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**International Civil Aviation Organization
South American Regional Office**

**FOURTH WORKSHOP/MEETING OF THE SAM IMPLEMENTATION GROUP (SAM/IG/4)
REGIONAL PROJECT RLA/06/901**

Lima, Peru, 19 to 23 October 2009

Agenda

Item 6:

Assessment of operational requirements in order to determine the implementation of communications, navigation and surveillance (CNS) capacity improvements for en-route and terminal area operations.

(Presented by Brazil)

Summary

The purpose of this working paper is to present the activities related to the ADS-C/CPDLC and ADS-B implementation in Brazil.

References:

- Report on SAMIG/3 Meeting
- Information Note 04 presented by Brazil in the SUR/TF/3 held at Mexico City in September 10th, 2009.

1. Background

1.1 During the GREPECAS/15 Meeting, held at Rio de Janeiro, in October 2008, the Brazilian Administration officially presented the National ATM Operational Concept (CONOPS). First, this document has been created based on the new edition of the Air Navigation Global Plan for the CNS/ATM Systems, issued after a complete updating in relation to the Global ATM Operational Concept parameters.

1.2 Afterwards, the Brazilian CONOPS has been presented to the national aeronautical community, so that, the addition of the key contributions received has made it possible to convert it in the main reference of strategic planning for the CNS/ATM systems implementation within the Brazilian Airspace Control System (SISCEAB).

1.3 Among the main CNS systems based on CNS/ATM concepts, for short and medium terms implementation, we can highlight the ADS-C/CPDLC in the ACC Atlantic (ACC-AO) and the ADS-B in Basin of Campos.

2. Analysis

ADS-C/CPDLC Implementation in the ACC-AO.

2.1 The ADS-C functionality is operationally available since 23/10/2008, having as its main benefit the fact that equipped aircraft do not need to fulfill the report on the compulsory notification fixed position.

2.2 The CPDLC functionality is set since 30/07/2009. Its main benefit is the reduction of controllers and pilots workload, increasing, thus, the system capacity.

Even with the new system implementation, the ACC-AO keeps fostering conventional control and separation, being that non-equipped aircraft remain using the HF system.

2.3 The great challenge faced by the Brazilian Administration, during the implementation of the new system, was to prepare the air traffic controllers and aeronautical station operators assigned to new function. Initially, the controllers were qualified for operating the ACC-AO using the HF system. Lately, there was an extensive training applying the new tool. At last, it has been planned a 30-day transition period to the adaptation to the new operational model.

2.4 Besides the question relating to the training of air traffic controllers and aeronautical station operators, the use of this new control system, has caused some difficulties associated to the fact that some crews are not duly qualified. Maybe, for this reason, the number of aircraft connected to the system (about 75 %) has been lesser than expected (90 % of aircraft connected to the system).

ADS-B Implementation in the Basin of Campos.

2.5 Campos Basin is considered an important oil reserve in the Brazilian Continental Platform, located on the North coast of the State of Rio de Janeiro State. In this area, it has been set the ATS surveillance through a STAR2000 radar, from Thales, with coverage limited to the oceanic area, specially for helicopters flying at low altitude (about 40NM/55NM).

2.6 The available data show that the helicopters flow within the airspace of the Basin of Campos is increasing, mainly in the oceanic area, demanding an additional surveillance system in order to improve the safety, the airspace capacity and the efficacy of helicopter operations in this area.

2.7 Due to these factors, the Brazilian administration has concluded that there was a specific operational need in the area near to the Oil Platforms of the State of Rio de Janeiro and that the solution to be adopted should be based on the application of new surveillance technologies, in particular the ADS-B.

2.8 Taking into account that this area represents a homogeneous space (only for helicopters) and that it has partial radar coverage, the Brazilian administration has also concluded that this area was an excellent spot for a comparison test between the new surveillance technologies performance and the traditional radar systems already implemented in the region.

2.9 At the beginning of 2009, the DECEA, the Petrobrás and the helicopters operators promoted a new configuration of this airspace, implementing new RNAV supported by GNSS procedures.

2.10 The next chosen step was to improve the efficiency of the airspace through the installation of ADS-B stations over the oil platforms. In accordance with the planning approved by the DECEA, the ground infrastructure shall be ready by the end of 2010 and the equipment mandatory for the helicopters operators shall be installed by 2013.

2.11 Preliminary studies showed that the installation of five ADS-B stations on previously selected oil platforms would provide the necessary coverage (with redundancy) over the assigned operational area.

2.12 Certainly, the knowledge acquired during the ADS-B implementation in the Basin of Campos, especially on certification processes, will be applied when the ADS-B is implemented in other environments throughout the Brazilian continental airspace and the entire SAM Region.

3. Suggested Action

3.1 The meeting is invited to:

- a) Analyze the information presented in this Working Paper.

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