



International Civil Aviation Organization
Eastern and Southern African Office

**Joint Meeting of the APIRG Performance Based Navigation and
Global Navigation Satellite System Implementation Task Forces (Joint
PBN & GNSS/I TFs)**

First Meeting
(Nairobi, 8 - 10 September 2009)

Agenda Item 8: AFI GNSS Strategy

Review of AFI GNSS Strategy

(Presented by Secretariat)

SUMMARY

This Paper presents the draft update of AFI GNSS strategy as developed by the AFI GNSS/I/TF at the Fourth meeting (Nairobi, Kenya. 8-9December 2008)

Action by the meeting is at paragraph: 3

References

- Report of the Sixteenth meeting of the APIRG (APIRG/16)
- Report of the Special Africa-Indian Ocean (AFI) Regional Air Navigation (RAN)meeting (SP AFI 08/RAN)
- Report of the First meeting of the Performance-based Navigation Task Force (PBN/TF/1)
- Report of the Fourth Meeting of GNSS/I/TF/

This Working Paper is related to Strategic Objectives **A & D**

1. INTRODUCTION

1.1 At the fourth meeting of AFI GNSS Implementation Task Force meeting, the meeting took cognizance of Resolution A36-23 on Performance Based Navigation Global goals adopted by the 36th Session of the ICAO Assembly held in Montreal 18-28 September 2007, which adopted Resolution A36-23:

Performance Based Navigation Global goals, urging contracting States to implement RNAV and RNP at air traffic service routes and implement in accordance with ICAO PBN concept as stated in PBN Manual (Doc 9613).

1.2 The meeting also noted that, the Resolution called upon States, planning and implementation Regional Groups, to develop PBN implementation plans by the year 2009 and to ensure that the implementation of the PBN concept is harmonized and coordinated globally.

2. DISCUSSIONS

2.1 Taking into consideration the ICAO Assembly Resolution A32-23 and the draft AFI PBN operational requirements, the draft AFI GNSS strategy was updated as proposed in Appendix A to this working paper.

2.2 The meeting noted that in the long term (2017 and beyond), the next APIRG meeting (i.e. APIRG/17), would have to clarify on the approach to use. The meeting adopted the following Conclusion:

CONCLUSION 4/6: - IMPLEMENTATION OF APPROACH AND VERTICAL GUIDANCE (APV)

That APIRG should coordinate and specify the applicable approach with vertical guidance (APV) type (Baro –VNAV versus SBAS) in view of Assembly resolution A36-23 to achieve implementation of approach procedures with vertical guidance (APV) (Baro-VNAV and /or augmented GNSS) for all instrument runway ends, either as the primary approach or as a back-up for precision approaches by 2016 with intermediate milestones as follows: 30 per cent by 2010, 70 per cent by 2014.

Note: An APIRG decision is required not later than 2010 in order to meet the above.

For the finalization of the draft amendments to the AFI GNSS Strategy, the meeting decided that there should be a joint meeting between the Task Force and the PBN task force to ensure that all the operational objectives have been catered for. The meeting adopted the following decision:

DECISION 4/2: FINALIZATION OF DRAFT AMENDMENTS TO AFI GNSS STRATEGY AS PART OF AFI CNS/ATM IMPLEMENTATION PLAN (DOC 003)

That a joint meeting of APIRG PBN and GNSS Implementation Task Force be held in order to finalize draft amendments to AFI GNSS Strategy as part of AFI CNS/ATM Implementation Plan (Doc 003), based on the AFI Regional PBN Plan (Roadmap) and related performance objectives and action plan for en – route, terminal and approach flight phases.

2.3 The meeting's attention is drawn to the fact that cost benefit analysis (CBA) should be made on all CNS/ATM systems to be implemented and as such cost Benefit Analysis for the systems in 2017 and beyond should be done for the Task Forces to advise APIRG accordingly.

2.4 At the last meeting of GNSS /I /TF (Nairobi, Kenya 8 – 9 December 2008) EASA was given the responsibility to do the comprehensive Cost Benefit Analysis (COB) on the implementation of SBAS in AFI Region. IATA being a member of the Task Force should be given the task of doing the cost benefit analysis for the implementation of the Baro-VNAV system in AFI. Baro-VNAV is an airborne system.

DECISION 1/.....

That IATA perform the Cost Benefit Analysis on the implementation of Baro- VNAV in AFI and submit the report to the next Task Force meeting.

3. ACTION REQUIRED

3.1 The meeting is invited to:

- a) take note of the above information, and
- b) comment on Appendix A and
- c) adopt the above decision.

Draft GNSS Strategy					
2008-2013			2013-2016		
Airspace	Navigation Specifications	Navigation Specifications where operationally required	Airspace	Navigation Specifications	Navigation Specifications where operationally required
	Basic GNSS			Basic GNSS	
• En-Route Oceanic	• RNAV-10	• RNP-4	• En-Route Oceanic	• RNAV-10,	• RNP-4
• En-Route Remote Continental	• RNAV-10	• • RNP-4	• En-Route Remote Continental	• RNAV-10,	• RNP-4
• En-Route Continental	• RNAV-5	• RNAV-1	• En-Route Continental	• RNAV-2, RNAV-5	• RNAV-1
• TMA Arrival/Departure	• RNAV-1 in a surveillance environment • Basic RNP-1 in non-surveillance environment		• TMA Arrival/Departure	• Expand RNAV-1, or RNP-1 application • Mandate RNAV-1, or RNP-1 in high density TMAs	
	Basic GNSS			ABAS or SBAS	
• Approach	• RNP APCH with Baro-VNAV or • RNP AR APCH if required		• Approach	• Expand RNP APCH with (Baro-VNAV) and APV (ABAS or SBAS) • Expand RNP AR APCH where there are operational benefits	

2017 – and beyond		
Airspace	Navigation Specifications	Navigation Specifications where operationally required
	Long term GNSS	
<ul style="list-style-type: none"> • En-Route Oceanic 	<ul style="list-style-type: none"> • RNAV-10 	<ul style="list-style-type: none"> • RNP-4
<ul style="list-style-type: none"> • En-Route Remote Continental 	<ul style="list-style-type: none"> • RNAV-10 	<ul style="list-style-type: none"> • • RNP-4
<ul style="list-style-type: none"> • En-Route Continental 	<ul style="list-style-type: none"> • RNAV-5 	<ul style="list-style-type: none"> • RNAV-1
<ul style="list-style-type: none"> • TMA Arrival/Departure 	<ul style="list-style-type: none"> • RNAV-1 in a surveillance environment • Basic RNP-1 in non-surveillance environment 	
	SBAS, GBAS	
<ul style="list-style-type: none"> • Approach 	<ul style="list-style-type: none"> • RNP APCH with Baro-VNAV • RNP AR APCH if required • CAT I (SBAS) • CAT I/II/III/ (GBAS) as required 	
