



Explanatory Note to Decision 2019/016/R

Implementation of the CAEP/10 amendments on climate change, emissions and noise — CS-CO₂ Issue 1

RELATED NPA/CRD: 2017-01 — OPINION NO 09/2017 — RMT.0513 & RMT.0514

EXECUTIVE SUMMARY

This Decision addresses an environmental issue related to aeroplane CO₂ emissions.

The Decision is linked to the ICAO State Letters AN 1/17.14-16/53, AN 1/17.14-16/55 and AN 1/17.14-16/56 on the adoption of Amendments 12 and 9 to Annex 16 Volumes I and II respectively, and on the adoption of the First Issue of Annex 16 Volume III.

The specific objective is to provide a high uniform level of environmental protection in the European Union (EU) as well as a level playing field for all actors in the aviation market by aligning EU legislation with the latest ICAO Standards and Recommended Practices (SARPs) and guidance material on aircraft noise, aircraft engine emissions and aeroplane CO₂ emissions. The new amendments to these SARPs and guidance material were approved by the ICAO Committee on Aviation Environmental Protection at its 10th meeting (CAEP/10) in February 2016 and adopted by the ICAO Council at its 7th meeting of the 210th Session on 3 March 2017.

Amendment 12 to ICAO Annex 16 Volume I introduces updates to the existing aircraft noise measurement specifications.

Amendment 9 to ICAO Annex 16 Volume II updates existing aircraft engine emissions measurement specifications, and introduces a new non-volatile particulate matter (nvPM) emissions mass concentration standard as Chapter 4 into Part III. This is supplemented by Appendix 7 which contains the certification procedures, including measurement methodology, system operation and instrument calibration.

The new ICAO Annex 16 Volume III introduces an aeroplane CO₂ emissions standard for both new and in-production aeroplane types.

In addition to the amendments to ICAO Annex 16, CAEP/10 approved ICAO Doc 9501 'Environmental Technical Manual' (ETM), Volume I 'Procedures for the Noise Certification of Aircraft', Volume II 'Procedures for the Emissions Certification of Aircraft Engines', and a new Volume III 'Procedures for the CO₂ Emissions Certification of Aeroplanes'. The updated ETM volumes provide clarifications and additional guidance material to facilitate a harmonised implementation of ICAO Annex 16.

This Decision incorporates the changes of ICAO Annex 16 Volume III and ICAO ETM Volume III into the Certification Specifications for Aeroplane CO₂ Emissions (CS-CO₂). These changes ensure compliance with the latest ICAO SARPs on aeroplane CO₂ emissions.

Action area:	Aircraft noise (RMT.0513); climate change (RMT.0514)		
Affected rules:	Annex I (Part 21) and related AMC and GM; CS-CO ₂ (new)		
Affected stakeholders:	Design and production organisations; design approval holders (DAHs); national aviation authorities (NAAs); Member States		
Driver:	Environment	Rulemaking group:	No
Impact assessment:	Full (by ICAO CAEP)	Rulemaking Procedure:	Standard

● EASA rulemaking process



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1. About this Decision

The European Union Aviation Safety Agency (EASA) developed ED Decision 2019/016/R in line with Regulation (EU) 2018/1139¹ ('Basic Regulation') and the Rulemaking Procedure².

This rulemaking activity is included in the latest European Plan for Aviation Safety (EPAS)³ under rulemaking task RMT.0513 and RMT.0514. The scope and timescales of the task were defined in the related Terms of Reference for RMT.0513 and RMT.0514 'Implementation of the CAEP/10 amendments: Climate change, emissions and noise' Issue 1⁴.

The draft text of this Decision has been developed by EASA. All interested parties were consulted through Notice of Proposed Amendment (NPA) 2017-01 'Implementation of the CAEP/10 amendments on climate change, emissions and noise'^{5,6}. 47 comments were received from all interested parties, including industry, NAAs, and non-governmental organisations.

EASA reviewed the comments received during the consultation. The comments received and the EASA responses to them were presented in Comment-Response Document (CRD) 2017-01⁷. Based on the comments received, EASA developed and published Opinion No 09/2017 'Implementation of the CAEP/10 amendments on climate change, emissions and noise'⁸ on 7 November 2017 which was addressed to the European Commission. The related EU regulation (Regulation (EU) 2018/1139) was adopted on 4 July 2018 (OJ L 212, 22.8.2018, p. 1).

The final text of this Decision with the related certification specifications (CS-CO₂ Issue 1) has been developed by EASA.

The major milestones of this rulemaking activity are presented on the title page.

¹ Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91 (OJ L 212, 22.8.2018, p. 1) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1535612134845&uri=CELEX:32018R1139>).

² EASA is bound to follow a structured rulemaking process as required by Article 115(1) of Regulation (EU) 2018/1139. Such a process has been adopted by the EASA Management Board (MB) and is referred to as the 'Rulemaking Procedure'. See MB Decision No 18-2015 of 15 December 2015 replacing Decision 01/2012 concerning the procedure to be applied by EASA for the issuing of opinions, certification specifications and guidance material (<http://www.easa.europa.eu/the-agency/management-board/decisions/easa-mb-decision-18-2015-rulemaking-procedure>).

³ https://www.easa.europa.eu/document-library/general-publications?publication_type%5B%5D=2467

⁴ <https://www.easa.europa.eu/document-library/terms-of-reference-and-group-compositions/tor-rmt0513-and-rmt0514>

⁵ In accordance with Article 115 of Regulation (EU) 2018/1139, and Articles 6(3) and 7 of the Rulemaking Procedure.

⁶ <https://www.easa.europa.eu/document-library/notices-of-proposed-amendment/npa-2017-01>

⁷ <https://www.easa.europa.eu/document-library/comment-response-documents/crd-2017-01>

⁸ <https://www.easa.europa.eu/document-library/opinions/opinion-092017>



2. In summary — why and what

2.1. Why we need to change the CSs

The ICAO Council adopted the amendments to its Annex 16 at its 7th meeting of the 210th Session on 3 March 2017 as proposed by the Committee on Aviation Environmental Protection at its 10th meeting (CAEP/10) in February 2016. These amendments include:

- Amendment 12 to ICAO Annex 16 Volume I which introduces updates to the existing aircraft noise measurement specifications;
- Amendment 9 to ICAO Annex 16 Volume II which updates existing aircraft engine emissions measurement specifications, and introduces a new nvPM emissions mass concentration standard as Chapter 4 into Part III. This is supplemented by Appendix 7 which contains the certification procedures, including measurement methodology, system operation and instrument calibration;
- the new ICAO Annex 16 Volume III which introduces an aeroplane CO₂ emissions standard for both new and in-production aeroplane types.

In addition to the amendments to ICAO Annex 16, CAEP/10 approved ICAO Doc 9501 'Environmental Technical Manual' (ETM), Volume I 'Procedures for the Noise Certification of Aircraft', Volume II 'Procedures for the Emissions Certification of Aircraft Engines', and a new Volume III 'Procedures for the CO₂ Emissions Certification of Aeroplanes'. The updated ETM volumes provide clarifications and additional guidance material to facilitate a harmonised implementation of ICAO Annex 16.

Following the publication of EASA Opinion No 09/2017, amendments from Annex 16 Volumes I, II and III were included in Chapter III, Section I, Article 9 of the Basic Regulation, and Annex I (Part 21) to Regulation (EU) No 748/2012⁹ was amended. The Certification Specification for Aeroplane CO₂ Emissions (CS-CO₂) now need to be issued to ensure that all EU regulations in the field of aviation environmental protection are aligned with the latest ICAO SARPs.

2.2. What we want to achieve — objectives

The overall objectives of the EASA system are defined in Article 1 of the Basic Regulation. This Decision will contribute to the achievement of the overall objectives by addressing the issues outlined in Section 2.1.

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 sector, by aligning the European implementing rules (IRs), acceptable means of compliance and guidance material (AMC and GM) to Part 21 and related CSs with the ICAO SARPs (ICAO Annex 16 'Environmental Protection') and guidance (Environmental Technical Manual (ETM)).

2.3. How we want to achieve it — overview of the amendments

The final text of CS-CO₂ is the same as that initially presented in NPA 2017-01 with some changes due to the deletion of point 21.A.18 and the creation of the new reference to point 21.B.85 of Commission

⁹ 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 (OJ L 224, 21.8.2012, p. 1) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1563291412411&uri=CELEX:32012R0748>).

Delegated Regulation (EU) 2019/897¹⁰, which amended Commission Regulation (EU) No 748/2012. CS CO₂.1 refers to point 21.B.85(d).

As proposed in NPA 2017-01, AMC CO₂.1 refers to the appendices to ICAO Annex 16 Volume III. GM CO₂.1 refers to the new guidance text of the ICAO ETM Volume III.

¹⁰ Commission Delegated Regulation (EU) 2019/897 of 12 March 2019 amending Regulation (EU) No 748/2012 as regards the inclusion of risk-based compliance verification in Annex I and the implementation of requirements for environmental protection (OJ L 144, 3.6.2019, p. 1) (<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1563291613880&uri=CELEX:32019R0897>).



3. References

3.1. Related regulations

- Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91 (OJ L 212, 22.8.2018, p. 1)
- 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 (OJ L 224, 21.8.2012, p. 1)
- Commission Delegated Regulation (EU) 2019/897 of 12 March 2019 amending Regulation (EU) No 748/2012 as regards the inclusion of risk-based compliance verification in Annex I and the implementation of requirements for environmental protection (OJ L 144, 3.6.2019, p. 1)

3.2. Related decisions

- Upcoming Decision 201X/XXX/R of the Executive Director of the Agency of dd Month 201X amending the 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 organisations ('AMC and GM to Part 21'), which are affected by Commission Delegated Regulation (EU) 2019/897 of 12 March 2019 amending Regulation (EU) No 748/2012 as regards the inclusion of risk-based compliance verification in Annex I and the implementation of requirements for environmental protection (OJ L 144, 3.6.2019, p. 1)

3.3. Other reference documents

- ICAO Annex 16 'Environmental Protection' — Volume I 'Aircraft Noise', Eighth Edition, July 2017
- ICAO Annex 16 'Environmental Protection' — Volume II 'Aircraft Engine Emissions', Fourth Edition, July 2017
- ICAO Annex 16 'Environmental Protection' — Volume III 'Aeroplane CO₂ Emissions', First Edition, July 2017
- ICAO Doc 9501 'Environmental Technical Manual' — Volume I 'Procedures for the Noise Certification of Aircraft', Third Edition, 2018
- ICAO Doc 9501 'Environmental Technical Manual' — Volume II 'Procedures for the Emissions Certification of Aircraft Engines', Third Edition, 2018
- ICAO Doc 9501 'Environmental Technical Manual' — Volume III 'Procedures for the CO₂ Emissions Certification of Aeroplanes', First Edition, 2018

