



INTERNATIONAL CIVIL AVIATION ORGANIZATION

WESTERN AND CENTRAL AFRICA OFFICE

Twenty-Fourth Meeting on the Improvement of Air Traffic Services over the South Atlantic (SAT/24)

Luanda, Angola, 5-7 June 2019

Agenda Item 3.4: Airspace Structure and ATM Operational Improvements

3.4.7 UPDATE ON THE ASEPS (ADVANCED SURVEILLANCE-ENHANCED PROCEDURAL SEPARATION) USING ADS-B TRIALS IN PARTS OF THE NAT AIRSPACE

(Presented by the Secretariat)

<p style="text-align: center;">SUMMARY</p> <p>This paper provides an update on the trial of Advanced Surveillance-Enhanced Procedural Separation (ASEPS) using Automatic Dependent Surveillance Broadcast (ADS-B) in the Shanwick, Gander and Santa Maria Oceanic Control Areas which started on 28 March 2019.</p> <p>The meeting is invited to note the attached information.</p>
<p style="text-align: center;">COORDINATION</p> <p>ICAO HQ, Paris Regional Offices.</p>
<p style="text-align: center;">REFERENCES</p> <p>*NAT Doc 007</p> <p>*NAT OPS Bulletin 2018_005</p> <p>*NAT OPS Bulletin 2018_006</p> <p>*Principal references</p>

1. INTRODUCTION

1.1 The North Atlantic Implementation Management Group (NAT IMG/52 in April 2018) had agreed that the Implementation Plan, Task List and Concept of Operations (CONOPS) for Space-Based (SB) Automatic Dependent Surveillance-Broadcast (ADS-B) and associated Advanced Surveillance-Enhanced Procedural Separation (ASEPS) trials must fulfil the prerequisites for the operational trial as provided in NAT Systems Planning Group SPG (NAT SPG/53 in June 2017) Conclusion 53/5:

NAT SPG Conclusion 53/5 – Prerequisites for SB ADS-B Operational Trial

That the following prerequisites are to be fulfilled in order to enable an operational trial to use Space-Based Automatic Dependent Surveillance-Broadcast (SB ADS-B):

- a) the Separation and Airspace Safety Panel (SASP) has agreed minima and associated requirements for Advanced Surveillance-Enabled Procedural Separation (ASEPS);
- b) implementing Air Navigation Services Providers (ANSP) have:
 - i) completed ASEPS implementation plans aligned to the NAT SB ADS-B Concept of Operations (CONOPS) and the SASP output referred to in a) above;
 - ii) confirmed their SB ADS-B service meets identified performance requirements;
 - iii) completed safety management activities as required by their respective regulatory authorities; and
 - iv) confirmed that the Performance Based Communication and Surveillance (PBCS) performance is measured and reported in the same manner as other applications of reduced separation in the NAT;
- c) the plans and the outputs of the safety management activities referred to in b) above have been reviewed by the NAT Implementation Management Group (NAT IMG) and the NAT Safety Oversight Group (NAT SOG);
- d) the NAT IMG and NAT SOG identify success criteria and trial duration;
- e) neither the NAT IMG nor the NAT SOG identifies an issue that, in their opinion, requires resolution before an operational trial should commence;
- f) the NAT IMG has confirmed that implementing ANSPs have completed all required implementation activities; and
- g) NAT SPG has approved the implementation plan and supporting task list that would also include the above listed prerequisites to enable a trial for implementation of SB ADS-B in the NAT.

1.2 In addition to the above, NAT SPG/54 (in June 2018) had been provided with the latest version of the Implementation Plan and Task List as well as the provisional version of the NAT SB ADS-B Concept of Operations (CONOPS). The NAT SPG had also agreed that the foregoing documents should be further refined by the NAT IMG and NAT SOG contributory bodies. Under the assumption that all of the pre-requisites have been met, it was envisaged that the trial would then commence on AIRAC 28 March 2019.

2. DISCUSSION

2.1 In accordance with the tasks assigned to the NAT IMG and NAT SOG in these NAT SPG Conclusions to ascertain that all prerequisites have been satisfied, the associated Implementation Plan and Task List, Concept of Operations (CONOPS), and a NAT OPS Bulletin concerning the ASEPS Trials to be used as the basis for the AIC to be promulgated by the implementing States, were closely reviewed at the meetings in October and December 2018. A special NAT SOG meeting regarding the NAT Safety Case for the Operational Trial of ASEPS Using SB ADS-B was also organised in November 2018.

2.2 In view of the timespan between the planned commencement of the ASEPS trials in March 2019 and the effective date of new ASEPS provisions in PANS-ATM from November 2020 onwards, and to take advantage of the added safety benefits of these new procedures, the Groups agreed that the NAT Operations Bulletins should be issued and that these procedures should become effective on the day of the commencement of the ASEPS trials in March 2019.

2.3 This would also include revised Special Procedures for In-flight Contingencies procedures that would be applicable in the entire NAT Region as well as the West Atlantic Route System (WATRS). In agreeing to the foregoing, the States were cognisant that they would need to publish the difference with PANS-ATM in their State Aeronautical Information Publication (AIP).

2.4 Based on the discussions and recommendations of the NAT working groups, it was agreed that the operational trial should commence on 28 March 2019 and continue until 5 November 2020 or the effective date of ASEPS provisions in the *Procedures for Air Navigation Services - Air Traffic Management* (PANS-ATM, Doc 4444), whichever is later.

2.5 In support of this trial implementation, the NAT working groups approved the publication of the NAT OPS Bulletins on the *Trial Implementation of ASEPS using ADS-B* (Serial no: 2018_006) and *Special Procedures for In-flight Contingencies* (Serial no: 2018_005) as attached in **Appendices C and D**.

2.6 Additionally, the NAT Groups agreed that it was imperative that the *NAT Operations and Airspace Manual* (NAT Doc 007, V2019_1) be amended, as shown in **Appendix E**, to take account of the contingency procedures and to ensure that the AIC references were correct.

2.7 To facilitate future references to this decision, it must be noted that following the circulation of ICAO EUR/NAT Office State Letters 18-0603 and 18-0620 in December 2018, a NAT SPG Conclusion will be tabled formally and recorded at NAT SPG/55 (ICAO EUR/NAT Office 24 to 27 June 2019) in June 2019:

2.8 Nevertheless, it must be noted that additional activities are still ongoing for the expansion of the operational trial of Advanced Surveillance Enhanced Procedural Separation (ASEPS) using Space Based Automatic Dependent Surveillance – Broadcast (ADS-B) to include lateral spacing of 19NM between non-intersecting tracks. This expansion will be presented to NAT SPG/55 meeting for endorsement and the publication of the OPS Bulletin, as well as the national AICs, are scheduled for AIRAC 15 August 2019 with a commencement of ASEPS operational trial lateral spacing of 19 NM between non-intersecting tracks from AIRAC 19 OCT 2019 onwards.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note:

- (a) the work related to the trial implementation of Advanced Surveillance-Enhanced Procedural Separation (ASEPS) using Automatic Dependent Surveillance Broadcast (ADS-B) in the Shanwick, Gander and Santa Maria Oceanic Control Areas; and
- (b) the following Appendices that are provided with this information paper:

Appendix A: *Implementation Plan and Task List for an Operational Trial Of Advanced Surveillance-Enhanced Procedural Separation (ASEPS) Using Automatic Dependent Surveillance-Broadcast (ADS-B)*

Appendix B: *Concept of Operations (CONOPS) On Provision of Space Based Ads-B Services in The North Atlantic Region*

Appendix C: *NAT OPS Bulletin – on Trial Implementation of ASEPS using ADS-B (Serial no: 2018_006)*

Appendix D: *NAT OPS Bulletin – on Special Procedures for In-flight Contingencies (Serial no: 2018_005)*

Appendix E: *NAT Doc 007 - NAT Operations and Airspace Manual (V2019_1)*

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