SAT/15 WP09

19/05/10

INTERNATIONAL CIVIL AVIATION ORGANIZATION

FIFTEENTH MEETING ON THE IMPROVEMENT OF AIR TRAFFIC SERVICES OVER THE SOUTH ATLANTIC

Lisbon, Portugal, 19 to 21 May 2010

Agenda Item 1: Air traffic management (ATM)
1.2. Follow up of the AORRA airspace implementation

PROPOSED AMENDMENT TO DOC 7030, REGIONAL SUPPLEMENTARY PROCEDURES

(Presented by: South Africa)

Summary

This working paper conveys the content of WP 11 as presented to the AFI ATS/AIS/SAR SG11 meeting for consideration by this meeting. The contents of the paper reflect on the need to amend the AFI Regional Supplementary Procedures (DOC 7030).

1. Introduction.

1.1 A need has been identified, requiring amendment to the Regional Supplementary Procedures (DOC 7030), in particular with regard to operations within the Random Routing Areas. While this review has been undertaken, within the context of the section relating to the AFI Region, it has become apparent that a wider review of the content of the AFI Region section including information pertaining to neighbouring airspaces, needs to be conducted.

1.2 As a result of the identified requirement to amend sections of the AFI Regional Supplementary Procedures, proposed amendments were presented to the ATS/AIS/SAR Sub Group meeting which convened recently in Nairobi, Kenya, for consideration. The proposed amendments were accepted, conditional to the amendments being presented to the SAT Group for review taking into account the effect the proposed amendments may have on neighbouring airspaces.

2. Action by the meeting

The meeting is invited to;

2.1. Review the content of the ATS/AIS/SAR SAG 11 WP 11 attached as Appendix **A** to this paper.

2.2. Review the proposed amendments, contained in the AFI section of The Regional Supplementary Procedures (Appendix **B)** and provide input to the proposed amendments with a view to harmonizing those sections which call for interaction with neighboring airspaces.

International Civil Aviation Organization

Eastern and Southern African Office

Eleventh Meeting of the APIRG Air Traffic Services, Aeronautical Information Services and Search and Rescue Sub-Group (ATS/AIS/SAR/SG/11)
[Nairobi, Kenya 26 – 30 April 2010]

Agenda Item 6: Performance Based Navigation (PBN) and AFI ATS Route Network

PROPOSED AMENDMENT TO DOC 7030, REGIONAL SUPPLEMENTARY PROCEDURES

(Presented by: South Africa)

SUMMARY

This WP proposes amendments to Doc. 7030(Regional Supplementary Procedures) relating to the requirement for RNAV capability with AORRA and IORRA, along with amendments to text which may not be relevant to operations within the AFI Region or EUR/SAM corridor areas of responsibility.

Reference: Doc 7030

1. INTRODUCTION

1.1 Activities relating to the implementation of Random Routing Procedures have identified the need to amend the Regional Supplementary Procedures in order to reflect the required navigation performance of flights utilising these areas, within the AFI Region area of responsibility. Proposed amendments to Doc 7030 are included in **Attachment A** to this paper.

2. GENERAL

2.1 While the focus of the proposed amendments to Doc 7030 is specifically related to the AFI section of the document, sight must not be lost of the fact that before finalising the text, consultation should also be undertaken with neighbouring regions, for example the EUR/SAM corridor FIRs, some of whose procedures have been included in the AFI section of this document.

2.2 Consultation could also be required with the neighbouring South American FIRs, with regard the co ordination of the publication of information relating to navigational requirements for the Random Routing Areas concerned.

3. DISCUSSION

3.1 While activities relating to the implementation and expansion of in particular the Atlantic Random Routeing Area(AORRA), are proceeding as planned, the information necessary to keep operators informed, while published on an individual basis by the States concerned, is lacing on a Regional basis. This could present at best an inconvenience to an operator intending to utilise the areas, while at worst lack of knowledge of Regional requirements could make a planned flight hazardous. In this case, the Doc 7030, has been lagging behind developments.

4. ACTION BY THE MEETING

4.1 The meeting is invited to:

a) Review the proposed amendments as reflected in **Attachment A** to this paper.

b) Support or propose alternate wording to that which has been presented.

c) Agree that this paper, together with the proposed text, as arrived at by the meeting, also be presented to the next meeting of the South Atlantic Group, which will be convening in Portugal during the month of May 2010, for review by that group.

d) Request ICAO, following reviews by all parties concerned, to undertake the necessary amendment to Doc 7030, in order to maintain the currency of the information contained within the document.

Doc 7030

Regional Supplementary Procedures

Approved by the Council
and published by authority of the Secretary General

Fifth Edition — 2008

International Civil Aviation Organization

AMENDMENTS

The issue of amendments is announced regularly in the *ICAO Journal* and in the supplements to the *Catalogue of ICAO Publications and Audio-visual Training Aids*, which holders of this publication should consult. The space below is provided to keep a record of such amendments.

RECORD OF AMENDMENTS AND CORRIGENDA

AMENDMENTS		
No.	Date	Entered by

CORRIGENDA		
No.	Date	Entered by

TABLE OF CONTENTS — GENERAL

FOREWORD

1. The ICAO Regional Supplementary Procedures (SUPPS) form the procedural part of the Air Navigation Plans developed by Regional Air Navigation (RAN) Meetings to meet those needs of specific areas which are not covered in the worldwide provisions. They complement the statement of requirements for facilities and services contained in the Air Navigation Plan publications. Procedures of worldwide applicability are included either in the Annexes to the Convention on International Civil Aviation as Standards or Recommended Practices, or in the Procedures for Air Navigation Services (PANS).

2. In the development of Regional Supplementary Procedures, the following criteria must be satisfied:

a) Regional Supplementary Procedures should indicate a mode of implementing procedural provisions in Annexes and PANS, as distinct from a statement or description of required facilities and services as published in the Air Navigation Plan publications. Regional Supplementary Procedures may also indicate permissible additions to provisions in Annexes and PANS, subject to the restrictions in b) and c).

b) Regional Supplementary Procedures must **not** be in conflict with the provisions contained in the Annexes or PANS. They must either specify detailed procedural regional options for those provisions or promulgate a regional procedure of justifiable operational significance, additional to existing provisions in Annexes or PANS.

c) In the drafting of Regional Supplementary Procedures, variations in the text of procedures with similar intent applicable to more than one area should be avoided.

3. The Regional Supplementary Procedures do not have the same status as Standards and Recommended Practices. The latter are **adopted** by Council in pursuance of Article 37 of the Convention on International Civil Aviation, subject to the full procedure of Article 90. PANS are **approved** by the President of the Council of ICAO on behalf of the Council and SUPPS are **approved** by the Council; the PANS are recommended to Contracting States for worldwide use, whilst the SUPPS are recommended to Contracting States for application in the groups of flight information regions to which they are relevant.

4. PANS were originally developed from common recommendations of regional meetings and were given worldwide application by the ICAO Council after action thereon by ICAO Divisions. Subsequently, there has been a gradual evolution of procedures from the regional to the worldwide category as ICAO Divisions have been able to adapt regionally developed procedures to worldwide requirements. Concurrently, some of the worldwide procedures have been found suitable for classification as Standards or Recommended Practices and therefore are gradually being incorporated into the Annexes to the Convention.

5. Application of the Regional Supplementary Procedures in certain areas of the world has been specified according to groups of flight information regions (FIRs) as shown on page (xiii). The abbreviations on the chart identifying the groups of flight information regions in which specific sets of SUPPS apply have been chosen in reference to ICAO region designators, but the limits of the areas of application do not necessarily coincide with the boundaries of the ICAO regions.

6. Whenever there is a specific relationship between a supplementary procedure and an Annex or PANS, such relationship has been indicated by reference to the parent document and relevant chapter, appendix, etc. These references appear above the text, together with the appropriate abbreviation as follows:

A — Annexes to the Convention
P — Procedures for Air Navigation Services

Examples: (A2 – Chapter 3) — Refers to Chapter 3 of Annex 2 — *Rules of the Air*
(P-ATM – Chapters 7 and 9) — Refers to Chapters 7 and 9 of Doc 4444 — *Procedures for Air Navigation Services — Air Traffic Management*.

7. The degree of non-application of the Regional Supplementary Procedures or national differences are notified in Aeronautical Information Publications in accordance with the provisions of Annex 15 — *Aeronautical Information Services* (cf. 4.1.1, 4.1.2 c) and Appendix 1).

8. This document is maintained by amendments as required. Any errors or omissions should be brought to the attention of the Secretary General, ICAO, 999 University Street, Montréal, Quebec, Canada H3C 5H7.

PROCEDURE FOR THE AMENDMENT OF REGIONAL SUPPLEMENTARY PROCEDURES

(Approved by Council (25-2) 20/5/55, (84-5) 7/3/75, (153-3) 25/2/98)

1. INTRODUCTION

1.1 Regional Supplementary Procedures are normally formulated at regional air navigation meetings and become effective after review by the Air Navigation Commission and approval by the Council.

1.2 Amendments to Regional Supplementary Procedures may be proposed by a Contracting State or group of States as set out in Section 2 or by an international organization as set out in Section 3 or may become necessary as a consequence of action by Council in adopting or amending Standards and Recommended Practices or in approving or amending Procedures for Air Navigation Services as set out in Section 4.

2. AMENDMENTS PROPOSED BY A CONTRACTING STATE OR GROUP OF STATES

2.1 If any Contracting State or group of States of a region wishes to propose an amendment to Regional Supplementary Procedures for that region, it should submit the proposal, adequately documented, to the Secretary General through the Regional Office accredited to that State. The proposal should include the facts that led the State to the conclusion that the amendment is necessary.

2.2 The Secretary General will circulate the proposal, adequately documented, with a request for comments to all provider and user States of the region considered affected, as well as to user States outside the region and international organizations that may be concerned with the proposal. If, however, the Secretary General considers that the proposed amendment conflicts with established ICAO policy or that it raises questions which the Secretary General considers should be brought to the attention of the Air Navigation Commission, the proposal will be first presented, adequately documented, to the Commission. In such cases, the Commission will decide on the action to be taken.

2.3 If, in reply to the Secretary General's inquiry to States and selected international organizations, no objection is raised to the proposal by a specified date, the Secretary General will circulate an amendment memorandum to Representatives on the Council and to Members of the Air Navigation Commission inviting each recipient to advise, normally within seven days,* whether formal discussion of the proposed amendment is desired. The memorandum will explain the proposed amendment, summarize the comments received and include Secretariat comments as appropriate. If, in reply to the Secretary General's inquiry to States and selected international organizations, any objection is raised and if the objection remains after further consultation, the matter will be documented for formal consideration by the Air Navigation Commission and appropriate recommendations of the Commission to the Council.

2.4 If, at the end of the seven-day period,* there has been no request for discussion of the amendment, it will be submitted to the President of the Council who is authorized to approve the amendment on behalf of the Council.

---

* During recess, a period of three weeks will normally be allowed.

2.5 If, on the other hand, any Representative on the Council or Member of the Air Navigation Commission indicates a desire for formal discussion of the proposed amendment, the matter will be documented for formal consideration by the Commission and appropriate recommendations of the Commission to the Council.

3. AMENDMENTS PROPOSED BY INTERNATIONAL ORGANIZATIONS

3.1 Proposals for the amendment of Regional Supplementary Procedures submitted by international organizations directly concerned with the operation of aircraft, which may be invited to attend suitable ICAO meetings and which attended the meeting(s) where the relevant procedures were prepared, will be dealt with in the same manner as those received from States, except that, before circulating a proposal to States and selected international organizations pursuant to 2.2, the Secretary General will ascertain whether it has adequate support from the State or group of States whose facilities, services and procedures will be affected. If such support is not forthcoming, the proposal will be presented to the Commission, and the Commission will decide on the action to be taken.

4. CONSEQUENTIAL AMENDMENTS

4.1 In the event of an amendment to Regional Supplementary Procedures becoming necessary as a consequence of action by Council in adopting or amending Standards and Recommended Practices or in approving or amending Procedures for Air Navigation Services, the amendment will be drafted by the Secretary General.

4.2 The Secretary General will circulate the amendment, together with relevant explanatory material, in a memorandum to each Member of the Air Navigation Commission inviting each recipient to notify him, normally within seven days,* whether formal discussion of the proposed amendment is desired.

4.3 If, at the end of the seven-day period,* there has been no request for discussion of the amendment, formal approval will be given by the Air Navigation Commission acting on behalf of the Council** or, if the Commission is in recess, by the President of the Council.

4.4 If any Commissioner indicates a desire for formal discussion of the amendment, the matter will be documented for formal consideration by the Air Navigation Commission. If the Commission concludes that the amendment is necessary, it is authorized to approve the amendment on behalf of the Council,** in its original form or modified.

5. PROMULGATION OF APPROVED AMENDMENTS

5.1 Amendments to Regional Supplementary Procedures that have been approved in accordance with the above procedures will be promulgated in Doc 7030, *Regional Supplementary Procedures.*

---

* During recess, a period of three weeks will normally be allowed.

** The Air Navigation Commission has been authorized [17-1, Doc 7328-1, (C/853-1)] to approve consequential amendments on behalf of the Council.

Glossary

ACAS	airborne collision avoidance systems
ACC	area control centre
ADLP	aircraft data link processor
ADS-B	automatic dependent surveillance – broadcast
ADS-C	automatic dependent surveillance – contract
AFCS	automatic flight control system
AFTN	aeronautical fixed telecommunication network
AIM	ATFM information message
AIP	aeronautical information publication
AIRAC	aeronautical information regulation and control
AIS	aeronautical information service
ANM	ATFM notification message
ANP	air navigation plan
AORRA	Atlantic Ocean Random Routing Area
ARO	air traffic services reporting office
ASDA	accelerate-stop distance available
ASE	altimetry system error
ASTER	ATFM system of the EUR region
ATC	air traffic control
ATFM	air traffic flow management
ATIS	automatic terminal information services
ATM	air traffic management
ATS	air traffic service
B-RNAV	basic area navigation
CAP	Code allocation plan
CARSAMMA	CAR/SAM monitoring agency
CFMU	central flow management unit
CHG	modification message
CNL	cancellation message
CPDLC	controller-pilot data link communications
CRAM	conditional route availability message
CTA	control area
CTOT	calculated take-off time
DAP	downlink aircraft parameter
DES	de-suspension message
DME	distance-measuring equipment
DOF	date of flight
EAD	European AIS database
EOBT	estimated off-block time

FIR	flight information region
FIS	flight information service
FL	flight level
FLAS	flight level allocation scheme
FLS	flight suspension message
FPL	flight plan
GAT	general air traffic
HF	high frequency
IFBP	in-flight broadcast by pilots
IFF	identification friend/foe
IFPS	initial flight plan processing system
IFR	instrument flight rules
IGA	international general aviation
INS	inertial navigation system
IORRA	Indian Ocean Random Routing Area
LAM	logical acknowledgement message
MASPS	minimum aviation system performance standards
MFA	minimum flight altitude
MNPS	minimum navigation performance specifications
MSA	minimum sector altitude
NOF	NOTAM offices
NOTAM	notice to airmen
OCA	oceanic control area
OTS	organized track system
PACOTS	Pacific organized track systems
PIB	pre-flight information bulletin
P-RNAV	precision area navigation
RFP	replacement flight plan
RNAV	area navigation
RNP	required navigation performance
RPL	repetitive flight plan
RTF	radiotelephony
RVR	runway visual range
RVSM	reduced vertical separation minimum

SAM	slot allocation message
SRM	slot revision message
SATMA	South Atlantic monitoring agency
SAT NAV	satellite navigation
SATCOM	satellite voice communications
SD	standard deviation
SELCAL	selective calling
SID	standard instrument departure
SIF	selective identification feature
SLC	slot cancellation message
SLOP	strategic lateral offset procedures
SSR	secondary surveillance radar
STAR	standard instrument arrival
STS	special handling
TA	transition altitude
TAS	true airspeed
TLS	target level of safety TMA
	terminal control area
TODA	take-off distance available
TORA	take-off run available
TVE	total vertical error
UAC	upper area control centre
UIR	upper flight information region
VSM	vertical separation minimum
VFR	visual flight rules
VOLMET	meteorological information for aircraft in flight
VOR	VHF omnidirectional radio range
WATRS	West Atlantic Route System

AFRICA-INDIAN OCEAN (AFI) REGIONAL SUPPLEMENTARY PROCEDURES

These procedures are supplementary to the provisions contained in Annex 2, Annex 6 (Parts I, II and III), Annex 11, PANS-ATM (Doc 4444) and PANS-OPS (Doc 8168). The area of application of the AFI Regional Supplementary Procedures is included on the Index to Application of Supplementary Procedures chart.

TABLE OF CONTENTS

Chapter 1. FLIGHT RULES

1.1 VISUAL FLIGHT RULES (VFR)

(A2 – Chapter 4)

1.1.1 Special application

1.1.1.1 VFR flights to be operated in specified portions of terminal control areas (TMAs) of selected aerodromes serving international flights shall:

a) have two-way radio communications;

b) obtain clearance from the appropriate ATC unit; and

c) report positions, as required.

Note.— The phrase "specified portions of terminal control areas" is intended to signify at least those portions of the TMA used by international IFR flights in association with approach, holding, departure and noise abatement procedures.

1.2 INSTRUMENT FLIGHT RULES (IFR)

(A2 – Chapters 2 and 5)

Note.— Annex 2, 2.2, permits a flight to operate using either instrument flight rules or visual flight rules when operated in visual meteorological conditions subject to the limitations listed in Chapter 4 of the Annex. The following indicates certain additional restrictions.

1.2.1 Special application

1.2.1.1 Flights shall be conducted in accordance with instrument flight rules when operated above flight level (FL) 150.

1.2.2 Flight level changes

(A2 – Chapter 5)

1.2.2.1 All changes of flight levels required by transition from the system of designated cruising levels for flights along controlled routes to the semicircular system of cruising levels, or vice versa, shall be made at points within controlled airspace.

1.2.2.2 The specific points to be used for the changes of flight levels mentioned in 1.2.2.1 shall be the subject of coordination between the ATS units concerned, bearing in mind the need to avoid points over boundaries or other points where transfer of communications/transfer of responsibility would be adversely affected.

1.3 AIR TRAFFIC ADVISORY SERVICE

(P-ATM – Chapter 9)

Note.— The PANS-ATM leaves it to the discretion of the pilot whether or not to obtain air traffic advisory service, where available. Obtaining air traffic advisory service is obligatory, however, when operating in Class F airspace.

1.3.1 All IFR flights shall comply with the procedures for air traffic advisory service when operating in Class F airspace.

Chapter 2. FLIGHT PLANS

2.1 CONTENT – GENERAL

(A2 – Chapter 3; P-ATM – Chapter 4 and Appendix 2)

2.1.1 Date of flight

Nil.

2.1.2 Area navigation (RNAV) specifications

2.1.2.1 Nil, with the exception of those flights intending to operate within the confines of the AORRA and in those portions of the IORRA, or on designated RNAV routes, where the requirement for RNAV 5 and RNP 10 (RNAV 10) has been documented. The letter R shall be inserted in Item 10 (Equipment) of the flight plan to indicate the aircraft meets the RNP type prescribed, has been appropriately approved and can comply with all conditions of that approval.

2.1.3 Required navigation performance (RNP) specifications

2.1.3.1 The letter R shall be inserted in Item 10 (Equipment) of the flight plan to indicate the aircraft meets the RNP type prescribed, has been appropriately approved and can comply with all conditions of that approval.

2.1.4 Minimum navigation performance specifications (MNPS)

Nil.

2.1.5 Reduced vertical separation minimum (RVSM)-approved aircraft

2.1.5.1 The letter W shall be inserted in Item 10 (Equipment) of the flight plan or Item Q of the repetitive flight plan (RPL) if the aircraft and operator have received RVSM State approval, regardless of the requested flight level. The aircraft registration shall be inserted in Item 18 of the flight plan.

2.1.6 Non-RVSM-approved aircraft

Note.— Non-RVSM aircraft intending to operate above FL 410 will need to flight plan in accordance with RVSM procedures of neighbouring regions, should the flight commence or terminate in those regions.

2.1.7 Non-RVSM-approved State aircraft

2.1.7.1 Operators of non-RVSM-approved State aircraft with a requested flight level of 290 or above shall insert STS/NON RVSM in Item 18 of the flight plan.

Note.— Non-RVSM aircraft intending to operate above FL 410 will need to flight plan in accordance with RVSM procedures of neighbouring regions, should the flight commence or terminate in those regions.

2.1.8 Indication of 8.33 kHz channel spacing capability

Nil.

2.1.9 Route

Nil.

2.1.10 Estimated times

Nil.

2.1.11 Mach number

2.1.11.1 For turbo-jet aircraft intending to operate at or above FL 250 within FIR Canarias, the planned true Mach number shall be specified in Item 15 of the flight plan.

2.1.12 Alternative flight level

Nil.

2.1.13 Special handling (STS)

Nil.

2.2 CONTENT – AIR TRAFFIC FLOW MANAGEMENT (ATFM)

2.2.1 Runway visual range (RVR)

Nil.

2.2.2 Flight plan addressing and distribution

Nil.

2.2.3 Slot allocation exemptions

Nil.

2.3 SUBMISSION

(A2 – Chapter 3)

2.3.1 General

2.3.1.1 When exercising the Annex 2 provision in 3.3.1.4 to prescribe a lead time for the submission of a flight plan other than 60 minutes before departure, the appropriate ATS authority shall prescribe a period of not less than 30 minutes.

2.3.2 Amendments

Nil.

2.4 REPETITIVE FLIGHT PLANS (RPLs)

Nil.

Chapter 3. COMMUNICATIONS

3.1 AIR-GROUND COMMUNICATIONS AND IN-FLIGHT REPORTING

3.1.1 Communications equipment

3.1.2 Continuous listening watch in uncontrolled airspace

(A2 – Chapters 3 and 5; P-ATM – Chapter 4)

3.1.2.1 All VFR flights, and IFR flights outside controlled airspace, shall maintain a listening watch on the frequency where flight information service is provided and report position unless otherwise authorized by the State overflown.

3.1.3 Position reports

Nil.

3.1.4 Abbreviated position reports

Nil.

3.1.5 Read-back of VHF channels

Nil.

3.2 MANDATORY CARRIAGE OF 8.33 KHZ CHANNEL SPACING CAPABLE RADIO EQUIPMENT

Nil.

3.3 CONTROLLER-PILOT DATA LINK COMMUNICATIONS (CPDLC)

Nil.

3.4 SATELLITE VOICE COMMUNICATIONS (SATCOM)

Nil.

3.5 AERONAUTICAL MOBILE SERVICE

3.5.1 Selective calling (SELCAL)

Nil.

3.5.2 HF operations

Nil.

3.6 AERONAUTICAL FIXED SERVICE

3.6.1 AFTN rationalization

Nil.

3.7 RADIO CHANNELS/FREQUENCIES

Nil.

Chapter 4. NAVIGATION

4.1 PERFORMANCE-BASED NAVIGATION (PBN)

Note.— As the Africa-Indian Ocean (AFI) Region transitions to PBN as contained in the Performance- based Navigation Manual *(Doc 9613),* ~~* 1.2.3.5~~ *the contents of 4.1 will be amended.*

4.1.1 Area navigation (RNAV) specifications

4.1.1.1 RNAV 10 (RNP 10)

Note.— RNAV 10 retains the RNP 10 designation, as specified in the Performance-based Navigation Manual *(Doc 9613),* ~~* 1.2.3.5~~.

Area of applicability

4.1.1.1.1 For flights on designated controlled oceanic routes, within designated random routing areas, or in areas within the Canarias FIR (southern sector), Dakar Oceanic, Recife and Sal Oceanic FIRs, and on designated routes over continental Africa, a lateral separation minimum of 93 km (50 NM) may be applied.

4.1.1.1.2 For flights in the EUR/SAM corridor (Canarias (southern sector), Dakar Oceanic, Recife and Sal Oceanic FIRs), a longitudinal separation minimum of 93 km (50 NM) derived by RNAV may be applied between RNAV-equipped aircraft approved to RNP 10 or better, in accordance with the provisions of the PANS-ATM, 5.4.2.6.

4.1.1.1.3 Longitudinal distance-based separation minima of 93 km (50 NM) between RNAV aircraft on the same track on RNP 10 routes over continental Africa or within designated random routing areas, shall not be used. A time separation as agreed to between Air Traffic Service centres will be applied.

Means of compliance (This information should be repositioned in order to cover both RNAV and RNP activities)

4.1.1.1.4 ~~For application of 4.1.1.1.1 and 4.1.1.1.2,~~ The aircraft and the operator must have been approved by the State of Registry or the State of the Operator, as appropriate, to meet the following requirements (or equivalent):

a) aircraft are approved to ~~RNP 10~~ the required RNP criteria, in accordance with provisions contained in the *Performance-based Navigation Manual* (Doc 9613);* and

b) operator programmes shall be established to mitigate the occurrence of large navigational errors due to equipment malfunction or operational error:

1) operator in-flight operating drills shall include mandatory navigation cross-checking procedures to identify navigation errors in sufficient time to prevent aircraft from inadvertent deviation from an ATC-cleared route; and

~~* In preparation.~~

2) the operator shall establish programmes to provide for the continued airworthiness of aircraft navigation systems necessary to navigate to the degree of accuracy required.

Note.— Detailed guidance material on RNP is contained in the Performance-based Navigation Manual *(Doc 9613)*.*

4.1.1.2 RNAV 5

Nil.

4.1.1.3 RNAV 2

Nil.

4.1.1.4 RNAV 1

Nil.

4.1.1.5 Pre-PBN navigation specifications

Nil.

4.1.2 Required navigation performance (RNP) specifications

4.1.2.1 RNP 4

4.1.2.1.1 For flights on designated controlled oceanic routes or areas within the Canarias FIR (southern sector), Dakar Oceanic, Recife and Sal Oceanic FIRs, and on designated routes over continental Africa, a lateral separation minimum of 55.5 km (30 NM) may be applied.

4.1.2.1.2 For flights in the EUR/SAM corridor (Canarias (southern sector), Dakar Oceanic, Recife and Sal Oceanic FIRs), a longitudinal separation minimum of 93 km (50 NM) derived by RNAV may be applied between RNAV- equipped aircraft approved to RNP 4 or better, in accordance with the provisions of the PANS-ATM, 5.4.2.6.

4.1.2.1.3 Longitudinal distance-based separation minima of 55.5 km (30 NM) between RNAV aircraft on the same track on RNP 4 routes over continental Africa shall not be used. A time separation as agreed to between Air Traffic Service centres will be applied.

4.1.2.2 Basic RNP 1

Nil.

4.1.2.3 Advanced RNP 1

Nil.

4.2 REDUCED VERTICAL SEPARATION MINIMUM (RVSM) Area of applicability

4.2.1 A minimum vertical separation of 300 m (1 000 ft) between RVSM-approved aircraft shall be applied between FL 290 and FL 410 inclusive in the following FIRs: Accra, Addis Ababa, Antananarivo, Asmara, Beira, Brazzaville, Canarias, Cape Town, Dakar, Dakar Oceanic, Dar es Salaam, Entebbe, Gaborone, Harare, Johannesburg, Johannesburg Oceanic, Kano, Khartoum, Kinshasa, Lilongwe, Luanda, Lusaka, Mauritius, Mogadishu, Nairobi, N'Djamena, Niamey, Roberts, Sal Oceanic, Seychelles, Tripoli and Windhoek.

Means of compliance

(A2 – Chapter 5 and Appendix 3; A6, Part I – Chapters 3, 4 and 7;
A6, Part II – Chapters 3 and 7; A8, Part IIIA – Chapter 8; A11 – Chapter 2)

4.2.2 Operators intending to conduct flights within the AFI Region where RVSM is applied shall require an RVSM approval from either the State of Registry or the State of the Operator. The State of Registry or the State of the Operator, as appropriate, should verify that the height-keeping performance capability of approved aircraft meets the requirements specified in Annex 6, Parts I and II.

Chapter 5. SURVEILLANCE

(P-ATM – Chapter 8; P-OPS, Vol. I, Part III)

5.1 SECONDARY SURVEILLANCE RADAR (SSR)

5.1.1 Carriage of pressure-altitude reporting SSR transponders

5.1.1.1 All aircraft operating as IFR flights in the AFI Region shall be equipped with a pressure-altitude reporting SSR transponder.

5.1.1.2 Unless otherwise directed by air traffic control, the last assigned SSR (Mode A) code shall be retained. If no SSR code has been assigned, Mode A code 2000 shall be selected and retained.

5.1.2 Code allocation methodology

Nil.

5.1.3 Assignment of SSR codes

Nil.

5.1.4 Operation of pressure-altitude reporting SSR transponders

Nil.

5.1.5 Monitoring of SSR-derived information

Nil.

5.2 SSR MODE S

5.2.1 Carriage and operation of SSR Mode S

Nil.

5.2.2 Transition between Mode A/C and Mode S

Nil.

5.3 AIRBORNE COLLISION AVOIDANCE SYSTEMS (ACAS)

Annex 6 Part 1 and Part 2

5.3.1 Carriage and operation of ACAS II

Nil.

5.4 AUTOMATIC DEPENDENT SURVEILLANCE – CONTRACT (ADS-C)

ADS –C has been promulgated as primary means of ~~communication~~ surveillance for en-route operations within designated areas of the AFI Region

~~Nil.~~

5.5 AUTOMATIC DEPENDENT SURVEILLANCE – BROADCAST (ADS-B)

Nil.

Chapter 6. AIR TRAFFIC SERVICES

6.1 AIR TRAFFIC CONTROL (ATC) CLEARANCES

(A11 – Chapter 3; P-ATM – Chapter 4)

6.1.1 Content

6.1.1.1 Only RVSM-approved aircraft shall be issued an air traffic control clearance to enter and operate within the AFI RVSM airspace. Non-RVSM-approved State aircraft shall, subject to ATM capacity, be issued a clearance to operate within the AFI RVSM airspace.

6.1.1.2 Non-RVSM-approved aircraft intending to operate above FL 410 will be required to have the capability to execute an uninterrupted climb or descent through the AFI RVSM airspace. Such flights shall be given appropriate ATC clearances, which will be subject to traffic levels at the time clearance is requested.

6.1.1.3 ***Air traffic control clearance into AFI RVSM airspace shall not be issued to formation flights.***

6.1.2 Adherence

Nil.

6.2 SEPARATION

6.2.1 Lateral

(A11 – Attachment B; Doc 9613,* Vol. II, Part B; P-ATM – Chapters 5 and 15)

6.2.1.1 Minimum lateral separation shall be 185 km (100 NM) except as provided for in 6.2.1.2 and 6.2.1.3.

6.2.1.2 Where aircraft are transiting into airspace with a larger lateral minimum than the airspace being exited, lateral separation will continue to exist provided that:

a) the smaller separation minimum exists;

b) flight paths diverge by 15 degrees or more until the larger minimum is established; and

c) it is possible to ensure, by means approved by the appropriate ATS authority, that the aircraft have navigation capability necessary to ensure accurate track guidance.

6.2.1.3 Minimum lateral separation shall be 93 km (50 NM) between aircraft meeting the provisions in 4.1.1.1.

* In preparation.

6.2.2 Longitudinal

(P-ATM – Chapter 5)

6.2.2.1 Except as provided for in 6.2.2.2, the minimum longitudinal separation between turbo-jet aircraft shall be:

a) 20 minutes, except as specified below;

b) 15 minutes at or above FL 250 within the Canarias, Dakar Oceanic, Recife and Sal Oceanic FIRs, provided that the Mach number technique is applied and, whether in level, climbing or descending flight, the aircraft have reported over the same entry point to the ATS routes or a common point into the oceanic-controlled airspace and follow the same track or continuously diverging tracks; or

c) 10 minutes or 150 km (80 NM), derived by RNAV, when the Mach number technique is applied on designated controlled RNP 10 oceanic routes in the EUR/SAM corridor within the Dakar Oceanic, Recife and Sal Oceanic FIRs; or

d) 10 minutes when the Mach number technique is applied on RNP 10 designated routes over continental Africa.

6.2.2.2 Minimum longitudinal separation shall be 93 km (50 NM) derived by RNAV between aircraft in the EUR/SAM corridor meeting the provisions of 4.1.1.1.

6.2.2.3 Longitudinal distance-based separation minima of 93 km (50 NM) between RNAV aircraft on the same track on RNP 10 routes over continental Africa shall not be used.

6.2.3 Composite

Nil.

6.2.4 Vertical

6.2.4.1 An RVSM of 300 m (1 000 ft) shall be applied between FL 290 and FL 410 inclusive within the FIRs specified in 4.2.1.

6.2.4.2 The minimum separation of 6.2.4.1 shall only be applied between aircraft where those aircraft and the operator have been approved by the State of Registry or the State of the Operator, as appropriate, to conduct flights in RVSM airspace.

6.2.4.3 Aircraft that have not received RVSM State approval may be cleared to operate in airspace where RVSM may be applied in accordance with policy and procedures established by the State provided that 600 m (2 000 ft) vertical separation is applied.

6.2.5 Radar

Nil.

6.2.6 Reduction in separation minima

(A11 – Chapter 3; P-ATM – Chapter 5)

6.2.6.1 Where, circumstances permitting, separation minima lower than those specified in 6.2.1 and 6.2.2 will be applied in accordance with the PANS-ATM, appropriate information should be published in Aeronautical Information Publications so that users of the airspace are fully aware of the portions of airspace where the reduced separation minima will be applied and of the navigation aids on which those minima are based.

6.2.7 Airspace reservations

Nil.

6.3 MINIMUM FLIGHT LEVEL

(P-ATM – Chapter 4; P-OPS, Volume I)

6.3.1 Establishment

6.3.1.1 The lowest useable flight level shall be calculated from actual QNH, unless the pressure variation is so small that reference to climatological data is acceptable.

Note 1.— The lowest useable flight level will provide a terrain clearance of at least 300 m (1 000 ft).

Note 2.— MET Offices will inform ATS units when, in abnormal conditions, pressure goes below the minimum climatological value, in order that appropriate steps can be taken to cancel temporarily the use of the lowest flight level or levels that would not ensure the minimum terrain clearance.

6.3.1.2 Based on current and anticipated atmospheric pressure distribution, area control centres shall coordinate, when required, the lowest flight level to be used.

6.3.1.3 In determining the transition level, Table 1 should be used when necessary. This table shows the transition level directly as a function of the transition altitude of the aerodrome and of the current QNH altimeter setting value. To determine the transition level for a transition layer of 150 m (500 ft), 300 m (1 000 ft), etc., it will suffice to add the figure 5, 10, etc., to the transition level shown in the appropriate table.

6.3.1.4 The columns on the left show the values that can be assigned to transition altitudes and the top lines indicate the pressure ranges in millibars between which the QNH values of the aerodrome fluctuate. The transition level for a transition layer of at least 0 m (0 ft) appears in each consolidated table in the form indicated below.

Note.— The values for transition altitude, indicated in metres and feet, are given merely for the purpose of identifying typical transition altitudes. Although pairs of values are given in each column, this does not necessarily mean that they are equivalent.

Example explaining the use of the table

Assuming a given QNH value (e.g. 1 012.5 mb) and a given transition altitude (e.g. 1 410 m), the transition level (under the conditions indicated) is FL 50. Should a transition layer of at least 300 m (1 000 ft) be required, then the flight level corresponding to the transition level is 60.

Since the transition altitude for each location has a fixed value, the only line of the table to be used at all times is that which includes this altitude. For example, in the case of an aerodrome with a transition altitude of 1 560 m, (5 200 ft), it could be:

QNH / TA m	TA ft	From 949.1 to 966.5	From 966.6 to 984.2	From 984.3 to 1 002.2	From 1 002.3 to 1 020.5	From 1 020.6 to 1 039.1	From 1 039.2 to 1 057.9
1 560	5 200	70	65	60	55	50	45

Table 1. Method to determine the transition level which will at least coincide with the flight level corresponding to the transition altitude

TA m	TA ft	TA m	TA ft	TA m	TA ft	TA m	TA ft	TA m	TA ft	From 942.2 to 959.4	From 959.5 to 977.1	From 977.2 to 995.0	From 995.1 to 1 013.2	From 1 013.3 to 1 031.6	From 1 031.7 to 1 050.3
										From 945.6 to 963.0	From 963.1 to 980.7	From 980.8 to 998.6	From 998.7 to 1 016.8	From 1 016.9 to 1 035.3	From 1 035.4 to 1 054.1
										From 949.1 to 966.5	From 966.6 to 984.2	From 984.3 to 1 002.2	From 1 002.3 to 1 020.5	From 1 020.6 to 1 039.1	From 1 039.2 to 1 057.9
										From 952.6 to 970.0	From 970.1 to 987.8	From 987.9 to 1 005.9	From 1 006.0 to 1 024.2	From 1 024.3 to 1 042.8	From 1 042.9 to 1 061.7
										From 956.1 to 973.5	From 973.6 to 991.4	From 991.5 to 1 009.5	From 1 009.6 to 1 027.9	From 1 028.0 to 1 046.6	From 1 046.7 to 1 065.5
450	1 500	480	1 600	510	1 700	540	1 800	570	1 900	35	30	25	20	15	10
600	2 000	630	2 100	660	2 200	690	2 300	720	2 400	40	35	30	25	20	15
750	2 500	780	2 600	810	2 700	840	2 800	870	2 900	45	40	35	30	25	20
900	3 000	930	3 100	960	3 200	990	3 300	1 020	3 400	50	45	40	35	30	25
1 050	3 500	1 080	3 600	1 110	3 700	1 140	3 800	1 170	3 900	55	50	45	40	35	30
1 200	4 000	1 230	4 100	1 260	4 200	1 290	4 300	1 320	4 400	60	55	50	45	40	35
1 350	4 500	1 380	4 600	1 410	4 700	1 440	4 800	1 470	4 900	65	60	55	50	45	40
1 500	5 000	1 530	5 100	1 560	5 200	1 590	5 300	1 620	5 400	70	65	60	55	50	45
1 650	5 500	1 680	5 600	1 710	5 700	1 740	5 800	1 770	5 900	75	70	65	60	55	50
1 800	6 000	1 830	6 100	1 860	6 200	1 890	6 300	1 920	6 400	80	75	70	65	60	55
1 950	6 500	1 980	6 600	2 010	6 700	2 040	6 800	2 070	6 900	85	80	75	70	65	60
2 100	7 000	2 130	7 100	2 160	7 200	2 190	7 300	2 220	7 400	90	85	80	75	70	65

6.4 ATS ROUTES

6.4.1 Track systems

Nil.

6.4.2 RNAV

Nil.

6.5 AERODROME OPERATIONS

6.5.1 Area of applicability

Nil.

6.5.2 Intersection take-off

Nil.

6.5.3 Multiple line-ups on the same runway

Nil.

6.5.4 Visual departures

Nil.

6.5.5 Visual approaches

Nil.

6.6 RNAV PROCEDURES

6.6.1 General

Nil.

6.6.2 En route

Nil.

6.6.3 Terminal

Nil.

6.6.4 State aircraft

Nil.

6.7 RNP PROCEDURES

6.7.1 General

Nil.

6.7.2 En route

Nil.

6.7.3 Terminal

Nil.

6.7.4 State aircraft

Nil.

6.8 COMPOSITE PROCEDURES

Nil.

6.9 MNPS PROCEDURES

Nil.

6.10 RVSM PROCEDURES

6.10.1 General

6.10.1.1 Operation of aircraft not approved for RVSM

6.10.1.1.1 ~~Except for areas where transition areas have been established,~~ ~~Aircraft not meeting the requirements of 4.2.2 shall not be allowed to operate in EUR/SAM RVSM airspace.~~ (This paragraph is no longer relevant as the AFI Region as whole is RVSM compliant)

6.10.1.1.2 ~~Exceptionally,~~ Aircraft such as State aircraft[1] that have not received RVSM State approval may be cleared to operate in airspace where RVSM ~~may be~~ is applied in accordance with policy and procedures established by the State provided that 600 m (2 000 ft) vertical separation is applied.~~(State Flights)~~

~~*Note.— Transitions to and from EUR/SAM RVSM airspace will normally take place in the first FIR in EUR/SAM RVSM airspace.*~~

~~6.10.2 Transition to/from RVSM airspace~~

~~(A2 – Appendix 3; A6, Parts I and II, Chapter 7; A11 – Chapter 3; P-ATM – Chapter 5)~~

~~6.10.2.1 In order to allow for the transition of flights to and from EUR/SAM RVSM airspace, the ATS authorities responsible for Canarias, Dakar Oceanic, Recife and Sal Oceanic FIRs may establish designated RVSM transition areas. A 300 m (1 000 ft) vertical separation minimum may be applied between RVSM-approved aircraft within these transition areas.~~

~~6.10.2.2 An RVSM transition area shall have a vertical extent of FL 290 to FL 410 inclusive, be contained within horizontal dimensions determined by the provider States, be overlapping with or contained within EUR/SAM RVSM airspace and should have direct controller-pilot communications.~~

6.11 ATS COORDINATION

6.11.1 Between units providing area control services

(A11- Chapter 3; P-ATM – Chapter 10)

6.11.1.1 If a flight should enter an adjacent area, information concerning any revision of the estimate of three minutes or more shall be forwarded to the adjacent area control centre.

6.11.2 RNAV

Nil.

6.11.3 RNP

Nil.

6.11.4 RVSM

Nil.

6.11.5 SSR codes

Nil.

[1] In terms of ICAO Doc 7300

6.12 ATS MESSAGES

6.12.1 Flight plan and departure

(P-ATM – Chapter 11)

6.12.1.1 Filed flight plan messages for flights intending to operate within the NAT Region at a distance of 110 km (60 NM) or less from the northern and southern boundaries of Gander Oceanic and Shanwick Oceanic flight information regions shall be addressed to the area control centres in charge of the NAT flight information regions along the route and, in addition, to the area control centres in charge of the nearest adjacent NAT flight information regions.~~.~~ (Relevancy to AFI Region operations ????) Not sure

6.12.1.2 For flights departing from points within adjacent regions and entering the NAT Region without intermediate stops, filed flight plan messages shall be transmitted to the appropriate area control centres immediately after the flight plan has been submitted~~.~~ (Relevancy to AFI Region operations ????) Not sure

6.12.2 Arrival

Nil.

6.12.3 Boundary estimates

Nil.

6.12.4 Computer-assisted coordination

Nil.

6.13 FLIGHT INFORMATION SERVICE (FIS)

6.13.1 Automatic terminal information services (ATIS)

Nil.

6.13.2 SIGMETs

(P-ATM – Chapter 9)

6.13.2.1 Transmission of SIGMET information to aircraft shall be at the initiative of the appropriate ATS unit, by the preferred method of directed transmission followed by acknowledgement, or by a general call when the number of aircraft would render the preferred method impracticable.

6.13.2.2 SIGMET information passed to aircraft shall cover a portion of the route up to two hours' flying time ahead of the aircraft.

6.13.3 Special air-reports

Nil.

6.13.4 Amended aerodrome forecasts

(P-ATM – Chapter 9)

6.13.4.1 Amended aerodrome forecasts shall be passed to aircraft within 60 minutes from the aerodrome of destination, unless the information has been made available through other means.

6.13.5 Landing forecasts

(A11 – Chapter 4)

6.13.5.1 The latest landing forecast available to the ATS unit, provided it is no more than one hour old, shall always be transmitted to an aircraft, together with the latest report of routine or special observation, when the aircraft requests the latter information.

6.14 ALERTING SERVICE

Nil.

Chapter 7. SAFETY MONITORING

7.1 STRATEGIC LATERAL OFFSET PROCEDURES (SLOP)
(P-ATM - Chapter 15)

a) SLOP will be applied in those Oceanic FIRs where fixed routes are established excluding defined random routing areas.

b) SLOP will be applied in all areas of the Continental AFI Region except in those areas where ATC separation is provided by surveillance, unless approved by the State.

Note 1: Pilots may contact other aircraft on the inter-pilot frequency 123.45 MHz to coordinate offset. Pilots are to note that frequency 126.90 MHz is mostly used in the AFI Region.

7.2 AIRSPACE MONITORING

7.2.1 General

Nil.

7.2.2 RNAV

7.2.2.1 A target level of safety (TLS) of 5×10^{-9} fatal accidents per flight hour per dimension shall be established for route systems operating a 93 km (50 NM) lateral separation minimum. The safety level of such airspace shall be determined by an appropriate safety assessment.

Note.— Detailed guidance material on conducting safety assessments is contained in the Manual on Airspace Planning Methodology for the Determination of Separation Minima *(Doc 9689)*.

7.2.2.2 The following criteria are used in the operational assessment of airspace system safety:

a) the proportion of the total flight time spent by aircraft 46 km (25 NM) or more off the cleared track shall be less than 7×10^{-4}; and

b) the proportion of the total flight time spent by aircraft between 74 km and 110 km (40 NM and 60 NM) off the cleared track shall be less than 4.1×10^{-5}.

7.2.2.3 Adequate monitoring of flight operations shall be conducted to provide data to assist in the assessment of continuing compliance of aircraft with the lateral navigation performance capabilities of RNP 10 and 7.2.2.1. Such data shall include operational errors due to all causes. A safety assessment shall be carried out periodically, based on the data collected, to confirm that the safety level continues to be met.

Note.— Detailed guidance on monitoring is contained in the Air Traffic Services Planning Manual *(Doc 9426) and the* Manual on Airspace Planning Methodology for the Determination of Separation Minima *(Doc 9689).*

7.2.3 RNP

Nil.

7.2.4 RVSM

7.2.4.1 Target level of safety (TLS)

7.2.4.1.1 Application of RVSM in the airspace designated in 4.2.1 shall meet a TLS of 5×10^{-9} fatal accidents per aircraft flight hour due to all causes of risk in the vertical dimension.

7.2.4.1.2 Adequate monitoring of flight operations in the EUR/SAM and AFI RVSM airspace shall be conducted to assist in the assessment of continuing compliance of aircraft with the height-keeping capabilities in 4.2.2. Monitoring shall include assessment of other sources of risk to ensure that the TLS specified in 7.2.4.1.1 is not exceeded.

~~*Note.— Details of the policy and procedures for monitoring established by the South Atlantic Monitoring Agency (SATMA) are contained in the* Guidance Material on the Implementation of a 300 m (1 000 ft) Vertical Separation Minimum (VSM) for Application in the EUR/SAM Corridor.~~

Chapter 8. AIR TRAFFIC FLOW MANAGEMENT (ATFM)

8.1 PROVISION

Nil.

8.2 APPLICATION

Nil.

8.3 EXEMPTIONS FROM ATFM SLOT ALLOCATION

Nil.

8.4 DEPARTURE SLOT MONITORING

Nil.

8.5 PROMULGATION OF ATFM MEASURES

8.5.1 Strategic ATFM measures

Nil.

8.5.2 Amendments to promulgated strategic ATFM measures

Nil.

8.5.3 ATFM circulars and information

Nil.

8.5.4 Pre-flight information bulletin (PIB)

Nil.

8.5.5 Query procedures

Nil.

Chapter 9. SPECIAL PROCEDURES

Actions to ensure the safety of the flight, in any abnormal circumstance will be executed in accordance with Doc. 4444(PANS ATM) Chapter 15.

9.1 EMERGENCY DESCENT PROCEDURES

9.1.1 Action by the pilot-in-command

~~Nil.~~

9.1.2 Action by the ATS unit

~~Nil.~~

9.2 CONTINGENCY PROCEDURES INCLUDING TURN-BACKS

~~Nil.~~

9.3 AIR-GROUND COMMUNICATION FAILURE

~~Nil.~~

9.4 DEGRADATION OR FAILURE OF THE RNAV SYSTEM

9.4.1 Action by the pilot-in-command

Nil.

9.4.2 Action by the ATS unit

Nil.

9.5 LOSS OF VERTICAL NAVIGATION PERFORMANCE REQUIRED FOR RVSM

9.5.1 General

Nil.

9.5.2 Degradation of aircraft equipment – pilot reported

Nil.

9.5.3 Severe turbulence – not forecast

Nil.

9.5.4 Severe turbulence – forecast

Nil.

9.6 EN-ROUTE DIVERSION

Nil.

9.7 INTER-REGION INTERFACE FOR NON-RVSM-APPROVED AIRCRAFT

Nil.

9.8 MANNED BALLOON FLIGHTS

Nil.

Chapter 10. PHRASEOLOGY

10.1 RNAV

Nil.

10.2 RNP

Nil.

10.3 SURVEILLANCE

Nil.

10.4 AERODROME OPERATIONS

Nil.

10.5 ATFM

Nil.

Chapter 11. SEARCH AND RESCUE

11.1 INTERNATIONAL GENERAL AVIATION (IGA)

(A6, Part II – Chapter 6; A6, Part III – Chapter 4)

11.1.1 General aviation aircraft operating over designated areas, land or sea, where search and rescue operations would be difficult, should:

a) carry appropriate survival equipment; and

b) follow the routes or specified procedures if not equipped with two-way radio, except that under special circumstances, the appropriate authority may grant specific exemptions from this requirement.

Chapter 12. METEOROLOGY

12.1 AIRCRAFT OBSERVATIONS AND REPORTS

Nil.

Chapter 13. AERONAUTICAL INFORMATION SERVICES

13.1 NOTAM ADDRESSING AND DISTRIBUTION

Nil.

13.2 AERONAUTICAL CHART INFORMATION

13.2.1 Visual procedures

Nil.