MASPS for ADS-B Rev. A

Tracking Information (committee secretary only)	
Change Issue Number	29
Submission Date	3/21/01
Status (open/closed/deferred)	REJECTED
Last Action Date	8/30/01

Short Title for Change Issue:	Baro/geo altitude reporting

MASPS Document Reference:		Originator Information:	
Entire document (y/n)		Name	Stephen Heppe
Section number(s)		Phone	+1 703 589-1522
Paragraph number(s)	2.1.2.2.1.2	E-mail	Steveheppe@adsi-m4.com
Table/Figure number(s)		Other	

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

Nature of Issue:		Editorial	X	Clarity		Performance	X	Functional

Issue Description:

Both barometric and geometric altitude represent potentially valuable information. Barometric altitude has current applicability in virtually all airspace domains whereas geometric altitude may enable certain future applications in limited domains (e.g., precision approach monitoring and parallel approach monitoring). Certain aircraft will be capable of transmitting both types of altitude, but there is no operational requirement for geometric altitude in the vast majority of cases. Hence the MASPS should not require it as a default in all SV reports.

Originator's proposed resolution if any:

The attached replacement text for paragraph 2.1.2.2.1.2 is suggested as a means to capture the dichotomy between barometric and geometric altitude. Note that the phrase "or equivalent" is a reference to the technique of transmitting a base altitude (e.g., baro) along with a baro-geo offset, instead of baro altitude and geo altitude.

Originator's proposed resolution if any (continued):

SUGGESTED REPLACEMENT TEXT FOR PARA. 2.1.2.2.1.2 (S. Heppe; 19-Mar-01)

The ADS-B transmitting subsystem shall (R2.17) be capable of reporting both barometric pressure altitude and geometric altitude (height above the WGS-84 ellipsoid), or equivalent, if available. Pressure altitude is the reference for vertical separation within the NAS and ICAO airspace and should be included as a default element in SV reports if available. Barometric pressure altitude shall (R2.18) be reported referenced to standard temperature and pressure. Geometric altitude (height above or below a plane tangent to the earth's ellipsoid as defined by WGS-84 [7]) may be used in certain future applications and can also be transmitted if pressure altitude is not available. Altitude shall (R2.19) be provided with a range of –1000 ft up to 100,000 ft.

Some applications and airspace domains, or combinations thereof, may require transmission of both pressure altitude and geometric altitude, or equivalent. Relative update rates during periods of dual transmission may be application-specific. For fixed or tethered objects, the altitude of the highest point should be reported. Altitude is not required to be reported when an A/V is operating on the airport surface, provided that the A/V indicates that it is on the surface.

Working Group 6 Deliberations:

May 24, 2001: This Issue Paper was reviewed by the ad hoc group at their May 2001 meeting. It was agreed that this IP will still be *considered* for addressing in Revision A. (It was agreed that a proper resolution might not be attainable in a time frame that allows inclusion in Revision A.)

July 19, 2001: At the July WG6 meeting, it was agreed that the proposed revision to Table 3-5 "State Vector Report Elements" in 242A-WP-6-11 would probably be found as an acceptable resolution for the closure of this Issue Paper.

August 30, 2001: At the August WG6 meeting, this Issue Paper was REJECTED after the group considered newly submitted Issue Paper 42 (IP42 proposes using ADS-B for altimetry self-test.) DO-242A will clarify that altitude from both sources in only required when available. (Action Item 7-11 will tighten the language as to what is meant by "when available" for altitude sources.)