RTCA Special Committee 186, Working Group 3

ADS-B 1090 MOPS, Revision A

Meeting #3

ACTION ITEM 2-5

1090 MHz ADS-B Format and Protocol Version Number

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SUMMARY

The formats and protocols for 1090 MHz ADS-B will evolve with time. It is necessary to define a version number so that users will be able to correctly receive and process ADS-B messages as the system evolves. This working paper proposes the addition of a version number subfield in the Operational Status Message.

The changes to Appendix A are provided. If accepted, corresponding change will be required to Sections 2.2 and 2.4.

1.0 Introduction

At the Melbourne meeting, the Working Group agreed to add a Version Number subfield to the Aircraft Operational Status message. The purpose of this subfield is to define the version number of the formats and protocols in use by the transmitting device. A version number is required because it is expected that the formats and protocols will evolve with time and more than one version may be in use during a transition period. The receiver uses the version number in order to correctly process ADS-B messages.

2.0 Proposed Approach

It is proposed that a version number subfield be defined in bits 41 to 44 of the Aircraft Operational Status Message.

2.1 New Paragraph A.4.11.11

The coding of this subfield will need to be defined in a new paragraph A.4.11.11 as follows:

A.4.11.11 Version Number (VN)

This 4-bit (41-44) subfield shall be used to indicate the version number of the formats and protocols in use on the aircraft installation. Encoding of the subfield shall be as shown in Table A-21.

Table A-21: Version Number Encoding

VERSION NUMBER SUBFIELD	
Coding	**Meaning**
0	Conformant to DO-260
1	Conformant to DO-260A
2 to 15	Reserved

2.2 Revised Figure A-12

The required changes to the format for the Aircraft Operational Status message are indicated on the following page.

Figure A-12: Aircraft Operational Status

BDS 6,5

1	MSB
2	
3	FORMAT TYPE CODE = 31
4	
5	LSB
6	MSB
7	Subtype Code=0
8	LSB
9	MSB
10	Enroute Operational Capabilities (CC-4)
11	(See A.4.11.3)
12	LSB
13	MSB
14	Terminal Area Operational Capabilities(CC-3)
15	(See A.4.11.4)
16	LSB
17	MSB
18	Approach/ Landing Operational Capabilities (CC-2)
19	(See A.4.11.5)
20	LSB
21	MSB
22	Surface Operational Capabilities (CC-1)
23	(See A.4.11.6)
24	LSB
25	MSB
26	Enroute Operational Capability Status (OM –4)
27	(See A.4.11.7)
28	LSB
29	MSB
30	Terminal Area Operational Capability Status (OM-3)
31	(See A.4.11.8)
32	LSB
33	MSB
34	Approach/ Landing Operational Capability Status (OM-2)
35	(See A.4.11.9)
36	LSB
37	MSB
38	Surface Operational Capability Status (OM-1)
39	(See A.4.11.10)
40	LSB
41	MSB
42	Version Number (VN)
43	(See A.4.11.11)
44	MSB
45	
46	
47	
48	
49	
50	Not Assigned
51	
52	
53	
54	
55	
56	

Purpose. To provide the capability class and current operational mode of ATC related applications on board the aircraft.