

EASA

TERMS OF REFERENCE

TOR Nr:	25.056(b)
Issue:	2
Date:	22 November 2007
Regulatory reference:	Part-21, CS-25
Reference documents:	Regulatory Impact Assessment June 2004, FAA NPRM 2005/22997 and associated docket, EASA NPA 22.2005, EASA policy statement D 2005/CPRO/

1. Subject: Fuel tank flammability reduction

2. Problem / Statement of issue and justification; reason for regulatory evolution (regulatory tasks):

There have been five key accidents since the 1960 involving fuel tank explosions. Two are due to lightning strikes (B 707 in Elkton (USA) in 1963 and B 747 in Madrid (Spain) in 1976). Three were due to other causes (B 737 in Manila (Philippines) in 1990, B 747 in New-York (USA) in 1996 and B 737 in Bangkok (Thailand) in 2001).

A balanced approach has been agreed to address the issue of fuel tank explosions. This approach contains two ingredients:

- Ignition prevention
- Flammability reduction.

An intense cooperation (either through ARAC Working groups or through direct contacts) has occurred between EASA (JAA in the past), FAA, Transport Canada and CTA Brazil on the issue of fuel tank explosions. This task 25.056 has been identified as a subject of common interest with FAA.

From an EASA perspective the issue of ignition prevention has been now addressed by the amendment 1 to CS-25, the NPA 22.2005 (Fuel tank safety: incorporation of the CDCCL concept into acceptable means of compliance for Part-M, Part-145 and Part-66), the policy statement D 2005/CPRO/ (EASA policy statement on the process for developing instructions for maintenance and inspection of fuel tank system ignition source prevention) and the associated set of Airworthiness directives.

The purpose of this task is to address the second ingredient of the balanced approach taking into account all the work that has already been done.

The rulemaking framework for issues such as fuel tank safety, aging aircraft can be summed-up as follows:

- Amendment to certification specifications to improve the standards for fuel tank safety. This will address the case of future TC and future amendments to TC/ future STC in accordance with the changed product rule.
- Requirements on existing design approval holders (e.g. TC, STC holders) to review

- their existing designs to show compliance with the amended certification specification
- Requirements on operators to introduce modifications in individual aircraft and maintenance programmes resulting from the design review.
- Requirements to install certain systems in production aircraft and possibly to aircraft in service

The rulemaking framework will be further developed by the group working on task 21.039. (See attachment 1 for more details)

FAA has issued a proposed NPRM that includes a revision to Part 25 for new type designs as well as production and retrofit incorporation of means to address fuel tank flammability. Harmonization of the proposed fuel tank safety requirements is a goal of the FAA and EASA. EASA received an RIA that recommended production incorporation of flammability reduction means, but did not recommend retrofit. Since the original RIA was published significant new information is now available. This includes information presented in the FAA docket file such as the Sandia evaluation of the effectiveness of SFAR 88 ignition prevention means as well as the regulatory evaluation that estimates the cost of incorporating flammability reduction means as proposed in the NPRM. FRM technology has matured to the point where several airplanes equipped with flammability reduction means are now being delivered and are currently flying in-service.

The rulemaking task has been divided into two elements: this TOR that covers the production cut-in and the modification to CS-25 and task 25.056 (a) that covers the review of the RIA.

3. Objective: develop the necessary NPA and technical elements to address fuel tank flammability reduction.

4. Specific tasks and interface issues (Deliverables):

1. Propose a production cut-in issue with appropriate justifications.
2. Make the necessary adaptation to the modifications proposed in FAA NPRM 2005/22997 for FAR 25 (except for subpart I) for inclusion into CS-25

5. Working Methods (in addition to the applicable EASA procedures):

Agency

Maintain appropriate contacts with the group working on task 21.039

6. Time scale, milestones:

Proposal for task 1 and NPA for task 2: 1st quarter 2008

Airworthiness directive publication for task 1 and CS for task 2: 4th quarter 2008.

Outline of the EASA rulemaking framework for fuel tank safety issues.

- **Amendment to certification specifications to improve the standards for fuel tank safety issues:**
 - ✦ This is already addressed by our existing framework

- **Design Approval Holder rules and incorporation of new systems in production aircraft and possibly in aircraft in service:**
 - ✦ **Long term: included in the proposed revision of 1592/2002 to extend EASA scope**
 - ➔ Proposed revision to article 5 would include in the TC: Syllabus for Maintenance certifying staff type rating, syllabus of pilot type rating, MMEL, additional airworthiness specifications for a given type of operations
 - ➔ Task 21.039 of rulemaking inventory: Elaboration and adoption in the Community framework, of additional airworthiness specifications for a given type of aircraft and type of operation
 - ➔ NPA scheduled 3 quarter 2007

- **Design Approval Holder rules:**
 - ✦ **In the meantime:**
 - ➔ Use of letters or Airworthiness Directives to request 'reviews' by Design Approval Holders.

- **Maintenance rules:**
 - ✦ **General: Shared responsibility**
 - ➔ In the EU system, the responsibility is shared between the operators, the maintenance organisations and the design organisations.
 - ➔ The safeguards are already built into the European structure and it is not planned to redistribute the responsibilities.
 - ✦ **Maintenance programmes**
 - ➔ Part-M M.A.302 requires maintenance programmes to be based on data produced by TC holders, STC holders or organisations required to by Part-21.
 - ➔ Anything else requires the approval by the competent authority. In the case of ALLs this is EASA.
 - ✦ **Maintenance Data**
 - ➔ Part-145 145.A.45 requires AMOs to hold and use current maintenance data.
 - ➔ The maintenance instructions can only be modified with the approval of the competent authority.
 - ✦ **Maintenance Training**
 - ➔ Part-145 145.A.30(e) and Part-M M.A.706 require personnel to be competent and this competence to be evaluated in view of their tasks.
 - ➔ This is part of the organisation's expositions that is approved by the competent authority.
 - ✦ **Control of aircraft configuration**
 - ➔ Part-M M.A.301 requires operators to control the configuration of their aircraft and to have an embodiment policy for non mandatory modifications and for repairs
 - ➔ Furthermore, M.A.304 requires modifications and repairs to be accomplished in compliance with Part-21. The resulting maintenance data will then become maintenance data that needs approval to be changed.
 - ✦ **Maintenance rules: conclusion**
 - ➔ **There is no need to create new operational rules like in the US.**
 - ➔ **Development of AMC should be enough.**