

## Change Proposal on Airborne Surveillance Requirements

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### **1.0 Background**

During ASP/WG fourth meeting, ASSG members were tasked to revise the attachment A of WP ASP04-19 to generate change proposal for ASP/1 meeting. This change proposal covers the amendment to include a new chapter for the requirements on airborne surveillance into ANNEX 10 volume IV.

### **2.0 Recommendation**

The WG is invited to review the draft CP that is found in the attachment to this paper. .

## Proposed change to: Annex 10

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Submit to:     Rapporteur ASP Working Group                     Page 1 of 1

1.     Change No TBD     Date submitted: May 2008

*Title:* Annex 10 CP to include the initial requirements for airborne surveillance

2.     List of all relevant ASP Working Papers: ASP04-18 and 19

3.     Background:

The guidance by ICAO is required to provide the basis of compatibility for the development and evaluations of airborne surveillance equipments, systems and applications. Also, the guidance is required to ensure the compatibility and interoperability between new airborne surveillance systems and existing aeronautical radio equipments.

The developments of airborne surveillance applications require basic standards as well as the application definition provide complete requirements onto the airborne surveillance system. The first high level requirements will become the first step for standardization process.

In addition, the guidance should not restrict the possible range of development of future system. There is currently no text for this purpose in ANNEX 10. Also, the text for this purpose should be revised after the developments of airborne surveillance applications with respect to their requirements.

4.     Need for change:

- To ensure the compatibility and interoperability among new airborne surveillance equipments in the future and existing aeronautical radio equipments, and
- To provide the basis of airborne surveillance application standardization.

5.     Change: See Attachment to this paper

6.     Category: (confirmed by Rapporteur)

- X1.     Addition - new material e.g. new GICB, MSP, or Broadcast.
2.     Update- technical change or correction to current document.
3.     Useful - will enhance understanding of the document.
4.     Cosmetic - needed to correct editorial error.

Submitted by: ASP Airborne Surveillance Subgroup

Organisation: ASP

Address:       ICAO

Attachment A – Proposed requirements for airborne surveillance

**ANNEX 10 – AERONAUTICAL TELECOMMUNICATIONS  
VOLUME IV (SURVEILLANCE RADAR AND COLLISION AVOIDANCE SYSTEMS)**

*Insert new text as follows*

**CHAPTER 7 – TECHNICAL REQUIREMENTS FOR AIRBORNE SURVEILLANCE  
APPLICATIONS**

*Note 1.- Airborne surveillance applications are based on the use of the information contained in received ADS-B IN messages onboard.*

*Note 2.- Initial airborne surveillance applications are based on airborne traffic situation awareness (ATSA) enabled by 1090 MHz extended squitter ADS-B IN and are expected to include “ In-trail procedures” and “ Enhanced visual separation in approach”.*

*Note 3. Detailed description of aforementioned applications can be found in RTCA DO-289.*

**7.1 GENERAL REQUIREMENTS**

**7.1.1 TRAFFIC DATA FUNCTIONS**

*Note,- The traffic involved in airborne surveillance applications is referred to as the reference aircraft.*

**7.1.1.1 Identifying the reference aircraft**

The system shall support a function to positively identify each reference aircraft relevant to the application.

**7.1.1.3 Tracking the reference aircraft**

The system shall support a function to monitor the movements and behaviour of each reference aircraft relevant to the application.

**7.1.1.3 Trajectory of the reference aircraft**

The system shall support a computational function to predict the future position of a reference aircraft beyond simple extrapolation.

*Note. This requires knowledge of the reference aircraft’s performance capabilities and/or intent.*

**7.1.2. DISPLAYING TRAFFIC**

*Note. Track for a reference aircraft may be established by ACAS, ADS-B IN or TIS-B IN..*

7.1.2. 1 The system shall display only one track for each distinct aircraft.

*Note.- This is to ensure that tracks established by ACAS and ADS-B IN/TIS-B IN are properly correlated and mutually validated before being displayed.*

7.1.2.2.. Where there is a track generated by ADS-B IN and/or TIS-B IN and a track generated by ACAS that have been determined to belong to the same aircraft, the track generated by ADS-B IN and/or TIS-B IN shall be displayed.

*Note. At close distance it is possible that the track generated by ACAS provides a better accuracy than the track generated by ADS-B IN and/or TIS-B IN. The requirement above ensures the continuity of the display.*