

APPENDIX B

(NAME) AIR NAVIGATION PLAN

VOLUME II

(NAME) AIR NAVIGATION PLAN

VOLUME II

TABLE OF CONTENTS

PART 0 — Introduction	
PART I — General Planning Aspects (GEN)	
Table GEN II-1 — Homogeneous areas and major traffic flows identified in the Region	
PART II — Aerodromes / Aerodrome Operations (AOP)	
General Regional Requirements	
Table AOP II-1 — Requirements and capacity assessment in international aerodromes in the Region	
Specific Regional Requirements	
PART III — Communications, Navigation and Surveillance (CNS)	
General Regional Requirements	
Table CNS II-1 — AFTN Plan	
Table CNS II-2 — Required ATN Infrastructure Routing Plan	
Table CNS II-3 — ATS Direct Speech Circuits Plan	
Table CNS II-4 — HF Network designators applicable for the Region	
Specific Regional Requirements	
PART IV — Air Traffic Management (ATM)	
General Regional Requirements	
Specific Regional Requirements	
PART V — Meteorology (MET)	
General Regional Requirements	
Table MET II-1 — Meteorological watch offices [former 1B]	
Table MET II-2 — Aerodrome meteorological offices [former 1A]	
Table MET II-3 — VHF VOLMET broadcast [former Table ATS 2]	
Specific Regional Requirements	
PART VI — Search and Rescue Services (SAR)	
General Regional Requirements	
Table SAR II-1 — Rescue Coordination Centres (RCCs) and Rescue Sub-centres (RSCs) in the Region	
Chart SAR II-1 — Rescue Coordination Centres (RCCs) and Rescue Sub-Centres (RSCs) for the (NAME) Region(s)	
Specific Regional Requirements	
PART VII — Aeronautical Information Management (AIM)	
General Regional Requirements	
Table AIM II-1 - Responsibility for the provision of AIS/AIM Facilities and Services in the Region	
Table AIM II-2 - Production responsibility for sheets of the World Aeronautical Chart — ICAO 1: 1 000 000 or Aeronautical Chart — ICAO 1: 500 000	
Specific Regional Requirements	

**(NAME) ANP, VOLUME II
PART 0 – INTRODUCTION**

1. GENERAL

1.1 The background to the publication of ANPs in three volumes is explained in the Introduction in Volume I. The procedure for amendment of Volume II is also described in Volume I.

1.2 Volume II contains dynamic plan elements related to:

- a) the assignment of responsibilities to States for the provision of aerodrome and air navigation facilities and services; and
- b) the mandatory requirements related to aerodrome and air navigation facilities and services to be implemented by States in accordance with regional air navigation agreements.

1.3 Volume II does not list all facilities in the region(s) but only those required for international civil aviation operations in accordance with regional air navigation agreements. A regional air navigation agreement indicates a commitment on the part of the State(s) concerned to implement the requirement(s) specified. Documents from the Integrated Aeronautical Information Package and other publications should be consulted for information on additional facilities and for operational information in general. Detailed guidance material or concepts, complementary to the material in Volumes I, II and III are contained in documents that are referenced as (NAME) Documents.

2. MANAGEMENT OF REGIONAL AIR NAVIGATION PLANS

2.1 The elements in Volume II are reviewed by the (NAME of PIRG) in accordance with its schedule of meetings, in consultation with provider and user States, and with the assistance of the ICAO (NAME) Regional Office(s).

2.2 The information on States' facilities and services included in Volume II, should be updated following the process of regional air navigation agreements.

2.3 The development and maintenance of region-specific documents that provide detailed guidance material or concepts that are complementary to the material in Volumes I, II and III is the responsibility of the (NAME of PIRG).

(NAME) ANP, VOLUME II

PART I – GENERAL PLANNING ASPECTS (GEN)

1. INTRODUCTION

1.1. The material in this part of Volume II of ANP is applicable to one or more parts of the ANP. It should be taken into consideration in the overall planning process for the (NAME) Region(s).

2. GENERAL REGIONAL REQUIREMENTS

2.1. To facilitate air navigation systems planning and implementation, homogenous ATM areas and/or major traffic flows/routing areas have been defined for the Region(s). While these areas of routing do not encompass all movements in the Region(s), they include the major routes. This includes the domestic flights in that particular area of routing.

Homogeneous ATM area

2.2. A homogeneous ATM area is an airspace with a common ATM interest, based on similar characteristics of traffic density, complexity, air navigation system infrastructure requirements or other specified considerations. In such an ATM area a common detailed plan will foster the implementation of interoperable ATM systems. Homogeneous ATM areas may extend over States, specific portions of States, or groupings of States. They may also extend over large oceanic and continental areas. They are considered areas of shared interest and requirements.

2.3. The method of identifying homogeneous ATM areas involves consideration of the varying degrees of complexity and diversity of the worldwide air navigation infrastructure. Based on these considerations, planning could best be achieved at the global level if it was organized based on ATM areas of common requirements and interest, taking into account traffic density and the level of sophistication required.

Major traffic flows/routing areas

2.4. A major traffic flow refers to a concentration of significant volumes of air traffic on the same or proximate flight trajectories. Major traffic flows may cross several homogeneous ATM areas with different characteristics.

2.5. A routing area encompasses one or more major traffic flows, defined for the purpose of developing a detailed plan for the implementation of ATM systems and procedures. A routing area may cross several homogeneous ATM areas with different characteristics. A routing area specifies common interests and requirements of underlying homogeneous areas, for which a detailed plan for the implementation of ATM systems and procedures either for airspace or aircraft will be specified.

2.6. The homogeneous ATM areas and major traffic flows/routing areas identified are given in **Table GEN II-1**.

TABLE GEN II-1 - HOMOGENEOUS ATM AREAS AND/OR MAJOR TRAFFIC FLOWS IDENTIFIED IN THE (NAME) REGION(S)

EXPLANATION OF TABLE

Column		
1	Area of routing (AR)	Sequential number of area of routing
2	Homogeneous Areas and/or Traffic flows	Brief description and/or name
3	FIRs involved	List of FIRs concerned
4	Type of area covered	Brief description of type of area, examples: Oceanic or Continental High or low density Oceanic en-route or Continental en-route
5	Remarks	Homogeneous ATM Area and/or Major Traffic Flow and Region(s) concerned

Area of routing (AR)	Homogeneous Areas and/or Traffic flows	FIRs involved	Type of area covered	Remarks
1	2	3	4	5

(NAME) ANP, VOLUME II

PART II – AERODROMES / AERODROME OPERATIONS (AOP)

1. INTRODUCTION

1.1 This part of the (NAME) ANP, Volume II, complements the provisions in ICAO SARPs and PANS related to aerodrome design and operations (AOP). It contains dynamic plan elements related to the assignment of responsibilities to States for the provision of AOP facilities and services within a specified area in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300); and mandatory requirements related to AOP facilities and services to be implemented by States in accordance with regional air navigation agreements. Such agreement indicates a commitment on the part of the State(s) concerned to implement the requirement(s) specified.

2. GENERAL REGIONAL REQUIREMENTS

2.1 **Table AOP II-1** contains the list of facilities and services to be provided by the State concerned at each aerodrome that is listed in **Table AOP I-1** in Volume I. Table AOP II-1 shows the operational requirements at each aerodrome to be considered in planning the facilities and services for safe and efficient aircraft operations.

Visual aids for low visibility aerodrome operations

2.2 At aerodromes where there is a requirement to conduct low visibility operations, the appropriate visual and non-visual aids should be provided.

Non-precision approach aids

2.3 Where required by the topographic and/or environmental situation of an aerodrome, improved track guidance during departure and/or approach by specific non-visual and/or visual aids should be provided even if such aids would not normally be required in accordance with the SARPs.

Reduced runway declared distances for take-off

Note. — In the following operational requirements the term “intersection” is used to cover both intersection and junction concepts.

2.4 The reduced runway declared distances for take-off, as for those used for full runway declared distances, should consist of take-off run available (TORA), take-off distance available (TODA) and accelerate-stop distance available (ASDA).

2.5 The datum-line from which the reduced runway declared distances for take-off should be determined is defined by the intersection of the downwind edge of the specific taxiway with the runway edge. The loss, if any, of runway length due to alignment of the aircraft prior to take-off should be taken into account by the operators for the calculation of the aircraft’s take-off weight.

2.6 Intersections used as intermediate take-off positions should be identified by the “taxiway designator” to which the datum-line of the associated reduced runway declared distance for take-off refers.

2.7 At each international aerodrome, specific minima visibility for take-off should be established, regulating the use of intersection take-off positions. These minima should permit the appropriate ATC unit to maintain a permanent surveillance of the ground movement operations, and the flight crews to constantly secure their position on the manoeuvring area, so as to exclude any potential risk of confusion as

to the identification of the aircraft and intersections used for take-off. The minima should be consistent with the surface movement guidance and control system (SMGCS) provided at the aerodrome concerned.

2.8 The provision of marking and lighting aids together with signs should ensure the safe control and guidance of aircraft towards and at take-off intersections appropriate to the minima visibility criteria retained. At the runway holding position of the associated intersection take-off position, such signs should indicate the runway heading and the remaining TORA in metres.

2.9 At aerodromes regularly used by international commercial air transport, take-offs from runway/taxiway intersections may be justified for the following reasons:

- a) runway capacity improvement;
- b) taxi routes distances reduction;
- c) noise alleviation; and
- d) air pollution reduction.

2.10 The appropriate authorities should, upon prior consultation with aircraft operators, agree on the selection of suitable intermediate intersection take-off positions along the runway(s). Accordingly, authorities should determine the reduced runway declared distances for take-off associated with each selected intersection take-off position and establish the specific ATC rules and operational procedures/limitations. Such provisions should be published in the State aeronautical information publications (AIP).

Aerodrome capacity management

2.11 As an integral part of the air navigation system, the aerodrome should provide the needed ground infrastructure including, *inter alia*, lighting; taxiways; runway, including exits; aprons and precise surface guidance to improve safety and to maximize aerodrome capacity in all weather conditions. An efficient aerodrome capacity planning and management should include:

- a) reduction of runway occupancy time;
- b) the capability to safely manoeuvre in all weather conditions whilst maintaining capacity;
- c) precise surface guidance to and from a runway required in all conditions; and
- d) availability of information on the position (to an appropriate level of accuracy) and intent of all vehicles and aircraft operating on the movement area for the appropriate ATM community members.

2.12 States should ensure that adequate consultation and, where appropriate, cooperation between airport authorities and users/other involved parties are implemented at all international aerodromes to satisfy the provisions of aerodrome capacity assessment and requirement.

2.13 When international aerodromes are reaching designed operational capacity, a better and more efficient utilization of existing runways, taxiways and aprons is required. Runway selection procedures and standard taxi routes at aerodromes should ensure an optimum flow of air traffic with a minimum of delay and a maximum use of available capacity. They should also, if possible, take account of the need to keep taxiing times for arriving and departing aircraft as well as apron occupancy time to a minimum. The airport collaborative decision making (A-CDM) concept should be implemented to improve airport capacity as early as possible.

Aerodrome capacity assessment and requirement

2.14 The declared capacity/demand condition at aerodromes should be periodically reviewed in terms of a qualitative analysis for each system component and, when applicable, the result of the qualitative assessment upon mutual agreement be used for information.

2.15 The future capacity/demand, based on a forecast for the next five years, should be agreed upon after close cooperation between aerodrome authorities and affected users.

2.16 Operators should consult with aerodrome authorities when future plans indicate a significant increased requirement for capacity resulting in one of the elements reaching a limiting condition.

2.17 Aerodrome capacity should be assessed by aerodrome authorities in consultation with the parties involved for each component (terminal/apron/aircraft operations) using agreed methods and criteria for level of delays.

2.18 Where restrictions in aerodrome capacity are identified, a full range of options for their reduction or removal should be evaluated by the aerodrome authority, in close cooperation with the operators and other involved parties. Such options should include technical/operational/procedural and environmental improvements and facility expansion.

2.19 At many aerodromes, airspace capacity has influence on the aerodrome capacity. If the declared capacity of a specified airspace has influence on aerodrome operations, this should be indicated and action undertaken to reach a capacity in this airspace corresponding to the aerodrome capacity.

2.20 The possibility of overcoming capacity limitations should also take the use of other aerodromes in the vicinity into consideration.

Closure of regular aerodromes

2.21 When a regular aerodrome is to be closed, States should ensure that sufficient alternate aerodromes remain open to provide for the safety and efficiency of aircraft approaching the regular aerodrome that may be required to divert to an alternate.

Scheduling aerodrome maintenance

2.22 States, when planning major aerodrome maintenance work that would affect the regularity of international aircraft operations, should consider the need to notify aircraft operators sufficiently in advance prior to undertaking the scheduled work.

3. SPECIFIC REGIONAL REQUIREMENTS

3.1 TBD (if required).

Table AOP II-1 – REQUIREMENTS AND CAPACITY ASSESSMENT**EXPLANATION OF THE TABLE**

Note: Columns 3 to 5 for physical characteristics relate to runways and taxiways. The physical characteristics of taxiways and aprons should be compatible with the aerodrome reference code (Column 3) and appropriate for the runways with which they are related.

Column

- 1 Name of the city and aerodrome, preceded by the location indicator.
Note 1— When the aerodrome is located on an island and no particular city or town is served by the aerodrome, the name of the island is included instead of a city.
Designation of the aerodrome as:
RS — international scheduled air transport, regular use;
RNS — international non-scheduled air transport, regular use;
AS — international scheduled air transport, alternate use; and
ANS — international non-scheduled air transport, alternate use.
- 2 Required rescue and firefighting service (RFF). The required level of protection expressed by means of an aerodrome RFF category number, in accordance with Annex 14, Volume I, 9.2.
- 3 Aerodrome reference code (RC). The aerodrome reference code for aerodrome characteristics expressed in accordance with Annex 14, Volume I, chapter 1. The code letter or number within an element selected for design purposes is related to the critical aeroplane characteristics for which the facilities are provided.
- 4 Runway Designation numbers
- 5 Type of each of the runways to be provided. The types of runways, as defined in Annex 14, Volume I, Chapter 1, are:
NINST — non-instrument runway;
NPA — non-precision approach runway;
PA1 — precision approach runway, Category I;
PA2 — precision approach runway, Category II;
PA3 — precision approach runway, Category III.
- 6 Remarks. Additional information including critical design aircraft selected for determining RC, critical aircraft selected for determining the RFF category and critical aircraft for pavement strength. Only one critical aircraft type is shown if it is used to determine all the above three elements: otherwise different critical aircraft types need to be shown for different elements.

City/Aerodrome/Designation	RFF category	Physical characteristics			Remarks
		RC	RWY No.	RWY type	
1	2	3	4	5	6

(NAME) ANP, VOLUME II**PART III – COMMUNICATIONS, NAVIGATION AND SURVEILLANCE (CNS)****1. INTRODUCTION**

1.1 This part of the **(NAME)** ANP, Volume II, complements the provisions in ICAO SARPs and PANS related to communication, navigation and surveillance (CNS). It contains dynamic plan elements related to the assignment of responsibilities to States for the provision of CNS facilities and services within a specified area in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300); and mandatory requirements related to CNS facilities and services to be implemented by States in accordance with regional air navigation agreements. Such agreement indicates a commitment on the part of the State(s) concerned to implement the requirement(s) specified.

2. GENERAL REGIONAL REQUIREMENTS**Communications***Aeronautical Fixed Service (AFS)*

2.1 The aeronautical fixed service should comprise the following systems and applications that are used for ground-ground (i.e. point-to-point and/or point-to-multipoint) communications in the international aeronautical telecommunication service:

- a) ATS direct speech circuits and networks;
- b) meteorological operational circuits, networks and broadcast systems, including World Area Forecast System – Internet File Service (WIFS) and/or Satellite Distribution System for Information Relating to Air Navigation (SADIS);
- c) the aeronautical fixed telecommunications network (AFTN);
- d) the common ICAO data interchange network (CIDIN);
- e) the air traffic services (ATS) message handling services (AMHS); and
- f) the inter-centre communications (ICC).

2.2 To meet the data communication requirements, a uniform high-grade aeronautical network should be provided, based on the aeronautical telecommunication network (ATN), taking into account the existence and continuation of current networks.

2.3 Contingency procedures should be in place to ensure that, in case of a communication centre breakdown, all the parties concerned are promptly informed of the prevailing situation. All possible arrangements should be made to ensure that, in case of breakdown of a communications centre or circuit, at least high-priority traffic continues to be handled by appropriate means.

2.4 AFS planning should permit flexibility in detailed development and implementation. The required AFTN Stations and Centres are listed in the AFTN Plan in **Table CNS II-1**.

The Aeronautical Telecommunication Network (ATN)

2.5 The ATN should be able to:

- a) support applications carried by the existing networks;
- b) support gateways enabling inter-operation with existing networks; and
- c) support ground-ground communications traffic associated with air-ground data link applications.

2.6 The ATN should make optimum use of dedicated bilateral/multilateral aeronautical links and other communication means commensurate with the operational Quality of Service (QoS) requirements.

2.7 The implementation of the ATN should take into account the need for cost-effective evolution in terms of network capacity, requirements and time-frame and allow for a progressive transition from existing communication networks and services to a uniform, harmonised and integrated communications infrastructure, capable of supporting the implementation of future aeronautical services such as Flight and Flow Information in a Collaborative Environment (F-FICE), System-Wide Information Management (SWIM) applications, etc.

2.8 In case means other than dedicated bilateral links are used by the ATN, States should ensure that service level agreements (SLA) are met in terms of implementation priority, high availability, priority in restoration of service and appropriate levels of security.

2.9 The ATN should provide for interregional connections to support data exchange and mobile routing within the global ATN.

2.10 In planning the ATN, provisions should be made, where required, for interfacing with other international networks. The Required ATN Infrastructure Routing Plan is described under **Table CNS II-2**.

Network services

2.11 The Internet Society (ISOC) communications standards for the Internet Protocol Suite (IPS) should be used for the implementation of AMHS.

2.12 The migration from legacy bit-oriented protocols such as X.25 Protocol suite to IPS should be planned.

2.13 The migration of international or sub-regional ground networks to the ATN based on Internet Protocol (IP) to support AFS communication requirements, while reducing costs, should be planned.

2.14 States should ensure that the solutions provided for the implementation of the ATN meet the air traffic management and aeronautical fixed service requirements. Such requirements should consist of:

- a) Performance requirements: availability, continuity, integrity, monitoring and alerting criteria per data flow. In the case where a required communication performance (RCP) is globally prescribed, requirements derived from RCP should be stated;
- b) Interoperability requirements;
- c) Safety and security requirements, duly derived after the identification of operational hazards and threats, and allocation of objectives; and
- d) Implementation process requirements (creation, test, migration, upgrades, priority in restoration of service, termination).

Network management

2.15 An ICAO centralised off-line network management service is provided to participating AFTN/ AMHS centres in the **(NAME)** Region(s) under the ATS Messaging Centre (AMC).

2.16 In the case of integrated communications services procured and shared by several States, organizational provisions should allow for the planning and performing of the management of technical performance, network configuration, fault, security, cost division/allocation, contract, orders and payment.

Specific air traffic management (ATM) requirements

2.17 Where ATS speech and data communication links between any two points are provided, the engineering arrangements should be such as to avoid the simultaneous loss of both circuits. The required ATS direct speech circuits plan is detailed under **Table CNS II-3**.

2.18 Special provisions should be made to ensure a rapid restoration of ATS speech circuits in case of outage, as derived from the performance and safety requirements.

2.19 Data circuits between ATS systems should provide for both high capacity and message integrity.

2.20 The Inter-Centre Communication (ICC), consisting of ATS Inter-facility Data Communication (AIDC) application and the Online Data Interchange (OLDI) application, should be used for automated exchange of flight data between ATS units to enhance the overall safety of the ATM operation and increase airspace capacity.

2.21 Where Voice over IP is planned or implemented between ATS units for voice communications, it should meet the ATS requirements. When data and voice are multiplexed, particular attention should be paid to the achievement of the ATM performance and safety requirements.

Specific meteorological (MET) requirements

2.22 The increasing use of the GRIB (Gridded Binary or General Regularly-distributed Information in Binary form) and BUFR (Binary Universal Form for the Representation of meteorological data) code forms for the dissemination of the upper wind and temperature and significant weather forecasts and the planned transition to digital form using extensible markup language (XML)/geography markup language (GML) for the dissemination of OPMET data should be taken into account in the planning process of the ATN.

2.23 In planning the ATN, account should be taken of changes in the current pattern of distribution of meteorological information resulting from the increasing number of long-range direct flights and the trend towards centralized flight planning.

Specific aeronautical information management (AIM) requirements

2.24 The aeronautical fixed service should meet the requirements to support efficient provision of aeronautical information services through appropriate connections to area control centres (ACCs), flight information centres (FICs), aerodromes and heliports at which an information service is established.

Aeronautical Mobile Service (AMS)

2.25 To meet the air-ground data communication requirements, a high-grade aeronautical network should be provided based on the ATN, recognising that other technologies may be used as part of the transition. The network needs to integrate the various data links in a seamless fashion and provide for end-to-end communications between airborne and ground-based facilities.

2.26 Whenever required, use of suitable techniques on VHF or higher frequencies should be made. The required HF network designators applicable for the **(NAME)** Region(s) are listed in **Table CNS II-4**.

2.27 Aerodromes having a significant volume of International General Aviation (IGA) traffic should also be provided with appropriate air-ground communication channels.

Air-Ground Data Link Communications

2.28 A Strategy for the harmonised implementation of the data link communications in the **(NAME)** Region(s) should be developed based on the Global Operational Data Link Document (GOLD) adopted by ICAO Regions and the Aviation System Block Upgrade (ASBU) methodology.

2.29 Where applicable, controller-pilot data link communications (CPDLC), based on ATN VDL data link Mode 2 (VDL2) and/or FANS-1/A, should be implemented for air-ground data link communications.

2.30 Partial or divergent aircraft data link evolutions that result in excluding messages from aircraft systems should not be pursued. Interim steps or phases toward full implementation of the common technical definition in ground systems should only be pursued on a regional basis, after coordination between all States concerned.

2.31 Harmonization of operational procedures for implementation of the above packages is essential. States, Planning and Implementation Regional Groups (PIRGs) and air navigation services providers should adopt common procedures to support seamless ATS provision across FIR boundaries, rather than each State or Region developing and promulgating unique procedures for common functions.

Required Communication Performance (RCP)

2.32 The Required Communication Performance (RCP) concept characterizing the performance required for communication capabilities that support ATM functions without reference to any specific technology should be applied wherever possible.

2.33 States should determine, prescribe and monitor the implementation of the RCP in line with the provisions laid down in the *ICAO Manual on Required Communication Performance* (Doc 9869).

Navigation

Navigation Infrastructure

2.34 The navigation infrastructure should meet the requirements for all phases of flight from take-off to final approach and landing.

Note: Annex 10 to the Convention on International Civil Aviation—Aeronautical Telecommunications, Volume I — Radio Navigation Aids, Attachment B, provides the strategy for introduction and application of non-visual aids to approach and landing.

2.35 The **(NAME)** PBN Regional Roadmap/Plan provides guidance to air navigation service providers, airspace operators and users, regulators, and international organizations, on the expected evolution of the regional air navigation system in order to allow planning of airspace changes, enabling ATM systems and aircraft equipage. It takes due account of the operational environment of the **(NAME)** Region(s).

PBN Transition Strategy

2.36 During transition to performance-based navigation (PBN), sufficient ground infrastructure for conventional navigation systems should remain available. Before existing ground infrastructure is considered for removal, users should be given reasonable transition time to allow them to equip appropriately to attain a performance level equivalent to PBN. States should approach removal of existing ground infrastructure with caution to ensure that safety is not compromised. This should be guaranteed by conducting safety assessments and consultations with the users.

Use of specific navigation aids

2.37 Where, within a given airspace, specific groups of users have been authorized by the competent authorities to use special aids for navigation. The respective ground facilities should be located and aligned so as to provide for full compatibility of navigational guidance with that derived from the SARPs.

2.38 States should ensure and oversee that service providers take appropriate corrective measures promptly whenever required by a significant degradation in the accuracy of navigation aids (either space based or ground based or both) is detected.

Surveillance

2.40 An important element of modern air navigation infrastructure required to manage safely increasing levels and complexity of air traffic is aeronautical surveillance systems.

2.41 When operating Mode S radars, States should coordinate with their respective ICAO Regional Office the assignment of their corresponding interrogator identifier (II) codes and surveillance identifier (SI) codes, particularly where areas of overlapping coverage will occur.

Frequency Management

Aeronautical Mobile Service (AMS)

2.42 Frequencies should be assigned to all VHF aeronautical mobile service (AMS) facilities in accordance with the principles laid out in Annex 10, Volume V and *ICAO Handbook on Radio Frequency Spectrum Requirements for Civil Aviation* (Doc 9718) Volumes I and II, and take into account:

- a) agreed geographical separation criteria based on 25 kHz or 8.33 kHz interleaving between channels;
- b) agreed geographical separation criteria for the implementation of VDL services;

- c) the need for maximum economy in frequency demands and in radio spectrum utilization; and
- d) a deployment of frequencies which ensures that international services are planned to be free of interference from other services using the same band.

2.43 The priority order to be followed in the assignment of frequencies to service is:

- a) ATS channels serving international services (ACC, APP, TWR, FIS);
- b) ATS channels serving national purposes;
- c) channels serving international VOLMET services;
- d) channels serving ATIS and PAR; and
- e) channels used for other than ATS purposes.

2.44 The criteria used for frequency assignment planning for VHF AMS facilities serving international requirements should, to the extent practicable, also be used to satisfy the need for national VHF AMS facilities.

2.45 Special provisions should be made, by agreement between the States concerned, for the sharing and the application of reduced protection of non-ATS frequencies in the national sub-bands, so as to obtain a more economical use of the available frequency spectrum consistent with operational requirements.

2.46 States should ensure that no air/ground frequency is utilized outside its designated operational coverage and that the stated operational requirements for coverage of a given frequency can be met for the transmission sites concerned, taking into account terrain configuration.

Radio navigation aids for Aeronautical Radio Navigation Services (ARNS)

2.47 Frequencies should be assigned to all radio navigation facilities taking into account agreed geographical separation criteria to ILS localizer, VOR and GBAS, X and Y channels to DME, in accordance with the principles laid out in Annex 10, Volume V and *ICAO Handbook on Radio Frequency Spectrum Requirements for Civil Aviation* (Doc 9718) Volumes I and II. Also, the need for maximum economy in frequency demands and in radio spectrum utilization and a deployment of frequencies which ensures that international services are planned to be free of interference from other services using the same band, need to be considered.

2.48 The principles used for frequency assignment planning for radio navigation aids serving international requirements should, to the extent possible, also be used to satisfy the needs for national radio aids to navigation.

Support to ICAO Positions for ITU World Radiocommunication Conferences (WRCs)

2.49 Considering the importance and continuous demand of the radio frequency spectrum and for the protection of the current aeronautical spectrum and the allocation of new spectrum for the new services and system to be implemented in civil air navigation, States and international organizations are to support ICAO's position at ITU World Radiocommunication Conferences (WRCs) and in regional and other international activities conducted in preparation for ITU WRCs.

Note: The Handbook on Radio Frequency Spectrum Requirements for Civil Aviation (Doc 9718) Volume I, contains ICAO policy statements relevant to the aviation requirements for radio frequency spectrum. The handbook is intended to assist States and ICAO in preparing for ITU WRCs.

3. SPECIFIC REGIONAL REQUIREMENTS

EXAMPLES

3.1 *The surveillance systems to be used in the (NAME) Region(s) are:*

- a) *Secondary Surveillance Radars (SSR) Mode A, C and S in terminal and en-route continental airspace;*
- b) *Primary Surveillance Radars (PSR) mainly in terminal airspace;*
- c) *Automatic Dependent Surveillance – Broadcast (ADS-B) and Multilateration (MLAT) in terminal areas;*
- d) *ADS-B and Wide Area Multilateration (WAM) in most of the airspace;*
- e) *Automatic Dependent Surveillance – Contract (ADS-C) in some parts of the oceanic and remote continental airspace.*

(as appropriate)

3.2 *List of assigned frequencies...* **(as appropriate)**

3.3 *Where implemented, the criteria for MLS frequency planning in the (NAME) Region(s) should be applied, aimed at allowing the maximum number of MLS-associated DME frequencies on X and Y channels so as to minimize the possible use of W and Z channels.* **(as appropriate)**

**TABLE CNS II-1 - AERONAUTICAL FIXED TELECOMMUNICATIONS NETWORK (AFTN)
PLAN
EXPLANATION OF THE TABLE**

Column

- 1 The AFTN Centres/Stations of each State are listed alphabetically. Each circuit appears twice in the table. The categories of these facilities are as follows:
M - Main AFTN COM Centre
T - Tributary AFTN COM Centre
S - AFTN Station
- 2 Category of circuit:
M - Main trunk circuit connecting Main AFTN communication centres.
T - Tributary circuit connecting Main AFTN communication centre and Tributary AFTN Communications Centre.
S - AFTN circuit connecting an AFTN Station to an AFTN Communication Centre.
- 3 Type of circuit provided:
LTT/a - Landline teletypewriter, analogue (e.g. cable, microwave)
LTT/d - Landline teletypewriter, digital (e.g. cable, microwave)
LDD/a - Landline data circuit, analogue (e.g. cable, microwave)
LDD/d - Landline data circuit, digital (e.g. cable, microwave)
SAT/a/d - Satellite link, with /a for analogue or /d for digital
- 4 Circuit signalling speed in bits/s.
- 5 Circuit protocols
- 6 Data transfer code (syntax):
ITA-2 - International Telegraph Alphabet No. 2 (5-unit Baudot code).
IA-5 - International Alphabet No. 5 (ICAO 7-unit code).
CBI - Code and Byte Independency (ATN compliant).
- 7 Remarks

State/Station	Requirement					Remarks
	Category	Type	Signalling speed	Procotol	Code	
1	2	3	4	5	6	7

TABLE CNS II-2 - REQUIRED ATN INFRASTRUCTURE ROUTING PLAN
 Chapter 1 EXPLANATION OF THE TABLE

Column

- 1 Name of the Administration and Location of the ATN Router
- 2 Type of Router (in end systems (ES) of the Administration shown in column 1)
- 3 Type of Interconnection:
 Inter Regional: Connection between different Regions/ domains
 Intra Regional: Connection within a Region/ domain.
- 4 Connected Router: List of the Administration and location of the ATN routers to be connected with the router shown in column 1.
- 5 Bandwidth: Link Speed expressed in bits per second (bps)
- 6 Network Protocol: If Internet Protocol Suite is used, indicate version of IP (IPv4 or IPv6)
- 7 Via: The media used to implement the interconnection of the routers. (in case of IP service bought from a service provider, indicate VPN)
- 8 Remarks

Administration and Location	Type of Router	Type of Interconnection	Connected Router	Bandwidth	Network Protocol	Via	Remarks
1	2	3	4	5	6	7	8



**TABLE CNS II-3 - ATS DIRECT SPEECH CIRCUITS PLAN
EXPLANATION OF THE TABLE**

<i>Column</i>	
1 and 2	Circuit terminal stations are listed alphabetically by the Terminal I.
3	A — indicates ATS requirement for the establishment of voice communication within 15 seconds. D — indicates requirements for instantaneous communications.
4	Type of service specified: LTF — landline telephone (landline, cable, UHF, VHF, satellite). RTF — radiotelephone.
5	Type of circuits; Direct (DIR) or Switched (SW). D — indicates a direct circuit connecting Terminals I and II. S — indicates that a direct circuit does not exist and that the connection is established via switching at the switching centre(s) indicated in column 6. IDD — International direct dialling by public switch telephone network <i>Note 1.— Number of D and/or S circuits between Terminals I and II are indicated by numerical prefix, i.e. 2 D/S means 2 direct circuits and one switched circuit.</i> <i>Note 2.— Pending the implementation of proper ATS voice circuits, and provided that aeronautical operational requirements are met, IDD services may be used for the ATS voice communications in low traffic areas.</i>
6	Location of switching centre(s). Alternate routing location, if available, is indicated in brackets.
7	Remarks

ATS requirements for speech communications			Circuit			Remarks
Terminal I	Terminal II	Type	Service	D/S	To be switched via/	
1	2	3	4	5	6	7

**TABLE CNS II-4 - HF NETWORK DESIGNATORS
EXPLANATION OF THE TABLE**

Column

- 1 Name of station, preceded by its location indicator.
- 2 Network designators assigned to the facility providing HF radiotelephony en-route communications (selected from the provisions of the allotment plan in Appendix S27 to the ITU Radio Regulations).

NOTES

The ICAO designators for HF MWARA and VOLMET networks in the **(NAME)** region(s) are derived from the ITU allotment area abbreviations as contained in Appendix S27 to the ITU Radio Regulations.

ITU allotment area:

Two- and three-letter alpha entries indicate major world air route areas (MWARA): **TBD**

Four-letter alpha entries indicate VOLMET areas: **TBD**

Location Indicator and Name of location	HF en-route family
1	2

**HF FREQUENCIES AND THEIR ICAO NETWORK DESIGNATORS BASED ON ITU
APPENDIX S27 ALLOTMENT AREAS**

Frequency (kHz)	ITU allotment area	[NAME] xxx	[NAME] xy			Remarks
1	2	3	4	5	6....	8

(NAME) ANP, VOLUME II

PART IV - AIR TRAFFIC MANAGEMENT (ATM)

1. INTRODUCTION

1.1 This part of the (NAME) ANP, Volume II, complements the provisions in ICAO SARPs and PANS related to air traffic management (ATM). It contains dynamic plan elements related to the assignment of responsibilities to States for the provision of ATM facilities and services within a specified area in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300); and mandatory requirements related to ATM facilities and services to be implemented by States in accordance with regional air navigation agreements. Such agreement indicates a commitment on the part of the State(s) concerned to implement the requirement(s) specified.

2. GENERAL REGIONAL REQUIREMENTS

Optimization of traffic flows

2.1 The Planning and Implementation Regional Groups (PIRG), through regional air navigation agreement, are responsible for the optimization of the traffic flows through the continuous improvement of the regional ATS route network and organized track systems and implementation of random routing areas and free route airspace in the Region(s) through the set-up of appropriate mechanisms for regional and inter-regional planning and coordination.

2.2 Whenever practicable, States should, in close coordination with operators, establish the most efficient routings.

2.3 The requirements for regional ATS route network, in particular, for ATS routes over the high seas and airspace of undetermined sovereignty, should be agreed upon through regional air navigation agreement.

Note: States' AIPs and other States publications should be consulted for information on the implemented ATS routes.

Aircraft Identification-SSR Code Management

2.4 Within the context of air traffic management (ATM) and the provision of air traffic services (ATS), SSR code management is a key element of ATM to ensure continuous, unambiguous aircraft identification. The number of secondary surveillance radar (SSR) codes is limited and poor management of the assignment of SSR codes results in capacity constraints and aircraft delays. States and air navigation service providers (ANSP) should apply the SSR Code Allocation Plan approved by the (NAME) PIRG. The SSR Codes Allocation Plan of the (NAME) Region(s) is addressed in the Specific Regional Requirements of Volume II.

3. SPECIFIC REGIONAL REQUIREMENTS

EXAMPLE

Optimization of traffic flows

3.1 *The ATS routes agreed through regional air navigation agreement, or the ATS routes agreed through regional air navigation agreement but not implemented for specific reasons (Exact text to be specified by the Regions, as appropriate), are listed in **Table ATM II-XX/electronic database and reflected in the **Chart ATM II-XX.*****

Aircraft Identification-SSR Code Management

3.2 *The SSR Codes Allocation Plan of the (NAME) Region is in **Table ATM II-XX** (Exact text to be specified by the Regions, as appropriate).*

EXAMPLES FOR SPECIFIC REGIONAL REQUIREMENTS

Table ATM II-AFI-XX - SSR Code Allocation Plan

State/FIR	Domestic Codes	Domestic Codes	Transit Codes	Transit Codes
AAAA	2200-2277	2501-2577	6701-6777	0401-0477
BBBB	2100-2177	-	3300-3377	

SAMPLE

EXAMPLE FOR SPECIFIC REGIONAL REQUIREMENTS

Table ATM II-AFI-XX (NAME) Region ATS Routes

EXPLANATION OF THE TABLE

Column

- 1 Designator of ATS route and Type (Conventional, RNAV5 or RNAV1 etc.)
- 2 Significant points defining the ATS routes. Only prominent locations have been listed. Additional points where facilities are provided to complete navigational guidance along a route, but not otherwise marking significant characteristics of the route (change of heading of centre line, intersection with other routes, etc.) have normally not been included. Locations shown in parentheses indicate significant points outside the Region.
- Note 1. Not representing the operator's requirements. Operator's required route and/or nav aids are shown in square brackets ([]).
- Note 2. Subject to further study. Including associated navigation aid coverage.
- Note 3. Subject to military agreement.
- Note 4. Not acceptable at present.
- Note 5. At present, implementation is possible only during specific periods (e.g. weekends, nights, etc., as published).
- Note 6. At present, implementation of the RNAV route only possible above FL 300, or as published.
- Note 7. Unidirectional use.
- Note 8. For ATS route or part thereof is RNAV 1

Whenever reference to name is made in Table ATM II-XX in connection with the above notes, the following abbreviations, based on those indicated in Location Indicators (Doc 7910), are used:

HE Egypt
 HL Libyan Arab Jamahiriya
 HS Sudan
 OB Bahrain

LOWER AIRSPACE		UPPER AIRSPACE	
Designator Type	Significant Points	Designator Type	Significant Points
1	2	1	2
A1	METRU 340000N 0250900E SOKAL 323601N 0273706E KATEX 320701N 0282436E BOPED 312939N 0292655E ALEXANDRIA (NOZ) 311113N 0295701E MENKU 310531N 0301806E CAIRO (CVO) 300532N 0312318E	UA1	METRU 340000N 0250900E SOKAL 323601N 0273706E KATEX 320701N 0282436E BOPED 312939N 0292655E ALEXANDRIA (NOZ) 311113N 0295701E MENKU 310531N 0301806E CAIRO (CVO) 300532N 0312318E
A16	RASDA 330600N 0305700E MELDO 320201N 0310440E BALTIM (BLT) 313144N 0311035E DEGDI 311429N 0311035E CAIRO (CVO) 300532N 0312318E	UA16	RASDA 330600N 0305700E MELDO 320201N 0310440E BALTIM (BLT) 313144N 0311035E DEGDI 311429N 0311035E CAIRO (CVO) 300532N 0312318E
A408	(ADDIS ABABA) GWZ SALEH 140000N 0420000E ORNIS 1416.2N 04236.9E HODEIDAH 1446.4N 04259.2E	UA408	(ADDIS ABABA) GWZ SALEH 140000N 0420000E ORNIS 1416.2N 04236.9E HODEIDAH 1446.4N 04259.2E
A411	BNINA (BNA) 3207.28N 0201513E NASER 3151.2N 2355.3E LOSUL 314100N 250800E SIDI BARANI (BRN) 313532N 260020E	UA411	BNINA (BNA) 3207.28N 0201513E NASER 3151.2N 2355.3E LOSUL 314100N 250800E SIDI BARANI (BRN) 313532N 260020E

(NAME) ANP, VOLUME II

PART V – METEOROLOGY (MET)

1. INTRODUCTION

1.1 This part of the (NAME) ANP, Volume II, complements the provisions in the ICAO SARPs and PANS related to aeronautical meteorology (MET). It contains dynamic plan elements related to the assignment of responsibilities to States for the provision of MET facilities and services within a specified area in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300); and mandatory requirements related to the MET facilities and services to be implemented by States in accordance with regional air navigation agreements. Such agreement indicates a commitment on the part of the States concerned to implement the requirements specified.

2. GENERAL REGIONAL REQUIREMENTS

Meteorological offices

2.1 In the (NAME) Region(s), meteorological watch offices (MWO) have been designated to maintain continuous watch on meteorological conditions affecting flight operations within their area(s) of responsibility, as indicated at **Table MET II-1**.

Meteorological observations and reports

2.2 In the (NAME) Region(s), routine observations, issued as a METAR, should be made throughout the 24 hours of each day at intervals of one hour or, for RS and AS designated aerodromes¹, at intervals of one half-hour at aerodromes as indicated in **Table MET II-2**. For aerodromes included on the VHF VOLMET broadcast as indicated in **Table MET II-3**, routine observations, issued as METAR, should be made throughout the 24 hours of each day. **(at intervals of one half-hour) [if applicable]**.

2.3 At aerodromes that are not operational throughout 24 hours, METAR should be issued at least 3 hours prior to the aerodrome resuming operations in the (NAME) Region(s).

Forecasts

2.4 In the (NAME) Region(s), an aerodrome forecast, issued as a TAF, should be for the aerodromes indicated in **Table MET II-2**.

2.5 In the (NAME) Region(s), the period of validity of a routine TAF should be of 9-, 24-, or 30-hours to meet the requirements indicated in **Table MET II-2**.

2.6 In the (NAME) Region(s), the forecast maximum and minimum temperatures expected to occur during the period of validity, together with their corresponding day and time of occurrence, should be included in TAF at aerodromes indicated in **Table MET II-2**.

2.7 In the (NAME) Region(s), landing forecasts (prepared in the form of a trend forecast) should be provided at aerodromes indicated in **Table MET II-2**.

¹ Refer to Table AOP II-1

Requirements for and use of communications

2.8 Operational meteorological information prepared as METAR, SPECI and TAF for aerodromes indicated in **Table MET II-2**, and SIGMET **and AIRMET [if applicable]** messages prepared for flight information regions or control areas indicated in **Table MET II-1**, should be disseminated to the international OPMET databanks designated for the **(NAME)** Region(s) (namely **NAME** of OPMET databank) and to the centre designated for the operation of the aeronautical fixed service satellite distribution system (SADIS) and the Internet-based service (Secure SADIS FTP) and/or WIFS in the **(NAME)** Region(s).

2.9 SIGMET messages should be disseminated to other meteorological offices in the **(NAME)** Region(s). **(in accordance with the regional OPMET bulletin exchange scheme) [if applicable]**

2.10 Special air-reports that do not warrant the issuance of a SIGMET should be disseminated to other meteorological offices in the **(NAME)** Region(s). **(in accordance with the regional OPMET bulletin exchange scheme) [if applicable]**

2.11 In the **(NAME)** Region(s), meteorological information for use by aircraft in flight should be supplied through VOLMET broadcasts.

2.12 In the **(NAME)** Region(s), the aerodromes for which METAR and SPECI are to be included in VOLMET broadcasts, the sequence in which they are to be transmitted and the broadcast time, is indicated in **Table MET II-3**.

3. SPECIFIC REGIONAL REQUIREMENTS

EXAMPLES

Meteorological observations and reports

3.1 *For the EUR Region, routine observations, issued as METAR, should be made throughout the 24 hours of each day at intervals of one half-hour.*

3.2 *In the (NAME) Region, aeronautical meteorological stations have been established on offshore structures or at other points of significance in support of helicopter operations to offshore structures, as indicated at Table MET II-X (Former MET 1C Offshore structures). [if applicable]*

3.4 *In the (NAME) Region, information on the sea-surface temperature and the state of the sea or the significant wave height from aeronautical meteorological stations established on offshore structures in support of helicopter operations should be included as supplementary information in METAR and SPECI as indicated in Table MET II-X (MET 1C Offshore structures). [if applicable]*

3.5 *In the (NAME) Region, information on the state of the runway should be included as supplementary information in METAR and SPECI as indicated in Table MET II-2 (Former MET 1A Aerodrome meteorological offices). [if applicable]*

3.6 *In the (NAME) Region, GAMET area forecasts and/or area forecasts for low-level flights in chart form prepared in support of the issuance of AIRMET information, and AIRMET information for low-level flights relevant to the whole route, should be supplied to operators and flight crew members and kept up to date. Section II of the GAMET area forecast should include information, in addition to the provisions in Annex 3, as contained at Appendix MET LLF to Part V (MET). [if applicable]*

AIRMET information

3.7 In the (NAME) Region, AIRMET information should be issued by a MWO for its areas of responsibility as indicated in Table MET II-1 (Former MET 1B Meteorological watch offices). [if applicable]

OPMET information

3.8 In the EUR Region, The details of the exchange scheme to be used the OPMET information is given in the EUR Region – EUR OPMET Data Management Handbook (EUR Doc 018). [if applicable]

Service for operators and flight crew members

3.9 In the (NAME) Region, meteorological information for pre-flight planning by operators of helicopters flying to offshore structures as indicated in Table MET II-X (Former MET 1C Offshore structures) should include data covering the layers from sea level to FL 100. Particular mention should be made of [the expected surface visibility, the amount, type (where available), base and tops of cloud below FL 100, the sea state and sea-surface temperature, the mean sea-level pressure and the occurrence or expected occurrence of turbulence and icing]. [if applicable]

3.10 In the APAC Region, scheduled VOLMET broadcasts should contain TAF and SIGMET.

3.11 In the APAC Region, METAR, SPECI and TAF should be available for uplink to aircraft in flight via D-VOLMET.

**TABLE MET II-1 - METEOROLOGICAL WATCH OFFICES
EXPLANATION OF THE TABLE**

Column

- 1 Name of the State where meteorological service is required
- 2 Name of the flight information region (FIR) or control area (CTA) where meteorological service is required
Note: The name is extracted from the ICAO Location Indicators (Doc 7910) updated quarterly. If a State wishes to change the name appearing in Doc 7910 and this table, ICAO should be notified officially.
- 3 ICAO location indicator of the FIR or CTA
- 4 Name of the meteorological watch office (MWO) responsible for the provision of meteorological service for the FIR or CTA
Note: The name is extracted from the ICAO Location Indicators (Doc 7910) updated quarterly. If a State wishes to change the name appearing in Doc 7910 and this table, ICAO should be notified officially.
- 5 ICAO location indicator of the responsible MWO
- 6 Requirement for SIGMET information (excluding for volcanic ash and for tropical cyclones) to be provided by the MWO for the FIR or CTA concerned, where:
Y – Yes, required
N – No, not required
- 7 Requirement for SIGMET information for volcanic ash to be provided by the MWO for the FIR or CTA concerned, where:
Y – Yes, required
N – No, not required
- 8 Requirement for SIGMET information for tropical cyclone to be provided by the MWO for the FIR or CTA concerned, where:
Y – Yes, required
N – No, not required
- 9 Requirement for AIRMET information to be provided by the MWO for the FIR or CTA concerned, where
Y – Yes, required
N – No, not required

State	FIR or CTA where meteorological service is required		Responsible meteorological watch office		Meteorological service to be provided			
	Name	ICAO Location Indicator	Name	ICAO Location Indicator	SIGMET (WS)	SIGMET (WV)	SIGMET (WC)	AIRMET (WA)
1	2	3	4	5	6	7	8	9
Albania	TIRANA FIR/ACC	LAAA	TIRANA	LATI	Y	Y		N
...

**TABLE MET II-2 - AERODROME METEOROLOGICAL OFFICES
EXPLANATION OF THE TABLE**

Column

- 1 Name of the State where meteorological service is required
- 2 Name of the AOP aerodrome where meteorological service is required
Note: The name is extracted from the ICAO Location Indicators (Doc 7910) updated quarterly. If a State wishes to change the name appearing in Doc 7910 and this table, ICAO should be notified officially.
- 3 ICAO location indicator of the AOP aerodrome
- 4 Designation of AOP aerodrome:
 - RG - international general aviation, regular use
 - RS - international scheduled air transport, regular use
 - RNS - international non-scheduled air transport, regular use
 - AS - international scheduled air transport, alternate use
 - ANS - international non-scheduled air transport, alternate use
- 5 Name of the aerodrome meteorological office responsible for the provision of meteorological service
Note: The name is extracted from the ICAO Location Indicators (Doc 7910) updated quarterly. If a State wishes to change the name appearing in Doc 7910 and this table, ICAO should be notified officially.
- 6 ICAO location indicator of the responsible aerodrome meteorological office
- 7 Requirement for METAR/SPECI from the aerodrome concerned, where:
 - Y – Yes, required
 - N – No, not required
- 8 Requirement for information on the state of the runway provided by the appropriate airport authority to be included as supplementary information in METAR/SPECI from the aerodrome concerned, where:
 - Y – Yes, required
 - N – No, not required
- 9 Requirement for trend forecast to be appended to METAR/SPECI from the aerodrome concerned, where
 - Y – Yes, required
 - N – No, not required
- 10 Requirement for TAF from the aerodrome concerned, where
 - C - Requirement for 9-hour validity aerodrome forecasts in TAF code (9H)
 - T - Requirement for 18/24-hour validity aerodrome forecasts in TAF code (18/24H)
 - X - Requirement for 30-hour validity aerodrome forecasts in TAF code (30H)
 - N – No, not required
- 11 Requirement for maximum and minimum temperature (expected to occur during the period of validity of the TAF) to be included in TAF from the aerodrome concerned, where:
 - Y – Yes, required
 - N – No, not required
- 12 Availability of METAR/SPECI and TAF from the aerodrome concerned, where:
 - F – Full availability : OPMET information as listed issued for the aerodrome all through the 24-hour period
 - P – Partial availability: OPMET information as listed not issued for the aerodrome for the entire 24-hour period

TABLE MET II-2 - AERODROME METEOROLOGICAL OFFICES

State	AOP aerodrome where meteorological service is to be provided			Responsible aerodrome meteorological office		Observations and forecasts to be provided					METAR/SPECI and TAF
	Name	ICAO Location Indicator	Use	Name	ICAO Location Indicator	METAR/SPECI	State of the runway	Trend forecast	TAF	Temperature Tx/Th	
1	2	3	4	5	6	7	8	9	10	11	12
Algeria	ADRAR/TOUAT-CHEIKH SIDI MOHAMED BELKEBIR	DAUA	RS	ADRAR/TOUAT-CHEIKH SIDI MOHAMED BELKEBIR	DAUA	Y	N	N	N	N	F
...

TABLE MET II-3 – VOLMET BROADCASTS [FORMER ATS 2]**EXPLANATION OF THE TABLE**

The transmitting station appears at the top of each block.

Names in lower case letters indicate aerodromes for which reports (routine or selected special) are required.

Names in upper-case letters indicate aerodromes for which forecasts are required.

Example:

Tokyo	Hong Kong	Auckland	
10–15 40–45	15–20 45–50	20–25	50–55
Tokyo (Narita) Tokyo (Haneda) Sapporo Nagoya (Chubu Centrair) Osaka (Kansai) Fukuoka Incheon	Hong Kong Naha Taibei Gaoxiong Manila Mactan Guangzhou	Auckland Christchurch Wellington Nadi Faleolo* Nouméa Rarotonga* Tahiti	Auckland Christchurch Wellington Nadi Faleolo* Nouméa Pago Pago* Tahiti
SIGMET	SIGMET	SIGMET	SIGMET
TOKYO (NARITA) OSAKA (KANSAI)	HONG KONG	NADI NOUMÉA	AUCKLAND CHRISTCHURCH

* No TREND available

**EXAMPLE FOR SPECIFIC REGIONAL REQUIREMENTS
TABLE MET II-EUR-1 -OFFSHORE STRUCTURES
EXPLANATION OF THE TABLE**

Column

- 1 Name of the State where meteorological service is required
- 2 Name of the offshore structure where meteorological service is required
Note: The name is extracted from the ICAO Location Indicators (Doc 7910) updated quarterly. If a State wishes to change the name appearing in Doc 7910 and this table, ICAO should be notified officially.
- 3 ICAO location indicator of the offshore structure
- 4 Latitude of the offshore structure (in the form Nnnnn or Snnnn)
- 5 Longitude of the offshore structure (in the form Ennnnn or Wnnnnn)
- 6 Name of the meteorological office responsible for the provision of meteorological service
Note: The name is extracted from the ICAO Location Indicators (Doc 7910) updated quarterly. If a State wishes to change the name appearing in Doc 7910 and this table, ICAO should be notified officially.
- 7 ICAO location indicator of the responsible meteorological office
- 8 Availability of information on the sea surface temperature as supplementary information in METAR/SPECI from the offshore structure concerned, where:
Y – Yes, available
N – No, not available
- 9 Availability of information on the state of the sea or significant wave height as supplementary information in METAR/SPECI from the offshore structure concerned, where:
Y – Yes, available
N – No, not available
- 10 Availability of forecasts from the offshore structure concerned, where:
Y – Yes, available
N – No, not available

EUR REGION ONLY

State	Offshore structure where meteorological service is to be provided				Responsible meteorological office		Availability of supplementary information in METAR/SPECI		Availability of forecasts
	Name	ICAO Location Indicator	Latitude	Longitude	Name	Location ICAO	Sea surface temperature	State of the sea or significant wave height	
1	2	3	4	5	6	7	8	9	10
Norway	EKOFISK	ENEK	N5632	E00312	Y	Y	Y
...

EXAMPLE FOR SPECIFIC REGIONAL REQUIREMENTS
Appendix MET LLF to Part V (MET) Volume II
EUR REGION ONLY

In the EUR Region, Section II of the GAMET area forecast should include the following information in addition to the provisions in Annex 3:

- a) Short description of general weather situation in addition to the description of pressure centres and fronts;
- b) Information about mean surface wind also for values less than 15 m/s (30kt);
- c) Upper wind and temperature in mountainous areas for altitude 15000ft, or higher if necessary;
Note – Upper wind and temperature information should have a horizontal resolution no more than 500km;
- d) Information about widespread surface visibility of 5000 m or more together with the weather phenomena (if any) causing a reduction of visibility and inserted between the upper wind and cloud information;
- e) State of the sea and sea surface temperature; and
Note – States under whose jurisdiction off-shore structures or other points of significance in support of off-shore helicopter operations are located should in consultation with the appropriate operators, establish or arrange for the information on the state of the sea and sea surface temperature to be included in all low-level area forecasts.
- f) An outlook concerning expected hazardous weather phenomena during the following validity period.

Note 1. – When the area forecast for low-level flights is issued as a GAMET, the following regional procedures should be followed:

- i. the term "widespread" should be used to indicate a spatial coverage of more than 75 per cent of the area concerned; and
- ii. the visibility and cloud base information in section II may be complemented in the form of visibility/cloud base categories.

Note 2. – Where combined cloud/visibility information is provided, this information should be in the form of visibility and cloud base categories and should be supplied for well-defined sub-areas and/or route segments. A series of sub-areas and/or route segments for which forecasts for low-level flights are provided in condensed form should be published in the AIP. For each sub-area and/or route segment, the reference height to which the cloud-base information refers, should be specified.

Note 3. – Where visibility/cloud-base categories are used in low-level forecasts these should be as follows:

- O* visibility equal to or more than 8 km and cloud-base equal to or higher than 600 m (2000 ft);
- D* visibility equal to or more than 5 km but less than 8 km with cloud-base 300 m (1000 ft) or higher, or cloud-base equal to 300 m (1000 ft) or higher but less than 600 m (2000 ft) with visibility equal to or more than 8 km;
- M* visibility equal to or more than 1.5 km but less than 5 km with cloud-base equal to or higher than 150 m (500 ft), or cloud-base equal to or higher than 150 m (500 ft) but less than 300 m (1000 ft) with visibility equal to or more than 5 km;
- X* visibility less than 1.5 km and/or cloud-base less than 150 m (500 ft). The visibility/cloud-base category indicated in the forecast for a sub-area should refer to the prevailing conditions in the sub-area concerned. Cloud information should refer to clouds with a coverage of BKN or OVC.

(NAME) ANP, VOLUME II

PART VI - SEARCH AND RESCUE (SAR)

1. INTRODUCTION

1.1 This part of the **(NAME)** ANP, Volume II, complements the provisions in ICAO SARPs and PANS related to search and rescue (SAR). It contains dynamic plan elements related to the assignment of responsibilities to States for the provision of SAR facilities and services within a specified area in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300); and mandatory requirements related to the SAR facilities and services to be implemented by States in accordance with regional air navigation agreements. Such agreement indicates a commitment on the part of the State(s) concerned to implement the requirement(s) specified.

2. GENERAL REGIONAL REQUIREMENTS

2.1 The Rescue Coordination Centres (RCCs) and Rescue Sub-Centres (RSCs) for the **(NAME)** Region(s) are listed in **Table SAR II-1** and depicted in **Chart SAR II-1**.

2.2 In cases where the minimum SAR facilities are temporarily unavailable, alternative suitable means should be made available.

2.3 In cases where a SAR alert is proximate to a search and rescue region (SRR) boundary (e.g. 50 NM or less), or it is unclear if the alert corresponds to a position entirely contained within an SRR, the adjacent RCC or RSC should be notified of the alert immediately.

3. SPECIFIC REGIONAL REQUIREMENTS

3.1 *The details of the facilities and/or services to be provided to fulfil the basic requirements of the plan could be found in this part. Such agreement indicates a commitment on the part of the State(s) concerned to implement the requirement(s) specified. [if required]*

TABLE SAR II-1 - SEARCH AND RESCUE FACILITIES IN THE (NAME) REGION(S)
EXPLANATION OF THE TABLE*Column*

- 1 State
- 2 Name of the Rescue Coordination Centre (RCC) and Rescue Sub-centre (RSC).
- 3 SAR points of contact (SPOC). Name of the SPOC.
- 4 Remarks. Supplementary information such as the type of RCC (e.g. maritime or aviation or joint).

State	Name of and RCC/RSC	SPOC	Remarks
1	2	3	4
AMSWELL	NIBORD RCC XXXXX RSC	Nibord RCC	

(NAME) ANP, VOLUME II

PART VII - AERONAUTICAL INFORMATION MANAGEMENT (AIM)

1. INTRODUCTION

1.1 This part of the **(NAME)** ANP, Volume II, complements the provisions in ICAO SARPs and PANS related to AIS/AIM and aeronautical charts (MAP). It contains dynamic plan elements related to the assignment of responsibilities to States for the provision of AIS/AIM facilities and services within a specified area in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300); and mandatory requirements related to the AIS/AIM facilities and services to be implemented by States in accordance with regional air navigation agreements. Such agreement indicates a commitment on the part of the State(s) concerned to implement the requirement(s) specified.

2. GENERAL REGIONAL REQUIREMENTS

2.1 The responsibility for the provision of AIS/AIM facilities and services in the **(NAME)** Region(s), is reflected in the **(NAME) Table AIM II-1**, which shows the list of designated international NOTAM Office (NOF), designated State for AIP production, designated State for aeronautical charts (MAP) production, designated State for the provision of the authoritative Integrated Aeronautical Information Database (IAID) and designated State for the provision of the pre-flight information services.

2.2 States should designate and implement an authoritative Integrated Aeronautical Information Database (IAID) where data sets are integrated and used to produce current and future AIS/AIM products and services, which is a fundamental step in the transition to AIM. The designation of authoritative databases should be clearly stated in the Aeronautical Information Package AIP.

2.3 The national plans for the transition from AIS to AIM identifying clearly the timelines for the implementation of the different elements of the ICAO Roadmap for the transition from AIS to AIM should be submitted by States to the ICAO **(NAME)** Regional Office(s). States should also inform the ICAO **(NAME)** Regional Office(s) of any update.

2.4 States should take necessary measures to ensure that aeronautical information and data they provide meet the regulatory Aeronautical Data quality requirements.

2.5 The Quality Management System (QMS) in AIS/AIM should define procedures to meet the safety and security objectives associated with the management of aeronautical data and information.

2.6 Recognizing the need to maintain or enhance existing safety levels of operations, States should ensure that any change to the existing systems or the introduction of new systems used for processing aeronautical data and/or information are preceded by a safety assessment.

2.7 Technical services responsible for origination of the raw aeronautical information should be acquainted with the requirements for promulgation and advance notification of changes that are operationally significant as established in Annexes 11 and 14 and other relevant ICAO documentation. They should take due account of the time needed by AIS/AIM for the preparation, production and issue of the relevant material, including the compliance with the AIRAC procedures.

2.8 AIS/AIM personnel should be involved in the air navigation planning processes. This should ensure the timely preparation of appropriate AIS documentation and that the effective dates for changes to

the air navigation system and procedures are satisfied.

2.9 States should produce relevant aeronautical charts required for civil air operations employing visual air navigation independently or in support of other forms of air navigation. The production responsibility for sheets of the World Aeronautical Chart (WAC) — ICAO 1: 1 000 000 or Aeronautical Chart — ICAO 1: 500 000 (*as an alternative to the World Aeronautical Chart — ICAO 1:1 000 000*) is set out in **Table AIM II-2**.

3. SPECIFIC REGIONAL REQUIREMENTS

3.1 *TBD (e.g. EAD for Europe, AIS/AIM Certification for EUR and MID, etc.)*

TABLE AIM II-1 - RESPONSIBILITY FOR THE PROVISION OF AIS/AIM FACILITIES AND SERVICES

EXPLANATION OF THE TABLE

Column:

- 1 Name of the State or territory
- 2 Designated international NOTAM Office (NOF)
- 3 Designated State for AIP production
- 4 Designated State for aeronautical charts (MAP) production
- 5 Designated State for the provision of the authoritative Integrated Aeronautical Information Database (IAID)
- 6 Designated State for the provision of pre-flight information services
- 7 Remarks — additional information, as appropriate.

State	NOF	AIP	MAP	IAID	Pre-flight briefing	Remarks
1	2	3	4	5	6	7

**TABLE AIM II-2 - PRODUCTION RESPONSIBILITY FOR SHEETS OF THE WORLD
AERONAUTICAL CHART - ICAO 1:1 000 000 OR AERONAUTICAL CHART — ICAO 1: 500 000**

EXPLANATION OF THE TABLE

Column:

- 1 Name of the State accepting production responsibility.
- 2 World Aeronautical Chart — ICAO 1:1 000 000/Aeronautical Chart — 1: 500 000 sheet number(s) for which production responsibility is accepted.
- 3 Remarks.

Note — In those instances where the production responsibility for certain sheets has been accepted by more than one State, these States by mutual agreement should define limits of responsibility for those sheets. This should be reflected in the Remarks column

State	Sheet number(s)	Remarks
1	2	3
