Proposed MASPS Changes

2.1.2.3.2.1 Current Trajectory Change Point

The TCP from the transmitting aircraft is the point in three-dimensional space where the current operational trajectory is planned to change, and estimated remaining flight time to that point. A TCP transmission indicates that the aircraft intends to fly directly, via a great circle route, to that point. The TCP is defined as a five-element vector consisting of the following:

- Latitude (WGS-84)
- Longitude (WGS-84)
- Altitude (pressure altitude or flight level)
- Time to go (TTG) to the indicated point in space
- Validity bit

Note: The Validity bit is used to indicate that the aircraft is flying to the broadcast TCP and will arrive at the time projected. This indication is intended primarily for new aircraft and manufacturers will design automation systems to insure a TBD level of compliance to a TCP before broadcasting this bit.

The TCP required received…

2.1.2.5 ACAS/TCAS Capability Code

The ACAS/TCAS capability code is used to indicate that ACAS/TCAS is installed and operational.

2.1.2.6 ACAS/TCAS RA Information

The ACAS/TCAS RA information is broadcast whenever an aircraft has a RA in progress. The information broadcast shall include the direction of the RA and the address of the aircraft the RA is against (if known). The information will be broadcast as long as the RA is in progress.

2.1.2.7 Other Information

The ADS-B system shall (R2. 1) be expandable so as to support information transfer requirements for additional applications not specifically identified in this MASPS.

Table 2-2. Summary of Information Needs for Applications Supported by ADS-B

Information Element	Aid to Visual Acquisition	Conflict Avoidance and Collision Avoidance	Separation Assurance & Sequencing	Flight Path Deconfliction Planning	Simultaneous Approaches	Airport Surface (A/V to A/V & A/V to ATS)	ATS Surveillance
Identification							
Call Sign[1]	**n/r**	**n/r**	**R**	**R**	**R**	**R**	**R**
Address	**R**	**R**	**R**	**R**	**R**	**R**	**R**
Category	**n/r**	**n/r**	**R**	**R**	**R**	**R**	**R**
State Vector							
Horizontal Position	**R**	**R**	**R**	**R**	**R**	**R**	**R**
Vertical Position	**R**	**R**	**R**	**R**	**R**	**n/r**	**R**
Horizontal Velocity	**R**	**R**	**R**	**R**	**R**	**R**	**R**
Vertical Velocity	**R**	**R**	**R**	**R**	**R**	**n/r**	**R**
Turn Indication	**n/r**	**n/r**	**R**	**R**	**R**	**TBD**	**R**
NUC_P ,NUC_R	**R**	**R**	**R**	**R**	**R**	**R**	**R**
Status and Intent[3]							
Emergency/Priority Status	**n/r**	**n/r**	**n/r**	**n/r**	**n/r**	**n/r**	**R**
TCP[2]	**n/r**	**n/r**	**R**	**R**	**n/r**	**n/r**	**R**
TCP+1[2]	**n/r**	**n/r**	**n/r**	**R**	**n/r**	**n/r**	**R**
Class Code	**R**	**R**	**R**	**R**	**R**	**R**	**R**
ACAS/TCAS Capability Code	**n/r**	**R**	**n/r**	**n/r**	**n/r**	**n/r**	**n/r**
ACAS/TCAS RA Information	**n/r**	**R**	**n/r**	**n/r**	**n/r**	**n/r**	**n/r**
Future Expansion	**R**	**R**	**R**	**R**	**R**	**R**	**R**

Table 3-6 Mode-status Report Definition

Element #	Contents
1	Participant Address (Section 2.1.2.1.2)
2	Call Sign (Up to 8 Alpha-numeric Characters) (Section 2.1.2.1.1)
3	Participant Category (Section 2.1.2.1.3)
4	Surveillance Support Code(Normal/Default) (note 3)
5	Emergency/Priority Status (Section 2.1.2.3.1)
6	Class Codes (Section 2.1.2.4)
7	TCP Latitude (Section 2.1.2.3.2)
8	TCP Longitude (Section 2.1.2.3.2)
9	TCP Altitude (Baro Alt/FL) (Section 2.1.2.3.2)
10	TCP Validity(Section 2.1.2.3.2)
11	TTG (Section 2.1.2.3.2)
12	Operational Mode Specific Data
13	Flight Mode Specific Data (note 4)
14	Time of Applicability (Section 2.1.1.4)
15	ACAS/TCAS Capability Code (Section 2.1.2.5)

Table 3-7 TCP+1 On-Condition Report Definition

Element #	Contents
1	Participant Address (Section 2.1.2.1.2)
2	TCP+1 (Lat.) (Section 2.1.2.3.2)
3	TCP+1(Long.) (Section 2.1.2.3.2)
4	TCP+1 Altitude (Baro/FL) (Section 2.1.2.3.2)
5	TCP+1 TTG (Section 2.1.2.3.2)
6	TCP Validity(Section 2.1.2.3.2)
7~~6~~	Time of Applicability (Section 2.1.1.4)

3.5.1.1.3 Flight Mode/Status Data Input Devices

The subsystem shall interface with the onboard data entry mechanisms such as flight deck keyboards/selectors, certified encoded data sources, and logical discrete inputs to provide the subsystem with the following data.

- Own ICAO Address Data and/or special address
    - Own aircraft address data normally refers to the recognized ICAO 24 bit Address which is provided by an external source(see below) as a fixed input not alterable by the crew. However, for some operators desiring anonymity, blocks of 24 bit codes are expected to be available and will require entry for each flight operation.
- Vehicle type code
- Own Flight Identification: the operational flight ID is to be managed by the flight crew

- Own Operational Status Notice: Indicates exceptional operational conditions e.g., hijack, medical emergency, engine out etc. In some cases these data may be crew entered or triggered by on board systems. Mode Information is currently associated with Transponder Air-Ground status of the Aircraft as well as any required or desired annunciation of Emergency Status information. ADS-B support to future automation on other aircraft/vehicles requires expansion beyond present capabilities to meet the operations envisioned in Sections 1 and 2 of this MASPS
- Source participant class codes defining flight-phase capabilities
- ACAS/TCAS operational status and RA information

3.5.2.1.3 Mode/Status Data Input Devices

The subsystem shall interface with the onboard data base or approved data entry mechanisms such as an flight deck keyboards/selectors, certified encoded data sources, and logical discrete inputs to provide the subsystem with the following data.

- Own ICAO Address Data and/or special address: Own aircraft address data normally refers to the recognized ICAO 24 bit Address which is provided by an external source(see below) as a fixed input not alterable by the crew or other operating personnel. However, for some operators desiring anonymity, blocks of 24 bit codes are expected to be available and will require entry for each flight operation.
- Vehicle type code
- Own Operational Status Notice: Indicates exceptional operational conditions e.g., hijack, medical emergency, engine out etc. In some cases these data may be crew entered or triggered by on board systems. Mode Information is currently associated with Transponder Air-Ground status of the Aircraft as well as any required or desired annunciation of Emergency Status information. ADS-B support to future automation on other aircraft/vehicles may require specialized data from these subsystems.
- Source participant class codes defining flight-phase capabilities
- ACAS/TCAS operational status and RA information

Fixed obstacle subsystems, B3, require interface only for data to provide receiving participants with a M/S report sufficient to define obstacle identity, type and operational status information.

On Condition Report