

CHANGE ISSUE – RTCA/DO-242

MASPS for ADS-B Rev. A

Tracking Information (committee secretary only)	
Change Issue Number	54
Submission Date	12/17/01
Status (open/closed/deferred)	Rev A - CLOSED
Last Action Date	2/22/02

Short Title for Change Issue:	Ability to inhibit broadcast of invalid altitude data at ATC's instruction, requested by Anchorage ARTCC in support of Capstone
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MASPS Document Reference:		Originator Information:	
Entire document (y/n)		Name	Chris Moody
Section number(s)	2.1.2.17	Phone	703 883 5506
Paragraph number(s)		E-mail	Cmoody@mitre.org
Table/Figure number(s)		Other	

Proposed Rationale for Consideration (originator should check all that apply):	
<input type="checkbox"/>	Item needed to support of near-term MASPS/MOPS development
X	DO-260/ED-102 1090 MHz Link MOPS Rev A
<input type="checkbox"/>	ASA MASPS
<input type="checkbox"/>	TIS-B MASPS
X	UAT MOPS
<input type="checkbox"/>	Item needed to support applications that have well defined concept of operation
<input type="checkbox"/>	Has complete application description
<input type="checkbox"/>	Has initial validation via operational test/evaluation
<input type="checkbox"/>	Has supporting analysis, if candidate stressing application
<input type="checkbox"/>	Item needed for harmonization with international requirements
<input type="checkbox"/>	Item identified during recent ADS-B development activities and operational evaluations
<input type="checkbox"/>	MASPS clarifications and correction item
<input type="checkbox"/>	Validation/modification of questioned MASPS requirement item
<input type="checkbox"/>	Military use provision item
<input type="checkbox"/>	New requirement item (must be associated with traffic surveillance to support ASAS)

Nature of Issue:	<input type="checkbox"/> Editorial	<input type="checkbox"/> Clarity	<input type="checkbox"/> Performance	<input checked="" type="checkbox"/> Functional
<u>Issue Description:</u>				
<p>Anchorage ARTCC sent a letter to RTCA requesting ADS-B support for several functions currently supported by a transponder. These recommendations are based on their experiences using ADS-B to provide radar-like services as part of the Capstone project.</p> <p>One such capability is for the cockpit to be able to inhibit the broadcast of altitude data when so requested by ATC for circumstances such as it is known the altitude is faulty.</p>				

Originator's proposed resolution:

The author of the Issue paper did not provide a suggested resolution. Tom Foster proposed two possible ways to word this requirement. These are shown below in yellow highlight and were to be considered by WG6 at their February 2002 meeting in Arlington.

2.1.2.6 Altitude

Both barometric pressure altitude and geometric altitude (height above the WGS-84 ellipsoid) shall (R2.17) be reported, if available to the transmitting ADS-B subsystem. Some applications may have to compensate if only one source is available. However, when an A/V is operating on the airport surface, the altitude is not required to be reported, provided that the A/V indicates that it is on the surface.

Altitude shall (R2.19) be provided with a range from -1,000 ft up to +100,000 ft. For fixed or movable obstacles, the altitude of the highest point should be reported.

The cockpit shall (R2.xx) have the ability to inhibit the broadcast of data from either or both altitude sources if it is determined by the pilots or ATC that the broadcast altitude is currently invalid.

OR

ADS-B link equipment shall (R2.xx) support a means for the pilot to indicate that the broadcast of altitude information from pressure altitude sources is invalid. This capability can be used at the request of ATC or when altitude is determined to be invalid by the pilot. This capability is in addition to the setting of the "Pressure Altitude Valid" bit in the State Vector report when altitude source equipment indicates the data is invalid.

Note: In this context, a "movable obstacle" means an obstacle that can change its position, but only slowly, so that its horizontal velocity may be ignored.

Ad Hoc Group Deliberations:

February 22, 2002: This Issue Paper was reviewed at the February 2002 WG6 meeting in Arlington. It was agreed that this Issue Paper will be addressed in Revision A. After some discussion the 2nd proposed new paragraph found above was accepted for the final draft DO-242A. That text (found below) will close this Issue Paper.

Working Group 6 Final Resolution:

The below paragraph was added to 2.1.2.6 "Altitude" in the draft DO-242A delivered to RTCA on March 4, 2002:

ADS-B link equipment **shall** (R2.xx) support a means for the pilot to indicate that the broadcast of altitude information from pressure altitude sources is invalid. This capability can be used at the request of ATC or when altitude is determined to be invalid by the pilot. This capability is in addition to the setting of the "Pressure Altitude Valid" bit in the State Vector report when altitude source equipment indicates the data is invalid.