



European Aviation Safety Agency – Rulemaking Directorate

Notice of Proposed Amendment 2014-15

Implementation of CAEP/9 amendments Update of CS-34 and CS-36

RMT.0172 (BR.012), RMT.0083 (34.003) & RMT.0086 (36.007) – 24.6.2014

EXECUTIVE SUMMARY

This Notice of Proposed Amendment (NPA) addresses an environmental issue related to aircraft noise and engine emissions.

The specific objective is to provide a high uniform level of environmental protection in the EU as well as a level playing field for all actors in the aviation market by aligning European Union legislation with the latest ICAO Standards and Recommended Practices (SARPs) and Guidance Material on aircraft noise and aircraft engine emissions. New amendments to these SARPs and Guidance Material were approved by the ICAO Committee on Aviation Environmental Protection at its 9th meeting (CAEP/9) of February 2013 and adopted by the ICAO Council at its 201st meeting of March 2014.

This NPA proposes to incorporate the CAEP/9 amendments into Article 6 of Regulation (EC) No 216/2008 (the 'Basic Regulation'), Annex I (Part-21) to Regulation (EU) No 748/2012 and the Agency's Certification Specifications for aircraft engine emissions and fuel venting (CS-34) and aircraft noise (CS-36), including the related Acceptable Means of Compliance and Guidance Material.

Applicability		Process map	
Affected regulations and decisions:	Regulation (EC) No 216/2008; Annex I (Part-21) of Regulation (EU) No 748/2012; CS-34; CS-36	Concept Paper:	No
Affected stakeholders:	Design and production organisations	Terms of Reference:	4.12.2013
Driver/origin:	Environmental protection	Rulemaking group:	No EASA rulemaking group but CAEP
Reference:	n/a	RIA type:	Full (by CAEP)
		Technical consultation during NPA drafting:	No
		Duration of NPA consultation:	2 months
		Review group:	No
		Focused consultation:	No
		Publication date of the Opinion:	2014/Q4
		Publication date of the Decision:	2016/Q1

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1. Procedural information

1.1. The rule development procedure

The European Aviation Safety Agency (hereinafter referred to as the 'Agency') developed this Notice of Proposed Amendment (NPA) in line with Regulation (EC) No 216/2008¹ (hereinafter referred to as the 'Basic Regulation') and the Rulemaking Procedure².

This rulemaking activity is included in the Agency's Rulemaking Programme 2014-2017 under RMT.0172, RMT.0083 and RMT.0086 (former task numbers BR.012, 34.003, 36.007 respectively), available at <http://easa.europa.eu/document-library/rulemaking-programmes>.

The text of this NPA has been developed by the Agency. It is hereby submitted for consultation of all interested parties³.

The process map on the title page contains the major milestones of this rulemaking activity to date and provides an outlook of the timescale of the next steps.

1.2. The structure of this NPA and related documents

Chapter 1 of this NPA contains the procedural information related to this task. Chapter 2 (Explanatory Note) explains the core technical content. Chapter 3 contains the proposed text for the new requirements. Chapter 4 contains the Regulatory Impact Assessment showing which options were considered and what impacts were identified, thereby providing the detailed justification for this NPA.

1.3. How to comment on this NPA

Please submit your comments using the automated **Comment-Response Tool (CRT)** available at <http://hub.easa.europa.eu/crt/>⁴.

The deadline for submission of comments is **25 August 2014**.

1.4. The next steps in the procedure

Following the closing of the NPA public consultation period, the Agency will review all comments.

The outcome of the NPA public consultation will be reflected in the respective Comment Response Document (CRD).

The Agency will publish the CRD with the Opinion.

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 (EU) No 6/2013 of 8 January 2013 (OJ L 4, 9.1.2013, p. 34).

² The Agency is bound to follow a structured rulemaking process as required by Article 52(1) of the Basic Regulation. Such a process has been adopted by the Agency's Management Board and is referred to as the 'Rulemaking Procedure'. See 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 Decision No 01-2012 of 13 March 2012.

³ In accordance with Article 52 of the Basic Regulation and Articles 5(3) and 6 of the Rulemaking Procedure.

⁴ In case of technical problems, please contact the CRT webmaster (crt@easa.europa.eu).

The Opinion will contain proposed changes to Regulation (EC) No 216/2008 and Regulation (EU) No 748/2012 and will be addressed to the European Commission, which uses it as a technical basis to prepare a legislative proposal.

The Decisions containing the amendments related to Certification Specifications CS-34 and CS-36, as well as the Acceptable Means of Compliance (AMC) and Guidance Material (GM) Annex I of Part-21 to Regulation (EU) No 748/2012 will be published by the Agency when the related Implementing Rule is adopted by the EASA Committee.

2. Explanatory Note

2.1. Overview of the issues to be addressed

In March 2014, the 201st ICAO Council meeting has adopted the amendments to Annex 16, as proposed by the Committee on Aviation Environmental Protection at its 9th meeting in February 2013 (CAEP/9). The amendments include a new noise standard for jet and propeller-driven aircraft (Annex 16, Volume I, Chapter 14) as well as for tilt-rotors (Annex 16, Volume I, Chapter 13). Updates to the guidance on the measurement of aircraft noise and aircraft engine emissions were proposed and revised versions of Volume I and Volume II of the Environmental Technical Manual (ICAO Doc 9501) were approved by CAEP/9.

The current Agency's rules and measures make a direct reference to the amendments of Annex 16, Volumes I and II, as well as to specific editions of the Environmental Technical Manual. An amendment of these rules and measures is therefore necessary to ensure that EU regulation in the field of aviation environmental protection is aligned with the latest international Standards and Recommended Practices (SARPs) as well as associated Guidance Material.

For more detailed analysis of the issues addressed by this proposal, please refer to the RIA section 4.1. 'Issues to be addressed'.

2.2. Objectives

The overall objectives of the EASA system are defined in Article 2 of the Basic Regulation. This proposal will contribute to the achievement of the overall objectives by addressing the issues outlined in Chapter 2 of this NPA.

The specific objective of this proposal is to ensure a high uniform level of environmental protection, as well as to provide a level playing field for all actors in the aviation market, by aligning the Agency's rules and AMC/GM with the ICAO Standards and Recommended Practices (Annex 16) and guidance (Environmental Technical Manual).

2.3. Summary of the Regulatory Impact Assessment (RIA)

The Regulatory Impact Assessment has highlighted the pros and cons of the two policy options identified during the Pre-RIA, namely: leave current rules unchanged ('do nothing') or implement the CAEP/9 amendments.

Out of these two options, only the second (implementation of CAEP/9 amendments) has positive impacts on all identified aspects (environmental, social, economic and harmonisation), while the first 'do nothing' option has negative impacts on all these aspects.

It is therefore proposed to proceed with the implementation of the CAEP/9 amendments.

2.4. Overview of the proposed amendments

The purpose of this Notice of Proposed Amendment (NPA) is to envisage amending:

- Regulation (EC) No 216/2008¹ (the 'Basic Regulation');

- Annex I (Part-21) to Commission Regulation (EU) No 748/2012⁵;
- Decision No 2012/020/R⁶ of the Executive Director of the European Aviation Safety Agency of 30 October 2012;
- Decision No 2003/3/RM⁷ of the Executive Director of the European Aviation Safety Agency of 17 October 2003; and
- Decision No 2003/4/RM⁸ of the Executive Director of the European Aviation Safety Agency of 17 October 2003.

The proposed amendments were designed to reflect the updates in the ICAO SARPs and Guidance Material, as described hereafter:

Amendment 11 to ICAO Annex 16, Volume I

The purpose of the 11th amendment of the SARPs in Annex 16, Volume I is to address technical issues arising from the application of the SARPs and related guidance for aircraft noise certification. Proposals include:

- (a) a new noise Standard (as Annex 16, Volume I, Chapter 14) for jet and propeller-driven aeroplanes, which includes an increase in stringency of 7 EPNdB (cumulative) relative to the current Chapter 4 levels. The new Standard is applicable to new aeroplane types submitted for certification on or after 31 December 2017 at or above 55 tonnes in weight, and on or after 31 December 2020 for aeroplanes less than 55 tonnes in weight;
- (b) upgrading the current guidance for the noise certification of tilt-rotors in Annex 16, Volume I, Attachment F to a new Chapter 13 noise Standard for tilt-rotors. The new Standard is applicable to new tilt-rotor types submitted for certification on or after 1 January 2018;
- (c) improvements to Annex 16 concerning the harmonisation of sections of Annex 16, Volume I on noise data validity and the scheduling of sound pressure level calibrations, and with regard to updating the specifications in the light of advances in audio recording technology;
- (d) a correction to the wind speed values given in m/s used for the definition of the noise certification test window;
- (e) upgrading the language in the title of Annex 16, Volume I, Attachment A to 'Equations for the calculation of *maximum permitted* noise levels as a function of take-off mass'

⁵ Commission Regulation (EU) No 748/2012 of 3 August 2012 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, and repealing Commission Regulation (EC) No 1702/2003 (OJ L 224, 21.8.2012, p.1), as last amended by Commission Regulation (EU) No 69/2014 of 27 January 2014 (OJ L 23, 28.1.2014, p. 12).

⁶ ED Decision 2012/020/R of 30 October 2012 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), as last amended by ED Decision 2014/007/R of 31 January 2014.

⁷ ED Decision 2003/3/RM of 17 October 2003 on Certification Specifications providing for Acceptable Means of Compliance for aircraft engine emissions and fuel venting (« CS-34 »), as last amended by ED Decision 2013/002/R of 23 January 2013.

⁸ ED Decision 2003/4/RM of 17 October 2003 on Certification Specifications providing for Acceptable Means of Compliance for aircraft noise (« CS-36 »), as last amended by ED Decision 2013/003/R of 23 January 2013.

(i.e. including: *maximum permitted*). Related consequential amendments to Annex 16, Volume I are also proposed; and

- (f) changes and corrections due to minor errors or for consistency purposes.

The proposed amendments listed in (a) to (f) are envisaged to have an applicability date of 1 January 2015.

Amendment 8 to ICAO Annex 16, Volume II

The purpose of the 8th amendment of the SARPs in Annex 16, Volume II is to address technical issues arising from the application of the SARPs and related guidance for aircraft engine emissions certification. Proposals include:

- (a) an amendment to Annex 16, Volume II, Attachment A to Appendix 3 to update the Hydro Carbon (HC) analyser oven temperature range;
- (b) an amendment to Annex 16, Volume II to allow the use of modern instruments for humidity measurement, and to update the location of the humidity instrument during emissions certification tests; and
- (c) changes and corrections due to minor errors or for consistency purposes.

The proposed amendments to Annex 16, Volume II are envisaged to have an applicability date of 1 January 2015.

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

The Volume I of the Environmental Technical Manual was revised during the 9th CAEP cycle. The revision includes various editorial improvements as well as the following changes:

- (a) corrections to the metric values of wind speed consistently with the ones in Annex 16, Volume I;
- (b) transfer of sections applicable to more than one category of aircraft to Chapter 3 of the Manual;
- (c) changes to the static engine test procedures;
- (d) improvements to definition of aircraft flight path and adjustment of aircraft noise data to reference conditions;
- (e) harmonisation of guidance regarding sound pressure level calibrations and level sensitivity drift;
- (f) improvements to guidance concerning the analysis of acoustical changes for small propeller-driven aeroplanes; and
- (g) changes concerning the quantification of no-acoustical changes.

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

The Volume II of the Environmental Technical Manual was revised during the 9th CAEP cycle. The revision includes new guidance text on the following items:

- (a) measurement of reference pressure ratio;
- (b) smoke sample size;
- (c) HC analyser specifications;
- (d) CO and CO₂ analysers specifications;
- (e) NO_x analyser specifications;
- (f) calibration and test gases;
- (g) calculation of the emissions parameters;
- (h) humidity instrument distance of measurement and accuracy; and
- (i) reference standard engine definition.

3. Proposed amendments

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

- (a) deleted text is marked with ~~strike through~~;
- (b) new or amended text is highlighted in grey;
- (c) an ellipsis (...) indicates that the remaining text is unchanged in front of or following the reflected amendment.

3.1. Draft Regulation (Draft EASA Opinion)

3.1.1. Draft text for amending Regulation (EC) No 216/2008

Article 1

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

- '1. Products, parts and appliances shall comply with the environmental protection requirements contained in Amendment ~~1011~~ of Volume I and in Amendment ~~78~~ of Volume II of Annex 16 to the Chicago Convention as applicable on ~~17 November 2011~~ ~~1~~ January 2015, except for the Appendices to Annex 16.'

3.1.2. Draft text for amending Annex I (Part-21) to Commission Regulation (EU) No 748/2012

Article 1

Annex I (Part-21) to Commission Regulation (EU) No 748/2012 is amended as follows:

ANNEX I

Part-21

...

SECTION A

...

SUBPART A — GENERAL PROVISIONS

...

21.A.18 Designation of applicable environmental protection requirements and Certification Specifications

- (a) The applicable noise requirements for the issue of a type-certificate for an aircraft are prescribed according to the provisions of Chapter 1 of Annex 16, Volume I, Part II to the Chicago Convention and:
1. for subsonic jet aeroplanes, in Volume I, Part II, Chapters 2, 3 and 4 and 14, as applicable;
 2. for propeller-driven aeroplanes, in Volume I, Part II, Chapters 3, 4, 5, 6 and 10 and 14, as applicable;
 3. for helicopters, in Volume I, Part II, Chapters 8 and 11, as applicable; and
 4. for supersonic aeroplanes, in Volume I, Part II, Chapter 12, as applicable; and
 5. for tilt-rotors, in Volume I, Part II, Chapter 13, as applicable.

3.2. Draft Certification Specifications (Draft EASA Decision)**3.2.1. Draft EASA Decision for amending CS-34****Certification Specifications and Acceptable Means of Compliance for Aircraft Engine Emissions and Fuel Venting****CS-34**

Amendment 12

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Book 2**Acceptable Means of Compliance and Guidance Material****AMC 34.2 Aircraft engine emissions**

The acceptable means Acceptable Means of Compliance Compliance for aircraft engine emissions are presented in:

- (a) for measurement of reference pressure ratio, Appendix 1 of ICAO Annex 16, Volume II;
- (b) for smoke emission evaluation, Appendix 2 of ICAO Annex 16, Volume II;
- (c) for instrumentation and measurement techniques for gaseous emissions, Appendix 3, except for its attachments, of ICAO Annex 16, Volume II;
- (d) for specification for fuel to be used in aircraft turbine engine emission testing, Appendix 4 of ICAO Annex 16, Volume II;
- (e) for instrumentation and measurement techniques for gaseous emissions from afterburning gas turbine engines, Appendix 5, except for its attachments, of ICAO Annex 16, Volume II; and
- (f) for compliance procedure for gaseous emissions and smoke, Appendix 6 of ICAO Annex 16, Volume II.

GM 34.2 Aircraft engine emissions

Guidance material~~Material~~ for the application of the certification specifications~~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;
- (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.;
- (j) for measurement of reference pressure ratio, Appendix 1 of the ICAO Environmental Technical Manual, Volume II;
- (k) for specification for CO and CO₂ analysers, Attachment B to Appendix 3 of the ICAO Environmental Technical Manual, Volume II;
- (l) for specification for NO_x analyser, Attachment C to Appendix 3 of the ICAO Environmental Technical Manual, Volume II;
- (m) for calibration and test gases, Attachment D to Appendix 3 of the ICAO Environmental Technical Manual, Volume II;

- (n) for the calculation of the emissions parameters, Attachment E to Appendix 3 of the ICAO Environmental Technical Manual, Volume II;
- (o) for the specification for additional data, Attachment F to Appendix 3 of the ICAO Environmental Technical Manual, Volume II; and
- (p) for compliance procedure for gaseous emissions and smoke, Appendix 6 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 Second Edition 2010⁴.

[Amdt. 34/1]

[Amdt. 34/2]

3.2.2. Draft EASA Decision for amending CS-36

Certification Specifications and Acceptable Means of Compliance for Aircraft Noise

CS-36

Amendment 34

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Book 2

Acceptable Means of Compliance and Guidance Material

AMC 36.1 Aircraft noise

The ~~acceptable means~~ **Acceptable Means** of ~~compliance~~ **Compliance** for aircraft noise are presented in:

- (a) for aeroplanes for which Chapter 2 of Annex 16 to the Chicago Convention⁹, Volume I, Part II is applicable, Appendix 1 of Annex 16, Volume I;
- (b) for aeroplanes for which Chapter 3 of Annex 16 to the Chicago Convention, Volume I, Part II is applicable, Appendix 2 of Annex 16, Volume I;
- (c) for aeroplanes for which Chapter 4 of Annex 16 to the Chicago Convention, Volume I, Part II is applicable, Appendix 2 of Annex 16, Volume I;
- (d) for aeroplanes for which Chapter 5 of Annex 16 to the Chicago Convention, Volume I, Part II is applicable, Appendix 2 of Annex 16, Volume I;
- (e) for aeroplanes for which Chapter 6 of Annex 16 to the Chicago Convention, Volume I, Part II is applicable, Appendix 3 of Annex 16, Volume I;
- (f) for helicopters for which Chapter 8 of Annex 16 to the Chicago Convention, Volume I, Part II is applicable, Appendix 2 of Annex 16, Volume I;

⁹ The Convention on International Civil Aviation on 7 December 1944.

- (g) for aeroplanes for which Chapter 10 of Annex 16 to the Chicago Convention, Volume I, Part II is applicable, Appendix 6 of Annex 16, Volume I;
- (h) for helicopters for which Chapter 11 of Annex 16 to the Chicago Convention, Volume I, Part II is applicable, Appendix 4 of Annex 16, Volume I; ~~and~~
- (i) for aeroplanes for which Chapter 12 of Annex 16 to the Chicago Convention, Volume I, Part II is applicable, Appendix 1 of Annex 16, Volume I; ~~;~~
- (j) for tilt-rotors for which Chapter 13 of Annex 16 to the Chicago Convention, Volume I, Part II is applicable, Appendix 2 of Annex 16, Volume I; and
- (k) for aeroplanes for which Chapter 14 of Annex 16 to the Chicago Convention, Volume I, Part II is applicable, Appendix 2 of Annex 16, Volume I.

GM 36.1 Aircraft noise

Guidance material ~~Material~~ for the application of the certification specifications ~~Certification Specifications~~ for aircraft noise is presented in:

- (a) for equations for the calculation of ~~maximum permitted~~ noise levels as a function of take-off mass, Attachment A to ICAO Annex 16, Volume I;
- (b) for evaluating an alternative method of measuring helicopter noise during approach, Attachment D to ICAO Annex 16, Volume I;
- (c) for applicability of noise certification standards for propeller-driven aeroplanes, Attachment E to ICAO Annex 16, Volume I;
- (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 all~~ aircraft types, 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 tilt-rotors evaluated in accordance with Chapter 13 and Attachment F to ICAO Annex 16, Volume I, Chapter 7 of the ICAO Environmental Technical Manual, Volume I; and
- (j) 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 ICAO Doc 9501 — Environmental Technical Manual, Volume I — Procedures for the Noise Certification of Aircraft, ~~First~~ ~~Second~~ Edition 2010~~4~~.

[Amdt. 36/1]
[Amdt. 36/2]
[Amdt. 36/3]
[Amdt. 36/4]

3.3. Draft Acceptable Means of Compliance and Guidance Material (Draft EASA Decision)

3.3.1. Draft text for amending the AMC and GM to Part-21

AMC and GM to Part-21

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SECTION B

...

Subpart I — Noise Certificates

GM 21.B.425(a) Noise certificates

1. Completion of the noise certificate by a Member State

1.1 Completion instructions

...

Block 10. Maximum landing mass (kg)

The maximum landing mass associated with the certificated noise levels of the aircraft in kilograms. The unit (kg) should be specified explicitly in order to avoid misunderstanding. If the primary unit of mass for the State of manufacture of the aircraft is different ~~from~~ **from** kilograms, the conversion factor used should be in accordance with Annex 5 to the Chicago Convention. This item will only be included in the noise certification documentation for noise certificates issued under Chapters 2, 3, 4, 5 ~~and~~, 12 and 14.

Block 11. Noise certification standard

The Chapter to which the subject aircraft is noise certificated. For ~~chapters~~ **Chapters** 2, 8, 10 and 11, the section specifying the noise limits should also be included.

Block 12. Additional modifications incorporated for the purpose of compliance with the applicable noise certification standards

This item should contain as a minimum all additional modifications to the basic aircraft as defined by Blocks 5, 7 and 8 that are essential in order to meet the requirements of this Annex to which the aircraft is certificated as given under Block 11. Other modifications that are not essential to meet the stated chapter but are needed to attain the certificated noise levels as given may also be included at the discretion of the certifying authority. The additional modifications should be given using unambiguous references, such as supplemental type certificate (STC) numbers, unique part numbers or type/model designators given by the manufacturer of the modification.

Block 13. Lateral/full-power noise level

The lateral/full-power noise level as defined in the relevant Chapter. It should specify the unit (e.g. EPNdB ~~(unit of the effective perceived~~

~~noise level~~) of the noise level and the noise level should be stated to the nearest tenth of a decibel (dB). This item is included only in noise certification documentation for aircraft certificated to Chapters 2, 3, 4, 5 ~~and~~, 12 and 14.

Block 14. Approach noise level

The approach noise level as defined in the relevant chapter. It should specify the unit (e.g. EPNdB) of the noise level and the noise level should be stated to the nearest tenth of a dB. This item is included only in noise certification documentation for aircraft certificated to Chapters 2, 3, 4, 5, 8 ~~and~~, 12, 13 and 14.

Block 15. Flyover noise level

The flyover noise level as defined in the relevant chapter. It should specify the unit (e.g. EPNdB) of the noise level and the noise level should be stated to the nearest tenth of a dB. This item is included only in noise certification documentation for aircraft certificated to Chapters 2, 3, 4, 5 ~~and~~, 12 and 14.

Block 16. Overflight noise level

The overflight noise level as defined in the relevant chapter. It should specify the unit (e.g. EPNdB or dB(A) ~~(unit of the A-weighted noise level)~~) of the noise level and the noise level should be stated to the nearest tenth of a dB. This item is included only in noise certification documentation for aircraft certificated to Chapters 6, 8 ~~and~~, 11 and 13. For tilt-rotors certificated according to Chapter 13 only, the overflight noise level established in VTOL/conversion mode needs to be stated.

Block 17. The take-off noise level

The take-off noise level as defined in the relevant chapter. It should specify the unit (e.g. EPNdB or dB(A)) of the noise level and the noise level should be stated to the nearest tenth of a dB. This item is included only in noise certification documentation for aircraft certificated to Chapters 8 ~~and~~, 10 and 13.

...

4. Regulatory Impact Assessment (RIA)

4.1. Issues to be addressed

At its 9th formal meeting from 4 to 15 February 2013, the ICAO Committee on Aviation Environmental Protection (CAEP/9) approved amendments to ICAO Annex 16 Volume I (Aircraft Noise) and Volume II (Engine Emissions) recommended by the the working groups of the Committee. These recommendations result from the work conducted during the three years preceding the meeting in accordance with the CAEP/9 Work Programme. The amendments approved at CAEP were then proposed to and adopted by the ICAO Council at its 201st meeting of March 2014. The adopted text will become applicable as Amendment 11 to ICAO Annex 16 Volume I, and as Amendment 8 to ICAO Annex 16 Volume II on 1 January 2015.

In addition to the amendments to ICAO Annex 16, revised versions of Volume I (Aircraft Noise) and Volume II (Engine Emissions) of the ICAO Doc 9501 Environmental Technical Manual (ETM) on the Use of Procedures in the Certification of Aircraft and Aircraft Engines respectively were approved at CAEP/9. The updated Environmental Technical Manual provides clarifications and additional Guidance Material.

Article 6 of the Basic Regulation makes direct reference to the current amendments of ICAO Annex 16, Volumes I and II (amendments 10 and 7 respectively). The alignment with the ICAO SARPs and Guidance Material in the area of environmental protection should be maintained. Leaving the current regulatory framework unchanged would lead to an uneven playing field between stakeholders at global level and would potentially create loopholes in the environmental certification of aircraft and aircraft engines.

4.1.1. Safety risk assessment

No safety risks were identified.

4.1.2. Who is affected?

The present rulemaking tasks affect:

- stakeholders: design and production organisations;
- authorities: NAAs and EASA;
- products: fixed-wing, rotary-wing and tilt-rotors;
- people impacted by aircraft noise and aircraft engine emissions.

4.1.3. How could the issue/problem evolve?

Aircraft noise and aircraft engine emissions are expected to grow over the next decades as the business-as-usual improvement of aircraft and aircraft engines' environmental performance will be insufficient to compensate the negative effect of traffic growth in the EU and worldwide. Noise and emissions standards are one of the key means of mitigating aviation's environmental impact (reduction at source) and are part of EASA's remit.

Furthermore, it is anticipated that ICAO States outside the EU will implement the amendments to Annex 16 as adopted by the ICAO Council at its 201st meeting. Leaving the EASA rules unchanged would therefore lead to an uneven playing field between actors of the aviation market and create major loopholes in the field of environmental certification.

4.2. Objectives

The specific objective of this proposal is to ensure a high uniform level of environmental protection by aligning the Agency's rules and AMC/GM with the ICAO Standards and Recommended Practices (Annex 16) and guidance (Environmental Technical Manual), as well as to provide a level playing field for all actors in the aviation market.

4.3. Policy options

The policy options are unchanged compared to the ones identified in the Pre-RIA, namely:

Table 1: Selected policy options

Option No	Short title	Description
0	Do nothing	Baseline option (no change in rules; risks remain as outlined in the issue analysis)
1	CAEP/9 implementation	To implement the CAEP/9 amendments as adopted by the ICAO Council

4.4. Analysis of impacts

4.4.1. Safety impact

No safety impacts were identified.

4.4.2. Environmental impact

Out of the two options considered, only Option 1 has a positive impact on the environment. The introduction of a new chapter to Annex 16 Volume I ensures that the aircraft applying for type certification in 2018 and beyond must meet more stringent noise limits. Other changes implemented in ICAO Annex 16, Volumes I and II, and in ICAO Doc 9501 (Environmental Technical Manual, Volumes I and II) will also 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.

4.4.3. Social impact

No social impacts are expected from the options in consideration other than the indirect effect of the mitigation of aviation's environmental impacts (positive impact of Option 1).

4.4.4. Economic impact

Both options have an economic impact.

It should be noted that the costs for stakeholders of designing, producing and operating aircraft compliant with the new CAEP/9 environmental requirements are also present under Option 0 ('do nothing'), as these will likely be applicable in world regions other than Europe.

Furthermore, Option 0 would increase the risk of European products not being acceptable in different parts of the world, with the associated costs that this would bring. Oppositely, as it improves the harmonisation of rules worldwide, Option 1 reduces the administrative burden for the industry and has therefore a positive economic impact.

4.4.5. General aviation and proportionality issues

No impacts on SMEs and/or General Aviation were identified.

4.4.6. Impact on 'Better Regulation' and harmonisation

Option 0 would create a misalignment with ICAO standards, recommended practices and guidance, which are considered leading in environmental protection. It would most probably lead to divergence with other environmental protection standards and would generate potential loopholes.

Out of the two options, only Option 1 ensures that EU rules are consistent with the global set of rules adopted by the ICAO Council.

4.5. Comparison and conclusion**4.5.1. Comparison of options**

Out of the two policy options considered, only Option 1 (implementation of CAEP/9 amendments) has positive impacts on all identified aspects (environmental, social, economic and harmonisation). On the other hand, Option 0 (do nothing) has negative impacts on all aspects but safety.

During a three-year work cycle (2010–2013), the proposed amendments to Annex 16 and the Environmental Technical Manual, and more specifically the new aircraft noise standard, were thoroughly discussed in the CAEP working groups by high-level technical experts from aviation authorities (including the Agency), the industry and NGOs. The amendments, as proposed, are consistent with the EU objective of improving environmental protection.

The pros and cons of each option are summarised in the below table:

	Safety	Environment	Economic	Social	Regulatory harmonisation
Option 0	0	-	-	-	-
Option 1	0	+	+	+	++

Based on the above, it is recommended to adopt the amendments approved by CAEP/9, i.e. to follow Option 1.

4.5.2. Monitoring and ex post evaluation

No specific monitoring or ex-post evaluation is planned for this rule.

5. References

5.1. Affected regulations

- 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 Commission Regulation (EU) No 6/2013 of 8 January 2013 (OJ L 4, 9.1.2013, p. 34)
- Commission Regulation (EU) No 748/2012 of 3 August 2012 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, and repealing Commission Regulation (EC) No 1702/2003 (OJ L 224, 21.8.2012, p.1), as last amended by Commission Regulation (EU) No 69/2014 of 27 January 2014 (OJ L 23, 28.1.2014, p. 12)

5.2. Affected CS, AMC and GM

- ED Decision 2012/020/R of 30 October 2012 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), as last amended by ED Decision 2014/007/R of 31 January 2014
- ED Decision 2003/3/RM of 17 October 2003 on Certification Specifications providing for Acceptable Means of Compliance for aircraft engine emissions and fuel venting (« CS-34 »), as last amended by ED Decision 2013/002/R of 23 January 2013
- ED Decision 2003/4/RM of 17 October 2003 on Certification Specifications providing for Acceptable Means of Compliance for aircraft noise (« CS-36 »), as last amended by ED Decision 2013/003/R of 23 January 2013

5.3. Reference documents

- ICAO CAEP/9 WP/61, Report of the 9th meeting of the Committee on Aviation Environmental Protection, February 2013
- ICAO State Letter AN 1/17.14 - 14/24, Adoption of Amendment 11 to Annex 16, Volume I, 10 April 2014
- ICAO State Letter AN 1/17.14 - 14/25, Adoption of Amendment 8 to Annex 16, Volume II, 10 April 2014
- Annex 16 to the Convention on International Civil Aviation, Volumes I and II
- ICAO Environmental Technical Manual (Doc 9501), Volumes I and II