INTERNATIONAL CIVIL AVIATION ORGANIZATION

AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP
TWENTIETH MEETING (APIRG/20)
Yamoussoukro, Cote d'Ivore (30 November 2015 – 2 December 2015)

Agenda Item 2: Performance Framework for Regional Air Navigation Planning and Implementation

2.4 Communications, Navigation and Surveillance (CNS)

ONGOING GBAS INITIATIVES IN SOUTH AFRICA

(Presented by South Africa)

SUMMARY
This information paper is in response to the GBAS discussions during the APIRG 19 Meeting and summarises the initiatives undertaken to date by South Africa relating to the introduction of GBAS, to support optimised and efficient operations. The information paper confirms South Africa's continuous commitment to apply proven planning and business processes in decisions relating to the orderly, safe, efficient and expeditious managing of traffic, though the use of new and emerging technology
REFERENCE(S): ▪ APIRG 19 - Ground–Based Augmentation System (3.4.27)

Strategic Objective(s)	This Information Paper is related to Strategic Objectives **A, B and E.**

1. INTRODUCTION

1.1 During the APIRG 19 meeting ASECNA provided an update on their feasibility study on the implementation of Ground Based Augmentation System (GBAS) Category I operations at Dakar Leopold Sedar Senghor (LSS) International Airport, in Senegal.

1.2 South Africa has initiated planning activities relating to the introduction of new space based services over the last 10 years. To this extend the two Master's Degree Students were supported to undertake specific studies relating to some of the areas associated with the introduction of Space and/or Ground Based Augmentation Systems

2. DISCUSSION

2.1 The first study related to modelling of the South African Ionosphere model. The results from the studies reiterated the importance of a South African Ionospheric threat model needs to be defined.

2.2 The second study related to the more specific subject of designing and deploying a GBAS solution for OR Tambo International Airport.

2.3 The future work program associated with the planning for the introduction of GBAS into South Africa includes:

2.3.1 *Airport specific Business Cases* - considering amongst others the current airport infrastructure, movement levels, separation improvements, investment forecasts, total life cycle costing models, aircraft equipage, environmental benefits, growth scenarios, etc.

2.3.2 *Airline generic Business Cases* - considering amongst others the improved capacity, more efficient approaches, fuel savings, etc.

2.3.3 *Atmospheric data collection & Constellation monitoring* – this is achieved through partnerships between the local air traffic and navigation service provider and the South African National Space Agency (SANSA), by sharing of monitoring and computation resources.

2.3.4 *Changes in the operational environment* – Both operational and human factor aspects need to be considered based on the new potential service that would be provided, relating to clearances, changes in separation standards, approached (e.g. Curved approaches), glideslopes.

2.3.5 The ultimate stage would be a *proof of concept trial*, which could allow for the validation of the business case assumptions and conclusion of the Safety Case.

2.4 South Africa supports the principle of on-going information gathering and the validation thereof to enable proper planning initiatives leading to a final collaborative decision on when to implement GBAS at suitable airports.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the contents of this paper and South Africa's continuous commitment to apply proven planning and business processes in decisions relating to the orderly, safe, efficient and expeditious managing of traffic, though the use of technology.

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