



**European Aviation Safety Agency
Rulemaking Directorate**

EXPLANATORY NOTE

AMC & GM to Part-21

1. GENERAL

Executive Director Decision No. 2011/006/R amends Decision No. 2003/01/RM of 17 October 2003 (AMC & GM to Part-21 Initial Issue), as last amended by the Executive Director Decision 2009/016/R of 16 December 2010. It represents the output from the following EASA rulemaking task:

Rulemaking Task No.	TITLE	NPA No.
21.059	Environmental protection – classification of changes to a type design	2010-13

The Notice of Proposed Amendment (NPA) has been subject to consultation in accordance with Article 52(1)(c) of the Basic Regulation¹ and Articles 5 and 6 of the Rulemaking Procedure established by the Management Board².

2. RULEMAKING TASK 21.059

The purpose of Rulemaking Task 21.059 is to amend Decision 2003/1/RM of the Executive Director of 17 October 2003³ to develop Guidance Material for Appendix A to Paragraph GM 21A.91 of the AMC and GM to Part-21 concerning environmental protection issues.

¹ Regulation (EC) No 216/2008 of the European Parliament and of 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). Regulation as last amended by Regulation (EC) No 1108/2009 of the European Parliament and of the Council of 21 October 2009 (OJ L 309, 24.11.2009, p. 51)

² 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 08-2007-03, 13.6.2007.

³ 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'). Decision as last amended by Decision 2010/001/R of the Executive Director of the Agency of 23 March 2010.

Paragraph 21A.91 of Part-21 of Commission Regulation (EC) No 1702/2003⁴ defines the classification of changes in type design as being “minor” or “major”. According to Paragraph 21A.91, a minor change is one that, as regards environmental protection, has no appreciable effect on noise, fuel venting and exhaust emissions. Further clarification is provided in Paragraph GM 21A.91 of AMC and GM to Part-21. In Appendix A to GM 21A.91 examples, per discipline, of changes which might result in a major change are given to support applicants when applying for a change to a type design. Concerning environmental protection, Paragraph 8 only contained the following statement: [A major change is] “a change that introduces an increase in noise and emissions”.

This statement does not completely describe all major changes related to environmental protection. Concerning emissions (fuel venting and smoke and engine gaseous emissions), a major change is described as a change that introduces an appreciable increase in emissions levels. However, a decrease in emissions levels is also a major change. Concerning noise, a major change is a change that introduces an appreciable increase in noise levels. However, a change which introduces an appreciable reduction in noise levels, for which the applicant wishes to take credit, is also a major change.

Based on practical experience in the past years, when handling applications for a change to a type design, the Agency came to the conclusion that it would be useful to provide specific examples. These examples of changes are intended to clarify and to illustrate what changes might cause an appreciable change in the product’s environmental characteristics, i.e. lead to a change to the environmental protection certification levels. It has to be emphasised that the examples given do not introduce any new practice; they just describe current practice.

For further information on Rulemaking Task No. 21.059 and the justification consult NPA 2010-13 ‘Environmental protection – classification of changes of type design’ which is available on the Agency’s website⁵.

Concerning NPA 2010-13 the Agency received 38 comments. The majority of the comments received support the approach of the Agency. The Agency has addressed and responded to the comments in a Comment Response Document (CRD) to NPA 2010-13 which is also available on the Agency’s website⁵. Some of the comments led to changes of the original proposal (for details see the CRD).

The reactions towards the CRD and the Agency’s responses are listed below. Compared to the CRD only editorial changes have been made to the final text published as an Annex to the Decision of the Executive Director of the European Aviation Safety Agency.

⁴ 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). Regulation as last amended by Regulation (EC) 1194/2009 of 30 November 2009 (OJ L 321, 8.12.2009, p. 5).

⁵ http://www.easa.europa.eu/ws_prod/r/r_archives.php.

2.1 CRD REACTIONS

The Agency received the following reactions in response to CRD to NPA 2010-13:

CRD Reaction No.	Reaction by:	Reaction	EASA Response
1	DGAC France	DGAC France concurs with the final EASA proposed amendment developed within the CRD.	Noted. The Agency thanks DGAC France for the reaction.
2	FAA	The FAA has reviewed this CRD and has no comments.	Noted. The Agency thanks the FAA for the reaction.
3	SWISS International Airlines/B. Pfister	SWISS Intl takes note of the CRD without further reactions.	Noted. The Agency thanks SWISS International Airlines for the reaction.
4	UK CAA	Please be advised that the UK CAA has no comments to make on NPA 2010-13: Environmental Protection - classification of changes to a type design.	Noted. The Agency thanks UK CAA for the reaction.
5	Francis Fagegaltier Services	<p>Reaction to EASA's response to comment No. 9 towards the NPA by Francis Fagegaltier Services: The grammar could lead to both interpretations. However, it seems that EASA response is not in line with its own published documents which are supposed to provide the official interpretation of 21A.91, eliminating the ambiguity of the grammar.</p> <p>Indeed, EASA has published GM 21A.91 and GM 21A.101 which are based on years of practice in applying and understanding the definition of "minor changes" which has been existence for many years (starting with JAR-21). For example, in GM 21A.101 paragraph 2 a we find this evidence:</p> <p><i>"Minor changes as defined in 21A.91 are considered to have no appreciable effect on airworthiness and are therefore by definition not significant."</i></p> <p>This is evidence that the words "affecting the airworthiness of the</p>	<p>Not accepted. The effect a change has on the environmental characteristics of a product was introduced into EASA Part 21A.91 to intentionally include the extent of that effect into the change classification process. This is in contrast to JAR-21 where the effect that a change might have had on environmental characteristics was ignored.</p> <p>The quote from GM 21A.101 that "minor changes as defined in 21A.91 are considered to have no appreciable effect on airworthiness" should not be considered as a definition. It is rather a valid statement in the context of the enhancement of "safety through the incorporation of the latest requirements in the type-certification basis of changed products". It does not contradict the fact that the effect a change has</p>

CRD Reaction No.	Reaction by:	Reaction	EASA Response
		<p>product" is to be applied to all items listed in this paragraph 21A.91 as indicated in the comment. The comment was then made in agreement with EASA documentation.</p> <p>Therefore, we might have a choice:</p> <p>Either NPA 2010-13 is consistent with EU regulation 1702/2003 and GM 21A.91 as well as GM 21A.101 are not</p> <p>or</p> <p>the well established GM 21A.91 and GM 21A.101 interpretations are still valid and NPA 2010-13 conflicts with them.</p>	<p>on a product's environmental characteristic should also be taken into account.</p> <p>In conclusion NPA 2101-13 is consistent with the intended meanings of EU Regulation 1702/2003, GM 21A.91 and GM 21A.101, and the way in which each text has been consistently interpreted by the Agency.</p> <p>It should be noted that the Agency is revising GM 21A.101 (Rulemaking Task No. 21.018). The new text will not contain the wording the commenter gave reference to.</p>
6	Francis Fagegaltier Services	<p>Reaction to EASA's response to comment No. 10 towards the NPA by Francis Fagegaltier Services: The interpretation of 21A.91 is not specific to the commenter: It simply reflects the published EASA interpretation. See reaction to response to comment n°9 for details.</p>	<p>Not accepted. For details see above (EASA Response to CRD Comment No. 5).</p>
7	LAMA Europe	<p>Reaction to EASA's response to comment No. 32 towards the NPA by GAMA: LAMA EUROPE fully supports comments made by GAMA. We are sorry that they were not accepted. LAMA EUROPE is very concerned by the increasing level of complexity of EASA regulation for light aircraft used in Sports and Recreational Aviation.</p>	<p>Not accepted. The Agency refers to the response given to comment No. 32 by GAMA in the CRD to NPA 2010-13 as follows: The Agency emphasises that the proposed Guidance Material does not introduce any new practice; it just describes current practice by providing specific examples. These examples of changes are intended to clarify and to illustrate what changes might cause an appreciable change in the product's environmental characteristics. In the past, the lack of specific guidance material has led to</p>

CRD Reaction No.	Reaction by:	Reaction	EASA Response
			misunderstandings in daily practice between the applicant and the Agency leading to applicants having to undertake costly, last-minute, unexpected activity.