



**OPINION No 05/2010**

**OF THE EUROPEAN AVIATION SAFETY AGENCY**

**of 18 October 2010**

**for a Commission Regulation (EU) No XX/2010**

**laying down common airspace usage requirements and operating procedures**

## I. General

1. The purpose of this Opinion is to assist the Commission by proposing an implementing rule laying down common airspace usage requirements and operating procedures. Regulation (EC) No 216/2008<sup>1</sup> (hereinafter referred to as the 'Basic Regulation'), as last amended by Regulation (EC) No 1108/2009<sup>2</sup>, establishes in Article 8b that its implementing measures shall allow for immediate reaction to established causes of accidents and serious incidents.
2. Furthermore, Articles 8 and 9 of the Basic Regulation require that ATM/ANS related safety requirements are imposed on:
  - a. operators of aircraft registered in a Member State or registered in a third country and operated by a Community operator (Article 4(1) (b) and (c)); and
  - b. operators of aircraft used by a third country operator (Article 4(1)(d)).

Therefore the proposed implementing rule is based on the essential requirements laid down in the Basic Regulation on 'use of the airspace'. These establish that all aircraft, (except for those that are excluded from the scope of the Basic Regulation by Articles 1(2)(a) and 4(4)), in all phases of flight or on the movement area of an aerodrome, shall be operated in accordance with the common general operating rules and any applicable procedure specified for the use of that airspace. It is further required that all airspace users (both community operators and third country operators) are equipped with the appropriate constituents.

3. The scope of this rulemaking activity is outlined in the Terms of Reference (ToR) ATM.002.
4. This Opinion has been adopted, following the procedure specified by the European Aviation Safety Agency's (the Agency) Management Board<sup>3</sup>, in accordance with the provisions of Article 19 of the Basic Regulation.
5. The proposed rule has taken into account the development of European Union and International Law (ICAO), as set out in the objectives of Article 2 of the Basic Regulation. The proposed rule is compliant with ICAO Standards and Recommended Practices in that it does not extend the equipage requirement to any additional aircraft population other than that already included by ICAO. However, the proposed rule does introduce the requirement to carry ACAS II with collision avoidance logic version 7.1 before the dates recently adopted by ICAO.

## II. Consultation

6. The Notice of Proposed Amendment (NPA) 2010-03<sup>4</sup> that contained the draft opinion for a Commission Regulation was published on the Agency's website on 26 March 2010.
7. By the closing date of 7 May 2010, the Agency had received 175 comments from national authorities, professional organisations and private companies.

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<sup>1</sup> 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).

<sup>2</sup> Regulation (EC) No 1108/2009 of the European Parliament and of the Council of 21 October 2009 amending Regulation (EC) No 216/2008 in the field of aerodromes, air traffic management and air navigation services and repealing Directive 2006/23/EC (OJ L 309, 24.11.2009, p. 51).

<sup>3</sup> Decision of the Management Board concerning the procedure to be applied by the Agency for the issuing of Opinions, Certifications Specifications and Guidance Material (Rulemaking Procedure). EASA MB 08-2007, 13.6.2007.

<sup>4</sup> See Rulemaking Archives at <http://easa.europa.eu/rulemaking/r-archives.php>.

8. All comments received have been acknowledged and incorporated into a Comment Response Document (CRD), which was published on the Agency's website on 16 September 2010. This CRD contains a list of all persons and organisations that have provided comments and the answers of the Agency to these comments.
9. All the comments received were supportive of the safety benefits achieved by the use of ACAS II with collision avoidance logic version 7.1 and the clear majority were supportive of the early introduction. A few of the comments, although supporting of the safety benefits, requested that the date of introduction of these requirements would be harmonised with the FAA. However, since the FAA currently has indicated no clear plans to implement this standard such harmonisation is not possible. A few additional comments requested to delay any introduction of this requirement awaiting possible changes to airspace design and use that will be developed by SESAR and NextGen. However, since no implementations plans are yet available for these possible changes, it was also not possible to take these requests into account.
10. Due to the importance of the subject in addressing known safety issues, thus enabling early adoption and hence notification to effected stakeholders in a timely manner, the Agency reduced the CRD consultation period to three weeks. By 8 October 2010 16 reactions to the CRD from 9 commentators were received. Reactions related to the Acceptable Means of Compliance which is not the subject of this Opinion will be subsequently addressed in the respective Agency Decision. The main reactions related to the subject of this Opinion (proposed Implementing Rule) are as follows:

A number of reactions from one commentator were received that questioned the applicability of general aircraft traffic (GAT) provisions to state aircraft and requested the use of the NPA text. The Agency agrees with the reactions regarding the applicability to state aircraft and has reintroduced the original NPA text. However, the Agency recognises that the full safety benefits of ACAS II can only be achieved when all aircraft operating as GAT are equipped.

Another reaction proposed that the application of the proposed rule to unmanned aircraft systems (UAS) was incorrect and not in accordance with ICAO policy. The Agency accepts this proposal and has introduced paragraph AUR.ACAS.100(d). However, a number of technical and operational issues need to be addressed prior to permitting UAS operation in non segregated airspace thus the ICAO UAS policy cannot be used as firm governing principles.

A further reaction proposed to amend AUR.ACAS.100(b) requiring aircraft, that are not within the scope of the mandatory carriage requirement, which are equipped with ACAS II to install software version 7.1 as a voluntary requirement. The Agency agrees with this proposal and has introduced AUR.ACAS 100(c) as the voluntary requirement for such aircraft.

One reaction suggested extending the scope of the proposed implementing rule to include the carriage of ACAS II to all IFR capable aircraft as this would result in additional safety benefits. The extension of scope for the carriage of ACAS II beyond the existing aircraft population that is already established by ICAO was beyond the scope of this task. The Agency recognises that additional safety benefits would most likely be obtained by increasing the scope; however, any such extension of the scope would be subject to a specific rulemaking task, in accordance to the Agency's rulemaking procedures and including a full regulatory impact assessment.

The other reactions have not led the Agency to make additional changes in its proposal; however, a further review by the Agency revealed minor textual inconsistencies, which have been corrected. It should be noted that the numbering applicable to Part AUR.ACAS has been amended to be in accordance with the Agency's rule number convention and the collation between them is as follows;

Old number	New number
AUR.ACAS.001	AUR.ACAS.1005
AUR.ACAS.100	AUR.ACAS.2005
AUR.ACAS.200	AUR.ACAS.3005
AUR.ACAS.300	AUR.ACAS.3010

### III. Content of the Opinion of the Agency

11. The Basic Regulation empowers the Commission to adopt measures for the implementation of the Basic Regulation in its essential requirements with respect to establishing and maintaining a high uniform level of aviation safety in the European Union. When developing such implementing measures the Commission shall ensure that they allow for a response to established causes of accidents and serious incidents.
12. This Opinion contains an Agency's proposal for a Commission Regulation implementing the Basic Regulation and its essential requirements, as part of the rule structure supporting the total system approach to aviation safety and in line with the principles of 'better regulation'. This proposed regulation introduces common airspace usage requirements to ensure a high and uniform level of safety. It is the Agency's intent to propose additional annexes and subparts to this Regulation in the future as necessary to address additional mandatory issues. Thus the rule has been structured in such a manner that the main Articles of the Regulation only focus on the general applicability of the requirements and on the dates for their entry into force. The annexes and subparts provide the technical requirements and refine the applicability accordingly. Any additional annexes and subparts will naturally be subject to a specific rulemaking task and consultation in accordance with the Agency's rulemaking procedures.
13. The current scope of this proposed rule introduces a requirement for all aircraft operating within the European Union's airspace to be equipped with an airborne collision system known as ACAS II with collision avoidance logic version 7.1. The introduction of such a system is to address known safety issues.
14. As a result of a series of serious incidents and accidents in which safety margins have been lost (including two accidents: Yaizu 2001 and Überlingen 2002), EUROCONTROL sponsored the SIRE team to undertake a series of safety studies. These studies revealed two major reasons for these serious incidents and accidents:
  - failure of ACAS II to reverse some Resolution Advisories (RA) when a reversal is required to resolve the threat of collision;
  - frequent instances of flight crews unintentional incorrect manoeuvres in the wrong direction to the 'Adjust Vertical Speed Adjust' RA.

Further studies concluded that due to the combination of these two reasons aircraft equipped with ACAS II with collision avoidance logic version 7.0 face a mid-air collision risk of  $2.7 \times 10^{-8}$  per flight hour.
15. ACAS II with collision avoidance logic version 7.1 reflects the state of the art (including best practices, scientific and technical progress) in the field of airborne collision avoidance systems and will contribute to lowering the mid-air collision risk mentioned above.
16. The proposed rule is applicable to all turbine-powered aeroplanes with a maximum certificated take-off mass exceeding 5 700 kg or authorised to carry more than 19 passengers. It is proposed that the rule will become effective on 1st March 2012 for

newly built aircraft and on 1st December 2015 for all other aircraft. The 2012 date for the initial application has been proposed taking into account the time required for manufactures to initiate design and production changes.

17. The aircraft affected by this proposed rule are those to which the existing limitations and exceptions specified in ICAO Annex 6 Operation of Aircraft Part 1 International Commercial Air Transport – Aeroplanes and ICAO Doc 7030/4 regional supplementary procedures apply. Also those aircraft which are not affected by the current requirement but have voluntarily installed an ACAS II system are required to be equipped with ACAS II containing collision avoidance logic version 7.1.
18. The draft implementing rule as proposed by this Opinion reflects the changes as a result of the public consultation (NPA 2010-03) as published in the CRD to the NPA.

Cologne, 18 October 2010.

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Executive Director