KMH/Note/340
Issue 2 07 11-07

EUROCAE/WG 49

Working Paper WG 49……..

EUROCAE WG49

Cologne - November 2007

Proposed Transponder Labeling Method Based on Equipment Level and Installed Optional Additional Features.

1. Introduction

This Working Paper proposes to include, in Section 1.4.2.2 of Eurocae ED 73, a method for labeling the Mode S Transponder based on equipment Level, Minimum Peak Output Power and installed optional additional features. It is intended that the transponder ETSO will refer to this section as a labeling requirement in addition to the standard ETSO marking requirements.

The text below in proposed for insertion in ED 73 ~~and has been harmonised with SC209.~~

Issue 2 includes minor changes introduced at the Eurocae WG 49 meeting held on 6/7/8 November 2007 in Cologne. There are highlighted in yellow. **These additional changes are not yet harmonized with the FAA.**

1.4.2.2 Transponder Labelling

This section describes the labeling of the transponder and gives a brief introduction to the additional features which may be supported by the transponder.

Additional features:

• **ACAS Compatibility** – ACAS compatible transponders will have the capabilities of sections ……..

• **Antenna Diversity** – in large aircraft or co-installation with airborne collision avoidance systems may require the transponder to operate in the diversity mode, i.e., the use of two antennas, receivers and transmitting channels.

• **Extended Squitter** – extended squitter transponders will have the capabilities of sections ……

• **Dataflash Application** – transponders implementing dataflash mode will adhere to the requirements contained in Appendix C.

• **Hijack Mode Capability** – transponders implementing the hijack mode will adhere to the requirements contained in Appendix XX.

• **Elementary Surveillance** – elementary surveillance transponders will have the capabilities of sections …….

• **Enhanced Surveillance** – enhanced surveillance transponders will have the capabilities of sections ……..

• **Surveillance Identifier Code (SI)** – transponders with the ability to process SI codes have the capabilities of sections ……..

These additional features and corresponding identification codes are summarized in the following table:

Additional Feature	ID Code
ACAS Compatibility	**a**
Antenna Diversity	**d**
Extended Squitter	**e**
Dataflash	**f**
Hijack Mode Capability	**h**
Elementary Surveillance (only)	**l**
Enhanced Surveillance (including Elementary Surveillance)	**n**
Surveillance Identifier Code (SI)	**s**

Each transponder shall be clearly labeled with its actual functional level, minimum peak output power, and its optional additional features. The label shall contain the word "Level" followed by one digit between 1 and 5, followed by the ID codes for the incorporated optional additional features as shown in the table above, followed by the transponders' minimum peak output power designation as "Class 1" or "Class 2" (see §1.4.5),

Example No. 1 - For a level 2 transponder that incorporates extended squitter and elementary surveillance capability with a minimum peak output power of 70 watts(18.5 dBW) and SI capability); the transponder would be labeled "Level 2els, Class 2".

Example No. 2 - For a level 4 transponder that incorporates ACAS compatibility, antenna diversity, extended squitter and enhanced surveillance capability with a minimum peak output power of 125 watts (21.0 dBW) and SI capability; the transponder would be labeled "Level 4adlens, Class 1".

The label should be clearly visible when the transponder is mounted on the aircraft. In the case of a change of transponder level or capability the label must be changed appropriately.

NOTE: *For transponders where "Level" or "additional feature" might be changed through an approved software update, a means to display the labeling electronically would meet the above intent.*