



Terms of Reference

for a rulemaking task

Fuel tank flammability reduction of already certificated large aeroplanes

RMT.0075 (26.008) – ISSUE 1 – 22/04/2013

	Applicability	Process map
Affected regulations and decisions:	Commission Regulation on Additional Airworthiness Requirements for Operations (still draft) (CS-26) (still draft)	Rulemaking lead R4 Concept paper Yes Rulemaking group No RIA type Full
Affected stakeholders:	Aeroplane manufacturers Operators Maintenance organisations Fuel Tank STC holders	Technical consultation during NPA drafting No Publication date of the NPA 2013/Q3 Duration of NPA consultation 3 months
Driver/origin:	Safety	Review group No
Reference:	See paragraph 4.3	Focussed consultation Yes Publication date of the Opinion N/A Publication date of the Decision 2014/Q3



1. Issue and reasoning for regulatory change

a) Regulatory framework of additional airworthiness specifications for operations and safety improvement

In the JAA system, specific additional airworthiness specifications were prescribed under JAR-26 (Additional Airworthiness Requirements for Operations). In particular, Subpart B was dedicated to commercial air transport (aeroplanes). If rendered mandatory by Member States' national laws, these specifications became applicable to operators of aeroplanes operating under commercial air transportation. Further subparts in JAR-26 were reserved for other categories of aircraft and operations, but were not used.

In the framework of EASA's rulemaking task 21.039¹, the Agency intended to define a new regulatory framework for the elaboration and adoption of additional airworthiness specifications for a given type of aircraft and type of operation. An initial proposal was made through NPA 2009-01, and the corresponding CRD 2009-01 was published on 13 May 2011. As a result of the comments received, the Agency has decided that the most adequate method to introduce additional airworthiness requirements on already certified products will be through dedicated Implementing Rules (IRs) adopted by the European Commission. These IRs will be annexed to a new Regulation as a new Annex ('Part-26'). This Part-26 will contain provisions relating to the applicability, implementation dates, and with regard to high level requirements. It will be supported by a new CS-26 containing the standard means to demonstrate compliance with Part-26 requirements.

Rulemaking task RMT.0110 (previously task 21.039(k)) covers the transfer of existing JAR-26 Amendment 3 requirements into the new Part-26 and CS-26. The Agency has already issued NPA 2012-13, proposing the new Implementing Rule and associated CS. In addition, the Agency is also developing new additional airworthiness specifications for operations which are identified in the Agency's Rulemaking Programme. This rulemaking task (RMT.0075) is one of these tasks.

b) Definition and history of the issue: Fuel tank flammability reduction of already certificated large aeroplanes

On 17 July 1996 a Boeing 747 exploded in flight near Long Island (TWA800 accident). Other similar events occurred during the last twenty-five years. The identified cause was explosion of the fuel tank but the exact ignition source was not identified.

In the past years the Agency already took various measures in order to prevent fuel tank ignition and reduce flammability exposure. The scope of these ToR deals with fuel tank flammability reduction.

Concerning the certification of new large aeroplane types, the Agency introduced in CS-25 Amendment 1, 6, and 9 new specifications addressing ignition prevention and fuel tank flammability exposure, as well as the eventual introduction of Flammability Reduction Means (FRM) to mitigate high flammability exposure (see NPA 2008-19² and CRD 2008-19³ for further explanations). This included the creation in CS-25 of a new CS 25.981(b) and the new Appendices M and N. The issue has, therefore, been addressed for new designs.

In order to evaluate the costs and benefits of installing FRM on already certificated large aeroplanes featuring high flammability exposure fuel tanks, a RIA was also performed in 2004 and revised in 2008.

Both the initial and revised version of the RIA concluded that a production cut-in date was justified, whereas a full retrofit was not considered justified.

¹ Rulemaking task 21.039 contains additional subtasks from 21.039(a) to 21.039(k) in support of the Operational Suitability Data concept. Please refer to the Rulemaking Programme for details.

² <http://easa.europa.eu/rulemaking/docs/npa/2008/NPA%202008-19.pdf>

³ <http://easa.europa.eu/rulemaking/docs/crd/2008/CRD%202008-19.pdf>



Following this RIA, the Agency issued in March 2010 the SIB 2010-10 for Production Cut-in date. This SIB recommended that from 1 January 2012, all new production airframes identified as having a fuel tank with high flammability exposure should be fitted with a FRM.

However, the conclusion of the RIA was not in line with FAA actions and regulations in terms of flammability reduction means on already certificated aircraft.

Following the conclusions of the NTSB report on the 1996 TWA800 accident, the FAA issued several regulations establishing new transport airplane fuel tank safety requirements.

Among those, in addition to an amendment to FAR-25, the FAA also issued FAR 26.33 and FAR26.35 which required a flammability exposure analysis on large aircraft fuel tanks and auxiliary body fuel tanks. The result of this analysis led the FAA to implement operational rule changes that require the retrofit of an FRM on in-service aircraft types that were found as having a high flammability exposure. This is the major difference between current EASA and FAA regulations.

Against this background, the Agency decided to launch a new rulemaking task to address the fuel tank flammability of already certificated large aeroplanes.

2. Objectives

The objectives of the European Union in the field of civil aviation are defined in Article 2 of Regulation (EC) No 216/2008.

The specific objective of this rulemaking task is to:

- propose additional airworthiness specifications for operations and safety improvement in order to reduce the fuel tank flammability of already certificated large aeroplanes (in service aircraft as well as production aircraft), and
- achieve harmonisation as far as possible with FAA regulations.

3. Specific tasks and deliverables

3.1. Tasks

- Analysis and update of the RIA for the Introduction of a Flammability Reduction System dated 2008
- Review of FAA regulations
- Draft new legal text and AMC/GM based on the preferred option

3.2. Deliverables

Drafting of an NPA proposing an amendment of Implementing Rule on additional airworthiness specifications for operations (including its Annex Part-26) and an amendment of CS-26 (all still draft).

3.3. Focussed consultation

Focussed consultation may include:

- meetings with stakeholders,
- RAG/TAGs and SSCC consultations (written or meeting).



4. Annex I: Reference documents

4.1. Affected regulations

- Commission Regulation on Additional Airworthiness Requirements for Operations (still draft, see NPA 2012-13⁴)

4.2. Affected decisions

- Decision of the Executive Director of the European Aviation Safety Agency for Additional Airworthiness Specifications for Operations (CS-26) (still draft, see NPA 2012-13)

4.3. Reference documents

- FAA SFAR 88: Fuel Tank System Fault Tolerance Evaluation Requirements
- FAR-25.981: Fuel tank ignition prevention
- FAR 26.35: Changes to type certificates affecting fuel tank flammability
- FAR 26.33: Fuel Tank Flammability
- CS-25.981: Fuel tank ignition prevention
- EASA Safety Information Bulletin (SIB) 2010-10 Fuel Tank Safety – Flammability Reduction System (FRS) for High Flammability Exposure Fuel Tanks – Production Cut-in.
- RIA for the introduction of a Flammability Reduction System (2004 issue and 2008 issue)
- NPA 2008-19: Fuel Tank Flammability Reduction

⁴ <http://easa.europa.eu/rulemaking/docs/npa/2012/NPA%202012-13.pdf>