

**Proposed Equivalent Safety Finding on “CAT 3 Operations - Super Fail Passive Anomalies”**

**Applicable to Airbus A350-941**

**Introductory Note:**

The hereby presented Equivalent Safety Finding has been classified as an important Equivalent Safety Finding and as such shall be subject to public consultation, in accordance with EASA Management Board decision 12/2007 dated 11 September 2007, Article 3 (2.) of which states:

*"2. Deviations from the applicable airworthiness codes, environmental protection certification specifications and/or acceptable means of compliance with Part 21, as well as important special conditions and equivalent safety findings, shall be submitted to the panel of experts and be subject to a public consultation of at least 3 weeks, except if they have been previously agreed and published in the Official Publication of the Agency. The final decision shall be published in the Official Publication of the Agency."*

**Statement of Issue:**

The airworthiness requirements for Super Fail-passive Category 3 Operations were originally developed and published in JAR NPA-AWO 12 (v3) dated 4<sup>th</sup> October 2002. Although used successfully as a stand-alone document for one aircraft certification exercise, this NPA was never embodied into JAR-AWO. The NPA was embodied into CS-AWO upon its first publication on 17<sup>th</sup> October 2003.

Since the publication of CS-AWO, a number of issues relating to the Super Fail-passive airworthiness criteria have been raised by some aircraft manufacturers and airworthiness authorities, in particular the non-intended applicability to all Category 3 operations of the additional requirements for super fail-passive Category 3 operations. These issues prompted the need to review the Super Fail-passive content of CS-AWO and to raise an additional NPA to provide clarification and additional AMC material. This review was accomplished by the CS-AWO Drafting Group under EASA Rulemaking Task RM AWO-002. The CS AWO drafting group has finished its work and produced its final report on 18 March 2007. Nevertheless, the results of this final report have not been officially introduced into an associated EASA NPA (draft NPA CS-AWO-17 was planned to address this subject) nor have they been introduced in the CS-AWO up to now.

**Airbus A350-941 – Equivalent Safety Finding to CS-AWO 300(b), 304(c), 321(b)(3), 364 and 365 - CAT 3 Operations - Super Fail Passive Anomalies –**

**Design Proposal:**

Airbus has no intention to apply for super fail passive operations, since the A350 is missing some of the aircraft characteristics (height of the pilot's eyes above the runway at Decision Height, low approach speed) suitable for super fail-passive operations. Airbus has proposed to introduce the material of draft NPA CS-AWO 17 in the A350 certification in order to come back to the initial JAR AWO 2 requirements for Category 3 operations, applied on last Airbus programs (A380, A340-500/-600, ...).

### **Justification:**

The introduction of the draft NPA CS-AWO 17 material in addition to the current CS-AWO does not down-grade, nor improve the safety of category 3 operations.

The below ESF introduces a new definition for Super Fail-passive Automatic Landing System in order to distinguish the applicability of specific requirements and AMC material between “fail-passive” and “super fail-passive” automatic landing systems.

### **Safety Equivalency Demonstration:**

The requirements below are used for the Type Certification of the A350 aircraft and are considered to ensure an equivalent level of safety to a literal compliance to the following CS AWO requirements:

CS-AWO 300 (b)	Terminology
CS-AWO 304 (c)	Control of Flight Path and Ground Roll
CS-AWO 321 (b) (3)	Installed Equipment
CS-AWO 364	Fail Passive Automatic Landing System
CS-AWO 365	Fail Operational Landing System

1. Revise CS-AWO-300 (b) paragraph (4) to add new definition for Super Fail-passive Automatic Landing System as follows and re-number subsequent paragraphs.

(4) Super Fail-passive Automatic Landing System: An automatic landing system which meets the requirements of paragraph (3) above but has additional features such as automatic align, roll-out and go-around modes which, along with other aircraft characteristics defined under CS-AWO 321 (b) (2), permit operations in lower RVRs than less sophisticated fail passive landing systems.

2. Revise CS-AWO 304 (c) to read as follows:  
(c) If the landing rollout is to be accomplished automatically using rudder control, the rudder axis should be engaged during the approach phase.
3. Revise CS-AWO 321 (b)(3)(i) to read as follows:  
(3) (i) Super Fail-passive automatic landing system, provided that:
4. Revise CS-AWO 364 title as follows:  
CS-AWO 364 Fail-passive automatic landing system including Super Fail-passive  
(See AMC No.1 and AMC No.2 to CS-AWO 364(a)  
Delete AMC references from end of paragraph 364 (b).
5. Revise CS-AWO 365 (b) and (c) as follows:  
Delete all references to AMC No. 1 to CS-AWO 361