



TWELFTH AIR NAVIGATION CONFERENCE

Montréal, 19 to 30 November 2012

Agenda Item 4: Optimum capacity and efficiency – through global collaborative ATM

4.1: Efficient management of airspace and improved flow performance through collaborative decision-making (CDM)

AIRBORNE SURVEILLANCE APPLICATIONS

(Presented by the Secretariat)

1. INTRODUCTION

1.1 ICAO established the Airborne Surveillance Task Force (ASTAF) in 2010 to develop operational and technical provisions related to airborne surveillance applications under development and implementation worldwide.

1.2 This multidisciplinary team of experts focused on the results of the work of the air traffic management (ATM) community for automatic dependent surveillance — broadcast (ADS-B) applications for the flight crew. It was recognized that although the applications were well described with specific requirements and characteristics in industry documentation, there was a need to show that these applications were forming a coherent package in support of the surveillance roadmap for ADS-B IN applications and therefore, it was proposed to present all the applications in an ICAO *Manual on Airborne Surveillance Applications* (Doc 9994) which will be posted on the AN-Conf/12 website at www.icao.int/anconf12 prior to the Conference.

1.3 In addition, it is highlighted that all these applications are also presented in the form of aviation system block upgrades (ASBUs) and related to two performance improvement areas (PIAs). One is for airport operations supported by enhanced safety and efficiency of surface operations (B1-75 for enhanced traffic situational awareness on the airport surface (SURF) and runway safety alerting logic (SURF-IA)). The other PIA is for optimum capacity and flexible flights through global collaborative ATM supported by: mature applications described in B0-85 for basic airborne situational awareness (AIRB) and visual separation on approach (VSA), and B0-86 for in-trail procedure (ITP); advanced applications in B1-85 for interval management (IM); and future applications contained in B2-85 for airborne separation (ASEP) and B3-85 for airborne self-separation (SSEP). These are described in AN-Conf/12-WP/11.

2. PURPOSE AND CONTENTS

2.1 This manual has three main objectives:

- a) to support the implementation of airborne surveillance and the initial applications for which some industrial solutions are already available;

- b) to present guidance material and references related to Standards and Recommended Practices (SARPs), Procedures for Air Navigation Services (PANS) and relevant industry documents; and
- c) to summarize/recapitulate within an ICAO document the main results of the work carried out in the ATM community supported by ADS-B, recognized as an essential enabler of the ICAO global concept of operations.

2.2 The manual is composed of several chapters as follows:

- a) Chapter 1 contains the definitions;
- b) Chapter 2 briefly describes all airborne surveillance applications, defined and under development, and discusses technical matters such as validation, architecture and partial equipage; and
- c) Chapters 3, 4 and 5 address all applications available at the time of writing the document as follows: Chapter 3 deals with the air navigation service provider (ANSP) and aircraft operator perspective, Chapter 4 deals with controller procedures while Chapter 5 deals with flight crew procedures.

2.3 The structure is therefore adapted to each potential reader, including actors such as air traffic controllers and flight crews as well as decision makers and technical experts. The manual will be updated to incorporate airborne surveillance applications when they are made available to the global ATM community.

3. CONCLUSION

3.1 The Conference is invited to take note of the information provided in this paper and of the draft *Manual on Airborne Surveillance Applications* (Doc 9994).

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