



## 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, 3-7 June 2019

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#### Agenda Item 3.5: Airspace Structure and ATM Operational Improvements

##### 3.5.5 IMPLEMENTATION OF 30NM SEPARATION MINIMA BASED ON PBCS IN THE SOUTH ATLANTIC (SAT) REGION.

(Presented by DECEA)

| SUMMARY   |
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| <p>This work presents the preliminary study developed by the Brazilian Airspace Control Department (DECEA), through an <i>ad hoc</i> Group from the Brazilian Airspace Planning Study Group (GEPEA), with the objective of facilitating the implementation of 30NM separation minima based on PBCS in the Oceanic Brazilian FIR.</p> <p>.....</p> |
| <p><b>REFERENCE(S):</b> ICAO Doc 4444 - PANS-ATM<br/>ICAO Doc 10037- GOLD<br/>ICAO Doc 9689 - Manual PBCS</p>   |
| <p><b>Related ICAO Strategic Objective(s):</b> Optimize airspace for aviation with the application of new technologies.</p>   |

#### 1. INTRODUCTION:

1.1. Since 2009, the CPDLC has been used in Brazil, more specifically in the Atlantic Area Control Center (ACC-AO), together with the Automatic Dependent Surveillance System (ADS-C), which transmits position information with maximum periodic reporting interval of 15 minutes.

These and other relevant air traffic control information from the embedded components are routed to the grounded system via data link.

In order to increase the airspace capacity and the flight levels available in the Brazilian Oceanic Airspace, the Airspace Control Department (DECEA), through the *ad hoc* Group of the Airspace Planning Studies Group (GEPEA), decided to analyze the technical and operational conditions, as well as to assess the risks and benefits for air traffic flow, in order to implement the performance-based longitudinal separation required, as foreseen in Doc 4444, Chapter 5, item 5.4.2.9.2.

## 2. **DISCUSSION:**

2.1 Brazil has started the studies on national and international legislation, to elaborate Technical and Operational Advises for the application of reduced longitudinal separation in FIR between aircraft with Performance Based Communication and Surveillance (PBCS) capability. Currently, the longitudinal separation applied in this Flight Information Region is 10 minutes. With the growth of the air traffic demand in the Brazilian Oceanic FIR, DECEA makes efforts to reduce the longitudinal separation between the aircraft, in order to promote the airspace sectors capacity increase and the availability of flight levels more appropriate to aircraft performances.

The reduction of the longitudinal separation in the Oceanic Brazilian FIR will foment a greater availability in the airspace, mainly, in the situations in which the ITCZ (Intertropical Convergence Zone) action causes great deviations in certain areas of the FIR, impacting the sectors responsible for receiving the demands from or to the EUR-SAM Corridor. The study looks for viable solutions that allow to implement reduction in the separation minima to 30NM, according to the DOC4444.

2.2. Considering the future implementation of the longitudinal separation reduction in the FIR-AO, the feasibility study pointed to some needs:

- a) Reduce maximum ADS-C periodic reporting interval;
- b) Establish a PBCS monitoring program; and
- c) Publish the PBCS requirements in AIP BRASIL.

2.3 The implementation of 30NM separation minima based on PBCS in the South Atlantic Region (SAT) is expected to achieve the following objects:

- Greater airspace capacity;
- Greater availability of flight levels more appropriate to aircraft performances;
- Greater air traffic flow;
- Reduction of the emission of gases in the atmosphere with the availability of levels more appropriate to the performances of the aircraft; and
- Decrease in fuel consumption with aircraft accommodation at more economical flight levels.

2.4 The benefits listed above would be partially achieved if the implementation occurred only in the FIR SBAO and the airspace in the SAT region would no longer be homogeneous. In this context, the study initiated in Brazil should be expanded to the other FIR in order to verify the feasibility of a regional implementation. This approach would maintain the airspace in SAT region homogeneous and would provide huge benefits to the operators and air navigation service providers.

### **3. ACTION BY THE MEETING:**

3.1. The meeting is invited to:

- a) To take note and review the information provided herein; and
- b) Discuss with South Atlantic FIR representatives on operational and technical aspects related to the Implementation of 30NM separation minima based on PBCS (Reduce maximum ADS-C periodic reporting interval and establish a PBCS monitoring program).

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