



**TERMS OF REFERENCE**

**Task Nr:** ETSO.007b  
**Issue:** 1  
**Date:** 9 March 2009  
**Regulatory reference:** CS-European Technical Standard Order (ETSO)<sup>1</sup>  
**Reference documents:** EUROCONTROL document – Decision criteria for regulatory measures on TCAS II version 7.1 Safety Issue Rectification Extension Plus Project (SIRE+ Project), ACAS/08-103 dated 25 July 2008

<b>1. Subject:</b> Updating of ETSO-C119b – Traffic Alert and Collision Avoidance System (TCAS) Airborne Equipment, TCAS II
<b>2. Problem/Statement of issue and justification; reason for regulatory evolution (regulatory tasks):</b> Following a series of mid-air encounters in which safety margins have been lost, a series of safety studies Ref 1, were undertaken. These studies revealed two major reasons for the loss of separation: <ul style="list-style-type: none"><li>• failure of TCAS II to reverse some Resolution Advisories (RA) when a reversal is required to resolve the threat of collision; and</li><li>• frequent instances of flight crews unintentional incorrect manoeuvres in the wrong direction to the “Adjust Vertical Speed” RA.</li></ul> These studies also concluded that due to the combination of these two safety issues aircraft equipped with TCAS II version 7.0 faces a mid-air collision risk of $2.7 \times 10^{-8}$ per flight hour. These studies have been evaluated by EUROCAE and RTCA, Inc. with the participation of stakeholders, and have resulted in the publication of revised Minimum Operational Performance Standards (MOPS) (ED-143 and DO-185B).
<b>3. Objective:</b> Incorporate the revised standard into the EASA ETSO
<b>4. Specific tasks and interface issues (Deliverables):</b> Update ETSO-C119b - Traffic Alert and Collision Avoidance System (TCAS) Airborne Equipment, TCAS II
<b>5. Working Methods</b> (in addition to the applicable Agency procedures): Agency
<b>6. Time scale, milestones:</b> NPA to be issued 1 <sup>st</sup> quarter 2009 Decision to be issued 4 <sup>th</sup> quarter 2009

<sup>1</sup> Agency Decision 2003/10/RM of 24 October 2003 on certification specifications, including airworthiness codes and acceptable means of compliance, for European Technical Standard Orders («CS-ETSO»). Decision as last amended by Decision 2007/017/R.