



WORKING PAPER

**SPECIAL AFRICA-INDIAN OCEAN (AFI)
REGIONAL AIR NAVIGATION (RAN) MEETING**

Durban, South Africa, 24 to 29 November 2008

Agenda Item 6: Development of a set of comprehensive work programmes in the air navigation field, aimed at improving efficiency of the air navigation system (Efficiency Committee)

IATA OPERATIONAL REQUIREMENTS IN THE AFI REGION

(Presented by the International Air Transport Association (IATA))

SUMMARY

This paper presents a number of IATA operational requirements for the AFI Region, to be taken into consideration in the regional air navigation planning and implementation process.

Action by the meeting is in paragraph 2.

1. INTRODUCTION

1.1 This working paper provides the Special AFI RAN Meeting with some IATA requirements for AFI air navigation system, based on geographical considerations.

Very high frequency (VHF) radio coverage limitations

1.2 Significant progress has been made in extending VHF radio coverage in the AFI region. In some flight information regions (FIRs), further extension of VHF range cannot be implemented due to natural obstacles or difficulties in accessing preferred facility locations (forests, deserts, and oceanic areas). Therefore, for planning purposes, these AFI FIRs should be characterized as remote continental areas.

Requirement for Automatic Dependent Surveillance – contract (ADS-C)/Controller Pilot Data Link Communications (CPDLC)

1.3 Taking into consideration such physical limitations, AFI States should implement ADS-C/CPDLC as recommended in the AFI Air Navigation Plan. The AFI Planning and Implementation Regional Group (APIRG) has already adopted a Future Air Navigation System –1/A (FANS – 1/A) Operations Manual applicable in the region.

Requirement for Automatic Dependent Surveillance – Broadcast (ADS-B)

1.4 Although the AFI Communications Navigation Surveillance/Air Traffic Management (CNS/ATM) Plan recommends gradual introduction of ADS, including ADS-B in the Region, the Air Navigation Plan has no requirement for ADS-B. It is proposed that APIRG develop requirements for ADS-B in selected FIRs, in close coordination with airspace users. ADS-B OUT, i.e. the broadcast of ADS-B transmissions from aircraft, without the installation of complementary receiving equipment to process and display ADS-B data on cockpit displays to pilots, should be considered initially.

Requirement for Global Navigation Satellite System (GNSS) operations

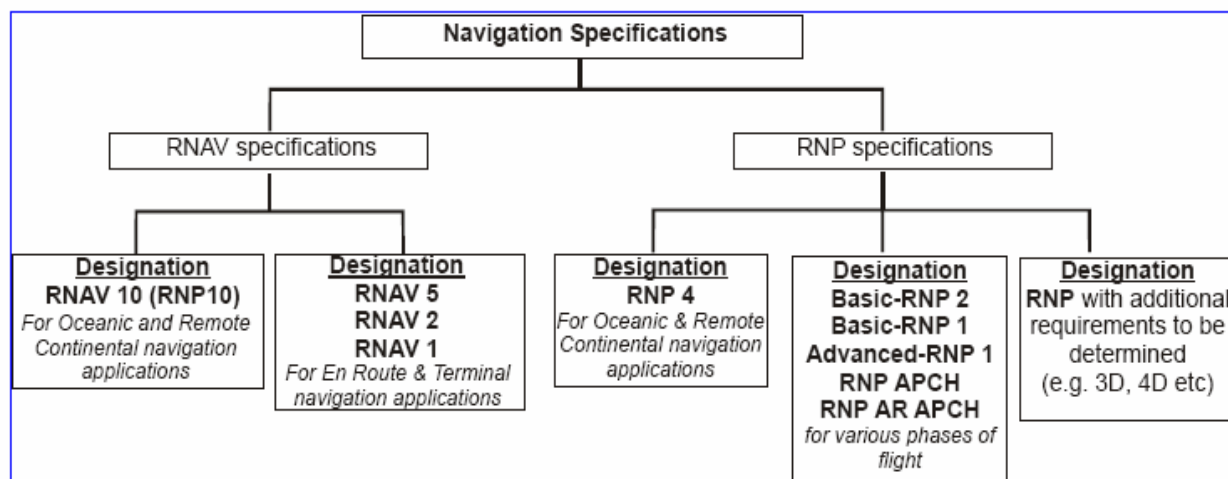
1.5 GNSS operations should be implemented in the AFI region on the basis of airborne based systems only.

Requirement for Performance-Based Navigation (PBN) Navigation Specification for en – route operations

1.6 It is proposed that Required Navigation Performance 10 (RNP10) with 50 NM lateral separation be required for en-route operations in the AFI region as the appropriate navigation specification for oceanic and remote continental navigation applications (see figure below). This should be seen as an interim step to a final solution of RNP4 with air traffic services and associated separation minimums based on direct pilot controller communication (voice or data) and ADS (Broadcast or Contract). To this end IATA requests that the AFI region PBN plan includes plans for ATS based on RNP4.

Requirement for Performance-Based Navigation (PBN) Navigation Specification for Terminal navigation operations and approach

1.7 The 36th General Assembly Resolution for PBN (Resolution 31/1) resolves that PIRGs complete PBN implementation plans in 2009 to achieve RNAV and RNP in terminal areas with approach procedures that have vertical guidance (APV) for all instrument runway ends by 2016 with 30 per cent done by 2010 and 70 per cent done by 2014. Airlines have requested that special emphasis be placed for PBN SIDs, STARs and Approaches with vertical guidance. This is not only a critical safety issue for many airports in Africa but PBN also brings significant savings in fuel and emissions. IATA requests that the PBN implementation task force identify and established a structured implementation plan that includes guidance on operational approvals for airports in AFI region.



2. ACTION BY THE MEETING

2.1 The Special AFI RAN Meeting is invited to:

- a) note the IATA infrastructure requirements presented in this working paper; and
- b) recommend that these requirements be adopted by APIRG as part of the AFI regional requirements for air navigation operations.