemptions may be granted for spare engines having emissions equivalent to or lower than the engines they are replacing.

Engines for use on aircraft excluded from the scope of the Basic Regulation - i.e. aircraft specified in Annex II to the Basic Regulation and aircraft involved in activities referred to in Article 1(2) of the Basic Regulation (e.g. military, customs, police, search and rescue fire fighting, coastguard or similar activities and services) - are excluded from civil aircraft NOx production cut-off requirements.

2.3 Rejection of request

If the competent authority rejects the request for exemption, the response should include a detailed justification.

GM 21A.165(c)(3)

Definitions of engine type certification date and production date

Volume II of Annex 16 to the Chicago Convention contains two different references to applicability dates:

- 'Date of manufacture for the first individual production model' which refers to the engine type certification date; and
- 'Date of manufacture for the individual engine' which refers to the production date of a specific engine serial number (date of Form 1).

The second reference is used in the application of engine NOx emissions production cut-off requirement which specifies a date after which all in-production engine models must meet a certain NOx emissions standard.

21A.165(c)(3) includes the production requirements and refers to paragraphs (b) and (d) of Volume II, Part III, Chapter 2, paragraph 2.3 of Annex 16 to the Chicago Convention.

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III. Draft Decision for amending CS-34**Certification Specifications for Aircraft Engine Emissions and Fuel Venting****CS-34****Amendment 1**

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Book 2**Acceptable Means of Compliance and Guidance Material**

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GM 34.1 Aircraft engine emissions

Guidance material for the application of the certification specifications for aircraft engine emissions is presented in:

- (a) for instrumentation and measurement techniques for gaseous emissions, the attachments to Appendix 3 of ICAO Annex 16, Volume II; ~~and~~
- (b) for instrumentation and measurement techniques for gaseous emissions from afterburning gas turbine engines, the attachments to Appendix 5 of ICAO Annex 16, Volume II;
- (c) for definitions and symbols, Part I of the ICAO Environmental Technical Manual, Volume II;
- (d) for emissions certification of turbojet and turbofan engines intended for propulsion only at subsonic speeds, Part III, Chapter 2 of the ICAO Environmental Technical Manual, Volume II; except for the exemption process from the NO_x emissions production cut-off requirements;
- (e) for turbojet and turbofan engines intended for propulsion at supersonic speeds, Part III, Chapter 3 of the ICAO Environmental Technical Manual, Volume II;
- (f) for smoke emission evaluation, Appendix 2 of the ICAO Environmental Technical Manual, Volume II;
- (g) for instrumentation and measurement techniques for gaseous emissions, Appendix 3 of the ICAO Environmental Technical Manual, Volume II;
- (h) for specification for HC analyser, Attachment A to Appendix 3 of the ICAO Environmental Technical Manual, Volume II; and
- (i) for specification for fuel to be used in aircraft turbine engine emission testing, Appendix 4 of the ICAO Environmental Technical Manual, Volume II.

References throughout these Certification Specifications to the ICAO Environmental Technical Manual, Volume II, refer to ICAO Doc 9501 — Environmental Technical Manual, Volume II — Procedures for the Emissions Certification of Aircraft Engines, First Edition 2010.

IV. Draft Decision for amending CS-36**Certification Specifications for Aircraft Noise****CS-36****Amendment 23**

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Book 2**Acceptable Means of Compliance and Guidance Material**

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GM 36.1 Aircraft noise

Guidance material for the application of the certification specifications for aircraft noise is presented in:

- (a) for equations for the calculation of noise levels as a function of take-off mass, Attachment A to ICAO Annex 16 to the Chicago Convention, Volume I;
- (b) for evaluating an alternative method of measuring helicopter noise during approach, Attachment D to ICAO Annex 16 to the Chicago Convention, Volume I;
- (c) for applicability of noise certification standards for propeller-driven aeroplanes, Attachment E to ICAO Annex 16, Volume I;
- ~~(d) for equivalent procedures for subsonic jet aeroplanes, Chapter 2 of the International Civil Aviation Organisation (ICAO) Environmental Technical Manual;~~
- ~~(e) for equivalent procedures for propeller-driven aeroplanes over 8,618 kg, Chapter 3 of the ICAO Environmental Technical Manual;~~
- ~~(f) for equivalent procedures for propeller-driven aeroplanes not exceeding 8,618 kg, Chapter 4 of the ICAO Environmental Technical Manual;~~
- ~~(g) for equivalent procedures for helicopters, Chapter 5 of the ICAO Environmental Technical Manual;~~
- ~~(h) for evaluation methods, Chapter 6 of the ICAO Environmental Technical Manual;~~
- ~~(i) [Reserved];~~
- ~~(j) for control of noise certification computer programme software and documentation related to static to flight projection processes, Chapter 8 of the ICAO Environmental Technical Manual;~~
- ~~(k) for calculation of confidence intervals, Appendix 1 of the ICAO Environmental Technical Manual;~~
- ~~(l) for identification of spectral irregularities, Appendix 2 of the ICAO Environmental Technical Manual;~~
- ~~(m) for a procedure for removing the effects of ambient noise levels from aeroplane noise data, Appendix 3 of the ICAO Environmental Technical Manual;~~
- ~~(n) for reference tables and figures used in the manual calculation of Effective Perceived Noise Level, Appendix 4 of the ICAO Environmental Technical Manual;~~
- ~~(o) for worked examples of calculation of reference flyover height and reference conditions for source noise adjustments for certification of light propeller driven aeroplanes, Appendix 5 of the ICAO Environmental Technical Manual;~~

- ~~(p) for noise data corrections for tests at high altitude test sites, Appendix 6 of the ICAO Environmental Technical Manual;~~
- ~~(q) for reassessment criteria for the recertification of an aeroplane to Annex 16 to the Chicago Convention, Volume 1, Chapter 4, Appendix 8 of the ICAO Environmental Technical Manual; and~~
- ~~(r) for the use of DGPS-based time-space position information tracking systems, Appendix 10 of the ICAO Environmental Technical Manual.~~
- (d) for general guidelines, Chapter 2 of the ICAO Environmental Technical Manual, Volume I;
- (e) for technical procedures applicable for noise certification of more than one type of aircraft, Chapter 3 of the ICAO Environmental Technical Manual, Volume I;
- (f) for guidelines for subsonic jet aeroplanes, propeller-driven aeroplanes over 8 616 kg, and helicopters evaluated under ICAO Annex 16, Volume I, Appendix 2, Chapter 4 of the ICAO Environmental Technical Manual, Volume I;
- (g) for guidelines for propeller-driven aeroplanes not exceeding 8 616 kg evaluated under Appendix 6 of ICAO Annex 16, Volume I, Chapter 5 of the ICAO Environmental Technical Manual, Volume I;
- (h) for guidelines for helicopters not exceeding 3 175 kg evaluated under Appendix 4 of ICAO Annex 16, Volume I, Chapter 6 of the ICAO Environmental Technical Manual, Volume I; and
- (i) for guidelines for aircraft recertification, Chapter 9 of the ICAO Environmental Technical Manual, Volume I.

References throughout these Certification Specifications to the ICAO Environmental Technical Manual, Volume I refer to the ICAO Environmental Technical Manual on the Use of Procedures in the Noise Certification of Aircraft, ICAO/CAEP/7 approved revision, 2 April 2007 (based on ICAO Doc 9501-AN/929, Third Edition — 2004) ICAO Doc 9501 — Environmental Technical Manual, Volume I — Procedures for the Noise Certification of Aircraft, First Edition 2010.