



**Cuestión 7 del  
Orden del Día:**

**Revisión de los planes nacionales MET y de la parte MET del e-ANP  
CAR/SAM**

**Revisión de e-ANP CAR/SAM, Parte V-MET del Vol. I, Vol. II**

(Presentada por la Secretaría)

<b>RESUMEN</b>	
Esta nota de estudio presenta los requisitos de datos OPMET incluidos en el e-ANP	
<b>Referencias:</b>	
<ul style="list-style-type: none"><li>• Doc 8733, e-ANP CAR/SAM</li></ul>	
<b>Objetivos estratégicos de la OACI:</b>	<i>A - Seguridad operacional B - Capacidad y eficiencia de la navegación aérea E - Protección del medio ambiente</i>

**1. Introducción**

1.1 El e-ANP CAR/SAM Vol. I constituye los requisitos regionales acordados considerados como los mínimos necesarios para la planificación e implementación efectivas de las instalaciones y servicios de meteorología aeronáutica (MET) en las regiones del Caribe y Sudamérica, y complementa las disposiciones de los SARP y PANS de la OACI relacionados con el MET.

1.2 El e-ANP CAR/SAM, en el Vol. II, Parte VI ha establecido, a través de las Tablas MET II-1 y MET II-2, las oficinas de Vigilancia Meteorológica y las Oficinas de Meteorología Aeronáutica. Asimismo, la Tabla AOP I-1 presenta la lista de los aeropuertos internacionales de las Regiones CAR/SAM.

1.3 La Guía OPMET para las Regiones CAR/SAM tiene como objetivo principal proveer lineamientos para la estandarización y armonización de los procedimientos relacionados con la elaboración y transmisión de la información meteorológica para las operaciones aéreas (OPMET) en los Estados de las Regiones CAR/SAM.

**2. Discusión**

2.1 La Reunión recordará que la Duodécima Conferencia de Navegación Aérea (AN-Conf/12) formuló la Recomendación 6/1 - *Marco de actuación regional – Metodologías y herramientas de planificación relacionadas con el alineamiento de los ANP regionales con la cuarta edición del Plan Mundial de Navegación Aérea (GANP) (Doc 9750)*. En seguimiento a esta recomendación, la OACI

estableció un grupo de trabajo (e-ANP WG), compuesto por representantes de las Oficinas Regionales y la Sede de la OACI, para elaborar propuestas de cambios a los ANP regionales, incluyendo el desarrollo de una nueva estructura, formato y contenido del ANP.

2.2 El 18 de junio de 2014, el Consejo de la OACI decidió que los planes regionales de navegación aérea (ANP) deberían publicarse en tres volúmenes.

2.3 El nuevo formato aprobado por el Consejo de la OACI indicaba que el mismo debería estar disponible en formato electrónico y constar de tres volúmenes, los cuales son descritos a continuación:

- el Volumen I que debe contener los elementos estables del plan, cuya enmienda requiere la aprobación del Consejo;
- el Volumen II que debe contener los elementos dinámicos del plan, cuya enmienda no requiere la aprobación del Consejo (la aprobación es por acuerdo regional de los PIRGs pertinentes);
- el Volumen III que debe contener los elementos dinámicos/flexibles del plan, brindando orientación para la planificación de la implantación de los sistemas de navegación aérea y su modernización, tomando en cuenta los programas emergentes, como el ASBU, y las hojas de ruta de las tecnologías asociadas descritas en el GANP.

2.4 El nuevo formato del e-ANP fue sometido a consideración de las Regiones CAR/SAM. El GREPECAS/17 aprobó en general los nuevos formatos, siendo el Vol. I aprobado por el Consejo de la OACI en abril del 2016, y el Vol. II aprobado en el mismo año. El Vol. III quedó postergado a su implementación por decisión del CRPP/4-3 hasta la aprobación del GANP-Sexta Edición. Asimismo, es importante destacar que, con la aprobación de los Volúmenes I y II del e-ANP que reemplazan el Doc. 8733, se deberá revisar y actualizar el campo de referencias en las deficiencias de Navegación Aérea.

2.5 La Reunión pudiera revisar los Vol. I y II, Parte MET, del e-ANP CAR/SAM, que se encuentran como **Apéndices A y B**, respectivamente, a esta nota de estudio, y actualizarlos, de ser necesario.

### 3. **Acción requerida**

3.1. Se invita a la Reunión a:

- a) tomar nota de la información suministrada en esta nota de estudio;
- b) revisar y actualizar, según corresponda, los Apéndices A, y B; y
- c) considerar otras acciones que crean convenientes;

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**SAM/MP/3-NE/WP/11**

**APÉNDICE / APPENDIX A**

**CAR/SAM ANP, VOLUME I  
PART V – METEOROLOGY (MET)**

# **CAR/SAM AIR NAVIGATION PLAN**

## **VOLUME I**

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## CAR/SAM ANP, VOLUME I

### PART 0 – INTRODUCTION

#### 1. GENERAL

1.1 On **18 June 2014**, the ICAO Council decided that the regional air navigation plans (ANPs) should be published in three volumes.

1.2 ANP Volume I contains stable plan elements whose amendment necessitates approval by the Council such as the assignment of responsibilities to States for the provision of aerodrome and air navigation facilities and services in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300); and the current to medium term mandatory regional requirements related to aerodrome and air navigation facilities and services to be implemented by States in accordance with regional air navigation agreements and requirements specific to the region which are not covered in the ICAO Standards and Recommended Practices (SARPs) and Procedures for Air Navigation Services (PANS). The material to be included in Volume I should minimise the requirement for frequent amendment. The following is a non-exhaustive list of such elements:

- Flight Information Regions (FIR) boundaries (Table and Charts);
- Search and Rescue Regions (SRR) boundaries (Table and Charts);
- Volcanic Ash Advisory Centres (VAAC);
- Tropical Cyclone Advisory Centres (TCAC); and
- Volcano Observatories (VO).

1.3 ANP Volume II contains dynamic plan elements material related to the assignment of responsibilities to States for the provision of aerodrome and air navigation facilities and services and the current to medium term mandatory regional requirements related to aerodrome and air navigation facilities and services to be implemented by States in accordance with regional air navigation agreements involving the relevant PIRG. The amendment of these elements does not require approval by the Council. The following is a non-exhaustive list of such elements:

- Major traffic flows;
- ATS route network;
- Meteorological Watch Offices (MWO);
- Secondary Surveillance Radar (SSR) codes;
- Five-letter name-codes; and
- VOLMET Broadcasts.

1.4 ANP Volume III contains dynamic/flexible plan elements providing implementation planning guidance for air navigation systems and their modernization taking into consideration emerging programmes such as the ICAO Aviation System Block Upgrades (ASBUs) and associated technology roadmaps described in the *Global Air Navigation Plan (GANP)* (Doc 9750). The ANP Volume III would also include appropriate additional guidance, particularly with regard to implementation, to complement the material contained in the ANP Volumes I and II. The amendment of Volume III would not require approval by the Council (approval of Part II is under the responsibility of the relevant PIRG).

*Note 1: The ANP does not list all facilities in the region(s) but only those required for international civil aviation operations. Documents from the Integrated Aeronautical Information Package and other States publications should be consulted for information on additional facilities and for operational information in general.*

*Note 2: The general structure of the regional plans for the parts which concern an air navigation field in Volumes I and II consists of an “Introduction”, “General Regional Requirements” and “Specific Regional Requirements”. Only Tables shown under “General Regional Requirements” are harmonized for all Regions. Should a Region require a Table for a specific field, this should be reflected under “Specific Regional Requirements” of the subject concerned. The naming convention for such tables consists*

of the technical field concerned (AOP, CNS, ATM, MET, SAR and AIM), the ANP Volume number (I or II), the Region (APAC, AFI, CAR/SAM, EUR, MID, NAM and NAT) and the consecutive number of the table. Examples are as follows: Table ATM I-EUR-1, Table CNS II-MID-1 or Table MET I-AFI-2.

1.5 Guidance material on the detail of programmes or concepts should be contained in supplementary material referenced appropriately or adopted as CAR/SAM Documents.

## **2. RELATIONSHIP BETWEEN THE GLOBAL AND REGIONAL AIR NAVIGATION PLANS**

2.1 The ANPs represent the bridge between, on one side, the global provisions in the ICAO SARPs and the GANP, and on the other side, the States' air navigation plans and implementation status.

2.2 The GANP represents a rolling, 15-year strategic methodology which leverages existing technologies and anticipates future developments based on State/industry-agreed operational objectives. The GANP is an overarching framework that includes key aviation policy principles to assist ICAO Regions, sub-regions and States with the preparation of their regional and State air navigation plans and to support the establishment of air navigation priorities.

## **3. OBJECTIVE AND PURPOSE OF REGIONAL AIR NAVIGATION PLANS**

3.1 The ANPs provide for the planning and implementation of air navigation systems within a specified area, in accordance with the agreed global and regional planning framework. They are developed to meet those needs of specific areas not covered in the worldwide provisions. The development and maintenance of the ANPs is undertaken by ICAO PIRGs with the assistance of the ICAO Secretariat.

3.2 The ANPs are used as a repository Document for the assignment of responsibilities to States for the provision of air navigation facilities and services within a specified area in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300).

3.3 The ANPs contain requirements related to the facilities and services to be implemented by States in accordance with regional air navigation agreements. The procedural parts of ANPs are published in the *ICAO Regional Supplementary Procedures* (SUPPs) (Doc 7030).

3.4 The ANPs contain provisions that States can follow in the planning of aerodrome and air navigation facilities and services activities, with the assurance that facilities and services furnished in accordance with the plan will form with those of other States an integrated system adequate for the foreseeable future.

3.5 The ANPs may serve as a legal basis for air navigation services charges which are levied for services provided or made available to users, in accordance with ICAO's *Policies on Charges for Airports and Air Navigation Services* (Doc 9082) and *ICAO Manual on Air Navigation Services Economics* (Doc 9161).

3.6 The ANPs support the performance-based approach to planning adopted by ICAO to measure the efforts made by States in implementing the agreed requirements.

## **4. MANAGEMENT AND AMENDMENT OF REGIONAL AIR NAVIGATION PLANS**

4.1 The elements of the existing planning system and the planning principles, operational requirements and planning criteria as developed for the Caribbean and South American Regions are kept under constant review by the GREPECAS in accordance with its schedule of meetings, in consultation with provider and user States and with the assistance of the ICAO Regional Offices concerned.

4.2 The detailed amendment procedure of the three ANP Volumes is described in paragraph 5 below.

**5. PROCEDURE FOR THE AMENDMENT OF REGIONAL AIR NAVIGATION PLANS**

5.1 The procedure for the amendment of regional air navigation plans in three Volumes as approved by the Council is shown in [Appendix A](#).

**6. ABBREVIATIONS**

6.1 The abbreviations used in this document are contained in the *Procedures for Air Navigation Services — ICAO Abbreviations and Codes (PANS-ABC)* (Doc 8400), with the exception of those used in the explanations of any tables appearing herein, which also give their meaning.

**7. ESTABLISHMENT AND PROVISION OF A MULTINATIONAL ICAO AIR NAVIGATION FACILITY/SERVICE**

7.1 The operation of multinational air navigation services is well established within the Caribbean and South American Regions. The *ICAO Manual on Air Navigation Services Economics* (Doc 9161) details the ICAO policies on charges for air navigation services and provides additional information on the various models adopted globally. The introduction of multinational air navigation services does not dilute the principle that a State has the responsibility of overseeing the provision of air navigation services and that it shall maintain that responsibility within its sovereign airspace as well as within the airspace over the high seas for which it has accepted the responsibility for the provision of services. Where there is no intention to change or modify the FIR boundaries nor the facilities and services currently listed in the ANP there is not a requirement to amend the ANP. However, should changes to the FIR boundaries or to the facilities and services provided be required, such changes are likely to be subject to the ANP amendment procedure and should therefore be examined on a case-by-case basis. Advice on this issue can be obtained from the ICAO Regional Office(s). Any multinational arrangements for the provision of air navigation services should be registered with ICAO (Article 83 of the Convention (Doc 7300) and *Rules for Registration with ICAO of Aeronautical Agreements and Arrangements* (Doc 6685)).

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## **APPENDIX A - PROCEDURE FOR THE AMENDMENT OF REGIONAL AIR NAVIGATION PLANS**

*(Approved by Council on 18 June 2014)*

### **1. Introduction**

1.1. The procedure outlined below has been evolved to provide a means of maintaining the regional air navigation plans using an ANP web based platform.

### **2. General criteria**

2.1. The Assembly has resolved that regional plans should be revised when it becomes apparent that they are no longer consistent with current and foreseen requirements of international civil aviation and that, when the nature of a required change permits, the associated amendment of the regional plan should be undertaken by correspondence between the Organization and the States and international organizations concerned.

2.2. When a State cannot immediately implement a particular part or a specific detail of a regional plan although it intends to do so, when practicable, this in itself should not lead to the State proposing an amendment to the plan.

2.3. The general structure of the regional plans for the parts which concern an air navigation field in Volumes I and II consists of an "Introduction", "General Regional Requirements" and "Specific Regional Requirements". As the section "General Regional Requirements" is harmonized for all regions, an amendment of the provisions (text) in "General Regional Requirements" will lead to amendment of Volumes I and II of the regional plans of all regions.

2.4. The amendment process of Volume III is under the responsibility of the relevant Planning and Implementation Regional Group (PIRG). The Parts 0 (Introduction) and I (General Planning Aspects) of Volume III are harmonized for all regions and the amendment of these parts should be made following inter-regional coordination.

### **3. User rights**

3.1. Access to the ANP web based platform to develop and submit amendment proposals to the regional plan and to comment on an officially issued amendment proposal should be provided through controlled access by the State's or international organization's designated Focal Points. The State or international organization should officially inform their respective Regional Office of the registration of their designated Focal Points.

### **4. States and international organizations to be consulted**

4.1. The Secretary General, through the relevant Regional Office, will determine the States and international organizations to be consulted on the amendment proposal. These will generally only include the provider and user States and international organizations that have a direct and obvious interest in the amendment in question.

**PART A — AIR NAVIGATION PLANS, VOLUME I**

**5. Procedure for amendment of Volume I**

5.1. If, in the light of the above general criteria, any State (or group of States) of a region wishes to effect a change in the approved air navigation plan for that region, it should propose to the Secretary General, through the Regional Office accredited to that State, an appropriate amendment to the plan, adequately documented; the proposal should include the facts that lead the State (or group of States) to the conclusion that the amendment is necessary. Such amendments may include additions, modifications or deletions. (This procedure does not preclude a State having previous consultation with other States before submitting an amendment proposal to the Regional Office.) This proposed amendment should be submitted via the web based tool and/or by correspondence to the Regional Office.

5.2. Upon studying the proposal, if the Secretary General considers that the proposed amendment requires further coordination through the relevant Planning and Implementation Regional Group (PIRG), the proposal will be presented, adequately documented, to the PIRG. The views of the PIRG will be coordinated with the originating State and the proposed amendment will be uploaded via the ANP web based platform for processing proposals for amendment for approval by the Council.

5.3. If the proposal concerns an amendment of the provisions (text) in “General Regional Requirements”, the Secretary General will coordinate and circulate, through all Regional Offices, an amendment of all the regional plans.

5.4. If 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 presented, adequately documented, to the Commission. In such cases, the Commission will decide the action to be taken on the proposal.

5.5. The Secretary General, through the Regional Office, 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 which may be invited to attend suitable ICAO meetings and which may be concerned with the proposal. The States and international organizations concerned should either send their comments/agreement/objection via the ANP web based platform and/or by correspondence to the Regional Office. Any comment or objection should be adequately supported by reasons for the comment or objection.

5.6. If, in reply to the Secretary General's inquiry, no objection is raised to the proposal by a specified date, the proposal should be submitted to the President of the Council, who is authorized to approve the amendment on behalf of the Council. The approved amendment should be incorporated into Volume I of the regional plan.

5.7. If, in reply to the Secretary General's inquiry, any objection is raised, and if objection remains after further consultation, the matter will be documented for discussion by the respective planning and implementation regional group (PIRG) and, ultimately for formal consideration by the Air Navigation Commission, if it remains unresolved. If the Commission concludes that the amendment is acceptable in its original or other form, it will present appropriate recommendations to the Council.

5.8. Proposals for the amendment of Volume I of the regional plan 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 regional plan is managed, 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, the Secretary General will ascertain whether it has adequate support from the State or States whose facilities 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 on the proposal.

5.9. Proposals for the amendment of Volume I of the regional plan may also be initiated by the Secretary General, through the Regional Office accredited to that State, provided that the State or States whose facilities will be affected have expressed their concurrence with the proposal.

5.10. Amendments to Volume I of the regional plan which have been approved in accordance with the above procedure will be published in the ANP web based platform at convenient intervals.

## **PART B — AIR NAVIGATION PLANS, VOLUME II**

### **6. Procedure for amendment of Volume II**

6.1. Amendments of Volume II of the regional plan should be effected on the basis of an adequately documented proposal submitted by a State (or a group of States) or the relevant PIRG to the Secretary General, through the Regional Office accredited to that State. The proposal should include the facts that lead to the conclusion that the amendment is necessary. Such amendments may include additions, modifications or deletions to Volume II of the regional plan. (This procedure does not preclude a State having previous consultation with other States before submitting an amendment proposal to the Regional Office.) This proposed amendment should be submitted via the ANP web based platform and/or by correspondence to the Regional Office.

6.2. If the proposal concerns an amendment of the provisions (text) in “General Regional Requirements”, the Secretary General will coordinate and circulate, through all Regional Offices, an amendment of all the regional plans.

6.3. The ICAO Regional Office 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 which may be invited to attend suitable ICAO meetings and which may be concerned with the proposal. The States and international organizations concerned should either send their comments/agreement/objection via the ANP web based platform and/or by correspondence to the Regional Office. Any comment or objection should be adequately supported by reasons for the comment or objection.

6.4. If, in reply to the ICAO Regional Office’s inquiry, no objection is raised to the proposal by a specified date, it will be deemed that a regional agreement (involving the relevant PIRG) on the subject has been reached and the proposed amendment should be incorporated into Volume II of the regional plan.

6.5. If, in reply to the ICAO Regional Office’s inquiry, any objection is raised, and if objection remains after further consultation, the matter will be documented for discussion by the respective planning and implementation regional group (PIRG) and, ultimately for formal consideration by the Air Navigation Commission, if it remains unresolved. If the Commission concludes that the amendment is acceptable in its original or other form, it will present appropriate recommendations to the Council.

6.6. Proposals for the amendment of Volume II of the regional plan submitted by international organizations directly concerned with the operation of aircraft, which may be invited to attend suitable ICAO meetings, where the relevant regional plan is managed, 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, the Secretary General will ascertain whether the proposal has adequate support from the State or States whose facilities or services will be affected. If such support is not forthcoming, the proposal will not be pursued.

6.7. Proposals for the amendment of Volume II of the regional plan may also be initiated by the Secretary General, through the Regional Office accredited to that State, provided that the State or States whose facilities or services will be affected have expressed their concurrence with the proposal.

6.8. Amendments to Volume II of the regional plan which have been approved in accordance with the above procedure will be published in the ANP web based platform at convenient intervals.

## **PART C — AIR NAVIGATION PLANS, VOLUME III**

### **7. Procedure for amendment of Volume III**

7.1. Amendments of Volume III of the regional plan are under the responsibility of the relevant Planning and Implementation Regional Group (PIRG) and not subject to a formal application of the procedure for amendment of the ANP described in Parts A and B above. However, the amendment of the provisions of Part 0 - “Introduction” and Part I - “General Planning Aspects” needs special coordination, as specified in 7.4 below. Since these two Parts are harmonized for all regions, an amendment of the provisions contained therein will lead to amendment of Parts 0 and I of Volume III of the regional plans of all regions.

7.2. Amendments of Volume III of the regional plan should be effected on the basis of an adequately documented proposal submitted to the ICAO Regional Office concerned by:

- a State (or a group of States); or
- the relevant Planning and Implementation Regional Group (PIRG) of the region(s); or
- the ICAO Secretariat; or
- international organisations directly concerned with the operation of aircraft, which may be invited to attend suitable ICAO meetings and/or which attended the meeting(s) where the relevant Volume III amendments were agreed.

7.3. This procedure does not preclude a State (or group of States) having previous consultation with other States before submitting an amendment proposal to the Regional Office. Such amendments may include additions, modifications or deletions to Volume III of the regional plan. In addition, the facts that led to the conclusion that the amendment should be included.

7.4. If the proposal concerns an amendment of the provisions in Part 0 - “Introduction” or Part I - “General Planning Aspects”, the ICAO Regional Office concerned will submit the proposal to ICAO Headquarters (Air Navigation Bureau) for coordination with all ICAO Regional Offices. The views of the ICAO Regional Offices will be taken into consideration in the consolidation/approval of the amendment by the ANB. The approved amendment will be published in Volume III of all regional plans at convenient intervals.

7.5. The mechanism for the amendment of Part II of Volume III of the regional plan should be developed, agreed by the relevant PIRG and reflected in the corresponding PIRG Handbook.

## CAR/SAM ANP, VOLUME I

### PART I – GENERAL PLANNING ASPECTS (GEN)

#### 1. GEOGRAPHICAL SCOPE

1.1 The CAR/SAM ANP is related to the ICAO Caribbean and South American air navigation regions. The ANP may call for the provision of basic facilities and services beyond the charted boundaries of a region where such facilities and services are necessary to meet the requirements of international air navigation within that region.

1.2 A number of States within the ICAO Caribbean and South American Regions are members of one or more sub-regional groupings which have development plans to improve air navigation services; such plans contribute to the regional implementation of the ICAO *Global Air Navigation Plan* (GANP) (Doc 9750). Regional subgroups include:

- *The North America, Central American and Caribbean Working Group (NACC/WG) for the NAM/CAR Regions*
- *The Air Navigation Implementation Working Group (ANI/WG) for the NAM/CAR Regions*
- *The Eastern Caribbean Civil Aviation Technical Group (E/CAR/CATG)*
- *The Technical Management Group of the Central Caribbean Regional Telecommunication Network, “Mejoras a las Comunicaciones ATS” (MEVA TMG)*
- *The Network Technical Group of the Eastern Caribbean AFS Regional Telecommunication Network (E/CAR/NTG)*
- *The South American Implementation Working Group (SAM/IG)*
- *The Technical, Operational and Management of the Regional Digital Network (REDDIG)*
- *The South Atlantic Implementation Group for the improvement of Air Traffic Services in the South Atlantic(SAT)*

#### 2. FLIGHT INFORMATION REGIONS

2.1 [Table GEN I-1](#) shows the current Flight Information Regions (FIR)/Upper Information Regions (UIR) which are part of the ICAO Caribbean and South American Regions. More details of the FIRs and UIRs within the Caribbean and South American air navigation regions are contained in [Table ATM I-1](#) and [Charts ATM I-1](#) and [ATM I-2](#).

#### 3. STATES' RESPONSIBILITIES

3.1 Each Contracting State is responsible for the provision of facilities and services in its territory under Article 28 of the Convention as well as within the airspace over the high seas for which it has accepted the responsibility for the provision of services. The Council has recommended that these facilities and services include those specified in the ANPs.

3.2 The inclusion of the basic facilities and services provided by non-Contracting States and territories in regional ANPs is simply recognition that they are needed by or likely to affect international civil aircraft operations of Contracting States or the facilities and services of these States.

*Note.* — *Non-Contracting State in the CAR region:* Dominica

#### 4. CAR/SAM REGIONAL PLANNING

4.1 The regional planning and implementation process is the principal engine of ICAO's planning framework. It is here that the top-down approach comprising global guidance and regional harmonization measures converges with the bottom-up approach constituted by national planning by States.

## 4.2 PERFORMANCE BASED APPROACH

### 4.2.1 Global Approach

4.2.1.1 In an effort to assist planners in weighing outcomes and making appropriate decisions, the *Manual on Global Performance of the Air Navigation System* (Doc 9883) has been developed. In this respect ICAO has defined 11 Key Performance Areas (KPA), one for each of the *Global ATM Operational Concept* (Doc 9854) expectations outlined below.

4.2.1.2 These general expectations are relative to the effective operation of the ATM system. The ICAO planning objective is to achieve a performance based global air traffic management (ATM) system through the implementation of air navigation systems and procedures in a safe, progressive, cost-effective and cooperative manner.

## 5. RELATIONSHIP BETWEEN GLOBAL, REGIONAL AND NATIONAL PLANNING

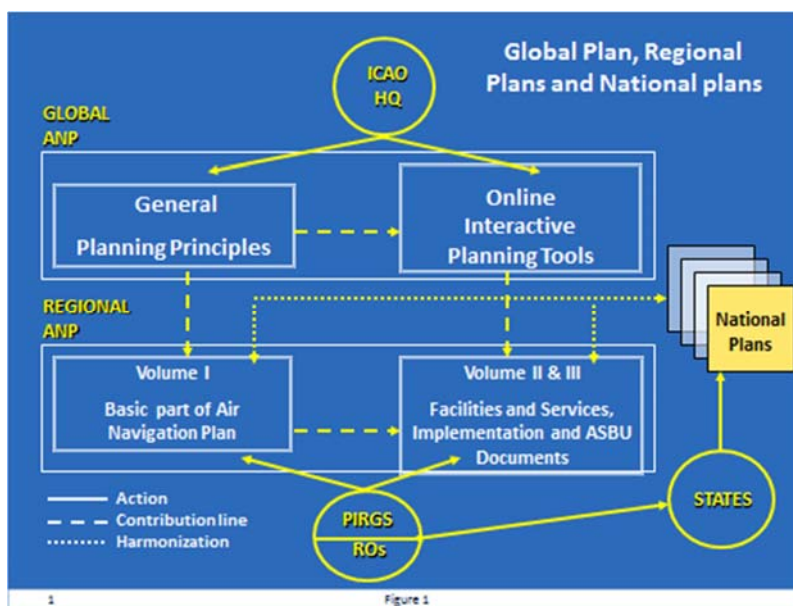


Figure 1. Relationship between global, regional and national plans.

5.1 Planning takes place at global, regional and national levels. Planning is accomplished with the help of planning tools and methodologies that are used primarily at the regional and national levels, conditioned by guidance from the global level. The basis for effective planning is the GANP (Doc 9750), which should guide the development of regional and national implementation plans that will support system architectures.

## 6. HUMAN RESOURCE PLANNING

6.1 Human resource planning can be considered “*the systematic and continuing process of analysing an organisation’s human resource needs under changing conditions and developing personnel policies appropriate to the longer-term effectiveness of the organisation. It is an integral part of corporate planning and budgeting procedures since human resource costs and forecasts both affect and are affected by longer-term corporate plans.*”<sup>1</sup>

6.2 Estimating current and future requirements for civil aviation personnel and training capacity is essential for human resource planning, institutional capacity building, and related funding and policy measures. Such planning will need to take into account the interdependencies for supply and demand of qualified personnel at national, regional and global levels.

<sup>1</sup> Defined by the UK Institute of Personnel and Development

### 6.3 Human Performance

6.3.1 The high level of automation and interdependencies across aviation disciplines will only increase with evolving air navigation systems. To maximise potential safety and efficiency benefits that these offer, the development of human-driven, rather than engineering-driven interfaces is required, making it easier for the human operator to make sound decisions and take correct actions. Similarly, as part of a safety management systems approach, procedures need to be identified for the use of current and new technologies that take into account human capabilities and manage the risk associated with human limitations.

6.3.2 States should:

- a) Identify a certification process that requires at the design stage:
  - i) recognition of the potential human performance issues that the proposed new technology attempts to address; and
  - ii) consideration of the potential human performance issues, including changes in roles and the effects on individual and team behaviours, that may be introduced by the proposed new technology.
- b) Identify processes for the implementation of new technologies, systems and procedures that describes the means by which human performance considerations can be addressed within operational contexts.
- c) Consider the management of human performance-related risks as a necessary and essential aspect of the oversight of safety management systems.
- d) Ensure that their technical personnel have exposure to training in human factors.

### 6.4 Training

6.4.1 A major goal of CNS/ATM systems is to create a seamless air navigation system. A seamless air navigation environment will require adequately qualified personnel prepared to perform their jobs in an evolving environment. At the same time, shortcomings in human resource planning and training are frequently mentioned as one of the reasons for the lack of implementation of regional ANPs. Human resource development challenges will be compounded during the transition period to CNS/ATM systems. As the existing and emerging air navigation technologies will co-exist in parallel for a period of time, civil aviation personnel will need to learn new skills, whilst retaining those needed to operate and maintain existing systems. To meet this challenge, a cooperative approach should be used in civil aviation training within the region. This approach should:

- a) ensure that the training needs for the region are identified, documented and kept up to date;
- b) facilitate the access to specialized types of training needed within the region or sub-regions that individual States cannot justify based on their national training needs alone;
- c) ensure that a balanced market exists to support the development and on-going implementation of high-quality training in one or more training centres within the region or sub-regions;
- d) endeavour to distribute equitably regional training activities among the training centres established within the region or sub-regions.
- e) take advantage of readily available training materials including those available through the TRAINAIR Plus sharing system.

6.4.2 Appropriate bodies should be established to facilitate regional and sub-regional training planning. A quantitative approach should be used to determine the training capabilities needed within a region or sub-region. Decisions concerning required training capabilities should be based on an aggregate of training needs for existing air navigation technologies, as well as emerging technologies. A State consultation process should be used to formulate a plan for the establishment of specific regional training centres.

#### 6.5 Training of technical personnel

6.5.1 States should develop and implement comprehensive training programmes and periodic training plans for all technical staff, including initial, on-the-job, recurrent and specialized training.

### 7. SAFETY CONSIDERATIONS

7.1 Safety fundamentally contributes to the sustainable growth of a sound and economically viable civil aviation system that continues to foster economic prosperity and social development. With air traffic projected to double in the next 15 years, safety risks must be addressed proactively to ensure that this significant capacity expansion is carefully managed and supported through strategic regulatory and infrastructure developments. It is imperative therefore that States and regions remain focused on their safety priorities as they continue to encourage expansion of their air transport sectors.

7.2 Acceptable safety levels are related to the establishment of State safety programmes (SSPs) that are able to anticipate and effectively respond to safety-related occurrences, resulting in continual improvements to an already low global accident rate. The *Global Aviation Safety Plan* (GASP) specifically establishes targeted safety objectives and initiatives that support SSP implementation while ensuring the efficient and effective coordination of complementary safety activities between all stakeholders.

7.3 PIRGs should harmonize activities undertaken to address aviation safety issues on a regional basis with the Regional Aviation Safety Groups (RASGs). In addition, PIRGs should coordinate relevant safety matters with RASGs to ensure consistency and avoid overlap.

7.4 PIRGs should ensure that air navigation services development programmes are consistent with the GASP safety objectives and initiatives. States are responsible for the prompt elimination of their air navigation deficiencies. Detailed information on the process of identifying and managing air navigation deficiencies is contained in the [GREPECAS Handbook](#).

7.5 Adherence to the ICAO SARPs will significantly contribute to aviation safety. States should therefore ensure that they have the necessary regulatory framework in place to reinforce the adoption of the ICAO SARPs within their national regulations. States should also ensure that any differences to the ICAO SARPs have been assessed in respect of safety and are notified in accordance with ICAO requirements.

#### 7.6 Unsatisfactory Conditions Reporting

7.6.1 States should act on any serious problems encountered due to the lack of implementation or prolonged unavailability of air navigation facilities or services required by the ANPs as reported by users of air navigation facilities and services.

### 8. ENVIRONMENT CONSIDERATIONS

8.1 It is an ICAO Strategic Objective to minimize the adverse effects of global civil aviation on the environment. PIRGs should ensure that environmental factors are taken into consideration when performance based systems implementation plans are developed and may wish to coordinate their plans with the State Action Plans on CO<sub>2</sub> Emissions Reduction. The results of environmental analysis can be useful in providing national decision-makers within the various sub-regions with information upon which to base airspace architecture decisions and in providing information on what the aviation industry is doing now to protect the environment in the future. Tools such as the ICAO Fuel Savings Estimation Tool (IFSET) are available from the ICAO public website to help quantify the environmental benefits from operational improvements. Environmental considerations should, however, not compromise acceptable levels of safety and be balanced against operational and economic considerations.

**9. AIR TRAFFIC FORECASTS**

9.1 Regional traffic forecasting supports the regional air navigation system planning. All States generally prepare individual forecasts, taking account of the regional information, for national planning purposes. A uniform strategy has been adopted by ICAO for the purpose of preparing traffic forecasts and other planning parameters in support of the regional planning process. This information should be shared through at least the sub-regional groupings to enable effective regional planning development.

**10. CONTINGENCY PLANNING**

10.1 Contingency plans may constitute a temporary deviation from the approved ANPs; such deviations are approved, as necessary, by the President of the ICAO Council on behalf of the Council.

10.2 The effects of disruption of services in particular portions of airspace are likely to affect significantly the services in adjacent airspace. States should co-ordinate with neighbouring States in the development and implementation of contingency plans, which in some cases may be developed on a sub-regional basis.

10.3 ICAO will initiate and coordinate appropriate contingency action in the event of disruption of air traffic services and related supporting services affecting international civil aviation operations provided by a State in the event that the authorities cannot adequately discharge their responsibility for the provision of such services to ensure the safety of international civil aviation operations. In such circumstances, ICAO will work in coordination with States responsible for airspace adjacent to that affected by the disruption and in close consultation with international organizations concerned.

10.4 Regional contingency plans will be developed, approved and maintained by GREPECAS with the support of ICAO and other organizations.

10.5 States should prepare their contingency plans in advance and ensure their availability or accessibility to the ICAO Regional Office. The plans should be reviewed at regular intervals and updated as required.

**TABLE GEN I-1 – LIST OF FLIGHT INFORMATION REGIONS (FIR)/UPPER INFORMATION REGIONS (UIR) OF THE ICAO CAR/SAM REGIONS**

EXPLANATION OF TABLE

Column		
1	State	Name of State
2	FIR/UIR	Name of FIR/UIR

STATE	FIR/UIR
1	2
France – French Antilles (St Barthelemy)	San Juan FIR
France – French Antilles (St Martin)	
Netherlands (Saba)	
Netherlands (Sint Eustatius)	
Sint Maarten (Kingdom of the Netherlands)	
United Kingdom (Anguilla)	
United Kingdom (British Virgin Islands)	
United States (Puerto Rico)	
United States (Virgin Islands)	
Antigua and Barbuda	Piarco FIR
Barbados	
Dominica	
France – French Antilles (Guadeloupe)	
France – French Antilles (Martinique)	
Grenada	
Saint Kitts and Nevis	
Saint Lucia	
Saint Vincent and the Grenadines	
Trinidad and Tobago	
United Kingdom (British Virgin Islands)	
United Kingdom (Montserrat)	
Argentina	
	Córdoba FIR
	Comodoro Rivadavia FIR
	Mendoza FIR
	Resistencia
Aruba (Kingdom of the Netherlands)	Curaçao FIR
Curaçao (Kingdom of the Netherlands)	
Netherlands (Bonaire)	
Bahamas	Nassau FIR
Belize	Central American FIR
Costa Rica	
El Salvador	
Guatemala	
Honduras	
Nicaragua	
United Kingdom (Bermuda)	New York Oceanic West FIR
Bolivia	La Paz FIR

STATE	FIR/UIR
1	2
Brazil	Amazonica FIR
	Atlantico FIR
	Brasilia FIR
	Curitiba FIR
	Recife FIR
United Kingdom (Cayman Islands)	Kingston FIR
Jamaica	
Chile	Antofagasta FIR
	Isla de Pascua FIR
	Puerto Montt FIR
	Punta Arenas FIR
	Santiago FIR
Colombia	Bogotá FIR
	Barranquilla FIR
Cuba	Habana FIR
Dominican Republic	Santo Domingo FIR
Ecuador	Guayaquil FIR
French Guiana	Cayenne FIR
Guyana	Georgetown FIR
Haiti	Port Au Prince FIR
Mexico	Mazatlán Oceanic FIR
	Mexico FIR
Panama	Panamá FIR
Paraguay	Asunción FIR
Peru	Lima FIR
Suriname	Paramaribo FIR
United Kingdom (Turks and Caicos Islands)	Miami Oceanic FIR
United States	
Uruguay	Montevideo FIR
United States	Houston FIR
	Houston Oceanic FIR
	Miami FIR
Venezuela	Maiquetia FIR

**CAR/SAM ANP, VOLUME I****PART II – AERODROMES / AERODROME OPERATIONS (AOP)****1. INTRODUCTION**

1.1 This part of the CAR/SAM ANP constitutes the agreed regional requirements considered to be the minimum necessary for effective planning and implementation of aerodromes operations (AOP) facilities and services in the Caribbean and South American Regions and complements the provisions of ICAO SARPs and PANS related to AOP. It contains stable plan elements related to the assignment of responsibilities to States for the provision of aerodrome facilities and services within the Regions in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300) and mandatory requirements related to the AOP facilities and services to be implemented by States in accordance with regional air navigation agreements.

1.2 The dynamic plan elements related to the assignment of responsibilities to States for the provision of the aerodrome facilities and services including the mandatory requirements based on regional air navigation agreements related to the AOP are contained in the CAR/SAM ANP Volume II Part II - AOP.

1.3 The CAR/SAM ANP Volume III contains dynamic/flexible plan elements related to the implementation of air navigation systems and their modernization in line with the ICAO Aviation System Block Upgrades (ASBUs) methodology and associated technology roadmaps described in the Global Air Navigation Plan. The ASBU modules are aimed at increasing capacity and improving efficiency of the aviation system whilst maintaining or enhancing safety level, and achieving the necessary harmonization and interoperability at regional and global level. This includes the regionally agreed ASBU modules applicable to the specified ICAO region/sub-region and associated elements/enablers necessary for the monitoring of the status of implementation of these ASBU modules.

***Standards and Recommended Practices and Procedures for Air Navigation Services***

1.4 The SARPs and PANS and associated guidance material applicable to the provision of AOP are contained in:

- a) Annex 14 — *Aerodromes*, Volumes I and II;
- b) *Procedures for Air Navigation Services – Aerodromes* (PANS-Aerodromes) (Doc 9981);
- c) *Airport Planning Manual* (Doc 9184);
- d) *Aerodrome Design Manual* (Doc 9157);
- e) *Airport Services Manual* (Doc 9137);
- f) *Manual on Certification of Aerodromes* (Doc 9774);
- g) *Assessment, Measurement and Reporting of Runway Surface Conditions* (Cir 329);
- h) *Operation of New Larger Aeroplanes at existing aerodromes* (Cir 305);
- i) *Advanced Surface Movement Guidance and Control Systems (A-SMGCS) Manual* (Doc 9830);
- j) *Manual of Surface Movement Guidance and Control Systems (SMGCS)* (Doc 9476);
- k) *Heliport Manual* (Doc 9261);
- l) *Manual on the prevention of runway incursions* (Doc 9870);
- m) *Stolport Manual* (Doc 9150);

- n) *ICAO Bird Strike Information System Manual* (Doc 9332); and
- o) *Manual on Civil Aviation Jet Fuel Supply* (Doc 9977).

## **2. GENERAL REGIONAL REQUIREMENTS**

2.1 Regular aerodromes and their alternates required for international commercial air transport operations should be determined through regional agreements, based on the list of international aerodromes designated by States and the needs of the international commercial flights. Consideration should also be given to the needs of international general aviation flights as identified by user requirements. The alternate aerodromes should be planned /selected, to the greatest practicable extent, from the list of existing regular aerodromes used for international aircraft operations. However, where in specific cases the designation of another aerodrome in close proximity to a regular aerodrome would result in appreciable fuel conservation or other operational advantages, this aerodrome may be designated for use as an alternate aerodrome only. Planning of alternate aerodromes should be made on the basis of the following objectives:

- a) to ensure that at least one suitable alternate is available for each international aircraft operation; and
- b) to ensure that the facilities at the designated alternate aerodrome(s) are appropriate for the alternate aircraft operations.

2.2 The list of regular and alternate aerodromes (including their designations) required in the Regions to serve international civil aviation operations (international scheduled air transport, non-scheduled air transport and general aviation operations) is given in [Table AOP I-1](#). Each Contracting State should ensure the provision of aerodrome facilities and services at the international aerodromes under its jurisdiction.

## **3. SPECIFIC REGIONAL REQUIREMENTS**

3.1 None

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**Table AOP I-1**  
**INTERNATIONAL AERODROMES REQUIRED IN THE CAR/SAM REGIONS**

EXPLANATION OF THE TABLE

City/Aerodrome: Name of the city and aerodrome, preceded by the location indicator.  
 Designation: 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;  
 ANS — international non-scheduled air transport, alternate use.

*Note 1 — when an aerodrome is needed for more than one type of use, normally only the use highest on the above list is shown.*

[Example — an aerodrome required for both RS and AS use would only be shown as RS in the list.]

*Note 2 — 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 the name of a city.*

Location Indicator	Name of City/Aerodrome	Designation
<b>ANGUILLA (United Kingdom)</b>		
TQPF	THE VALLEY/ Clayton J. Lloyd Intl. Airport	RS
<b>ANTIGUA AND BARBUDA</b>		
TAPA	SAINT JOHNS/ V.C. Bird International Airport	RS
<b>ARGENTINA</b>		
SABE	BUENOS AIRES/Aeroparque J. Newbery	RS
SARI	CATARATAS DEL IGUAZÚ / My. D. C. E. Krause	RNS & AS
SAVC	COMODORO RIVADAVIA/ Gral. E. Mosconi	RS
SACO	CORDOBA/Ing. Aer. A.L.V. Taravella	RS
SAEZ	EZEIZA/Ministro Pistarini	RS
SASJ	JUJUY/Gobernador Guzmán	RS
SAZM	MAR DEL PLATA/Astor Piazzolla	RG & AS
SAME	MENDOZA/El Plumerillo	RS
SAZN	NEUQUÉN/Presidente Perón	RNS & AS
SARE	RESISTENCIA	RNS & AS
SAWG	RÍO GALLEGOS/Piloto Civil N. Fernández	RS
SAAR	ROSARIO/Islas Malvinas	RS
SASA	SALTA/ General D. Martín Miguel de Güemes	RS
SAZS	SAN CARLOS DE BARILOCHE	RNS & AS
SADF	SAN FERNANDO/ Aeropuerto Internacional de San Fernando	RG
SAWH	USHUAIA/Malvinas Argentinas	RNS & AS
<b>ARUBA</b>		
TNCA	ORANJESTAD/Reina Beatrix International Airport	RS
<b>BAHAMAS</b>		
MYBS	ALICE TOWN/ Bimini International Airport	RS
MYSM	COCKBURN TOWN/San Salvador International Airport	RS

<b>Location Indicator</b>	<b>Name of City/Aerodrome</b>	<b>Designation</b>
MYGF	FREEPORT/ Grand Bahama International Airport	RS
MYEM	GOVERNOR'S HARBOUR/Governor's Harbour International Airport	RS
MYAM	MARSH HARBOUR/ Marsh Harbour International Airport	RS
MYNN	NASSAU/Lynden Pindling International Airport	RS
MYEH	NORTH ELEUTHERA/ North Eleuthera International Airport	RS
MYLS	STELLA MARIS/Stella Maris International Airport	RS
MYAT	TREASURE CAY/ Treasure Cay International Airport	RS
MYGW	WEST END/West End International Airport	RNS & AS
<b>BARBADOS</b>		
TBPB	BRIDGETOWN/Grantley Adams Intl	RS
<b>BELIZE</b>		
MZBZ	BELIZE/Philip S.W. Goldson Intl	RS
<b>BERMUDA (United Kingdom)</b>		
TXKF	BERMUDA/ L. F. Wake Intl	RS
<b>BOLIVIA</b>		
SLCB	COCHABAMBA/ Aeropuerto Internacional Jorge Wilstermann	AS
SLLP	LA PAZ/ Aeropuerto Internacional de El Alto	RS
SLVR	SANTA CRUZ/ Aeropuerto Internacional Viru Viru	RS
<b>BRAZIL</b>		
SBBE	BELEM/Val de Cans/Júlio Cezar Ribeiro, PA	RS
SBCF	BELO HORIZONTE/Tancredo Neves, MG	RS
SBBV	BOA VISTA/Atlas Brasil Cantanhede, RR	RS
SBBR	BRASILIA/Pres. Juscelino Kubitschek, DF	RS
SBCB	CABO FRIO/Cabo Frio, RJ	RS
SBKP	CAMPINAS/Viracopos, SP	RS
SBCG	CAMPO GRANDE/Campo Grande, MS	RS
SBCR	CORUMBA/Corumbá, MS	RS
SBCZ	CRUZEIRO DO SUL/Cruzeiro do Sul, AC	RS
SBCY	CUIABÁ/Marechal Rondon, MT	RS
SBCT	CURITIBA/Afonso Pena, PR	RS
SBFL	FLORIANÓPOLIS/Hercílio Luz, SC	RS
SBFZ	FORTALEZA/Pinto Martins, CE	RS
SBFI	FOZ DO IGUAÇU/Cataratas, PR	RS
SBMQ	MACAPÁ/Alberto Alcolumbre, AP	RS
SBMO	MACEIO/Zumbi dos Palmares, AL	RS
SBEG	MANAUS/Eduardo Gomes, AM	RS
SBPL	PETROLINA/Senador Nilo Coelho, PE	RS
SBPP	PONTA PORÃ/Ponta Porã, MS	RNS
SBPA	PORTO ALEGRE/Salgado Filho, RS	RS

<b>Location Indicator</b>	<b>Name of City/Aerodrome</b>	<b>Designation</b>
SBRF	RECIFE/Guararapes– Gilberto Freyre, PE	RS
SBGL	RIO DE JANEIRO/Galeão-Antônio Carlos Jobim, RJ	RS
SBSV	SALVADOR/Deputado Luis Eduardo Magalhães, BA	RS
SBSN	SANTARÉM/Maestro Wilson Fonseca, PA	AS
SBSG	SÃO GONÇALO DO AMARANTE/São Gonçalo do Amarante, RN	RS
SBSL	SÃO LUÍS/Marechal Cunha Machado, MA	AS
SBGR	SÃO PAULO/Guarulhos- Governador André Franco Montoro, SP	RS
SBTT	TABATINGA/Tabatinga, AM	RS
<b>CAYMAN ISLANDS (United Kingdom)</b>		
MWCB	CAYMAN BRAC/Gerrard Smith Intl	RS
MWCR	GEORGETOWN/Owen Roberts Intl	RS
<b>CHILE</b>		
SCFA	ANTOFAGASTA/AP. Cerro Moreno	AS
SCAR	ARICA/AP. Chacalluta	RS
SCIE	CONCEPCION/AP. Altn. Carriel Sur	AS
SCDA	IQUIQUE/AP. Diego Aracena	RS
SCIP	ISLA DE PASCUA/AP Mataveri	RS
SCTE	PUERTO MONTT/AP. El Tepual	RS
SCCI	PUNTA ARENAS/AP. Pdte. Carlos Ibáñez del Campo	AS
SCEL	SANTIAGO/AP. Arturo Merino Benítez	RS
<b>COLOMBIA</b>		
SKBQ	BARRANQUILLA/Ernesto Cortissoz/Atlantico	RS
SKBO	BOGOTA /Eldorado/Distrito Capital	RS
SKBG	BUCARAMANGA/Palonegro	RS
SKCL	CALI/Alfonso Bonilla Aragón/Valle	RS
SKCG	CARTAGENA/Rafael Nuñez/Bolívar	RS
SKCC	CUCUTA/Camilo Daza/Norte de Santander	RNS & AS
SKLT	LETICIA/Alfredo Vásquez Cobo/Amazonas	RNS & AS
SKPE	PEREIRA/Matecaña	RS
SKRG	RIONEGRO/José María Córdoba/Antioquia	RS
SKSP	SAN ANDRES/Gustavo Rojas Pinilla/San Andrés	RS
SKSM	SANTA MARTA/Simón Bolívar	RS
<b>COSTA RICA</b>		
MROC	ALAJUELA/Juan Santamaría Intl.	RS
MRLB	LIBERIA/Daniel Oduber Quirós	RNS & AS
MRLM	LIMON/Limón Intl	RG
MRPV	PAVAS/Tobias Bolaños Intl.	RG
<b>CUBA</b>		
MUCM	CAMAGUEY/Ignacio Agramonte	RS

<b>Location Indicator</b>	<b>Name of City/Aerodrome</b>	<b>Designation</b>
MUCC	CAYO COCO/Jardines del Rey	RS
MUCF	CIENFUEGOS/Jaime González	RS
MUCL	CAYO LARGO DEL SUR/Vilo Acuña	RS
MUCU	SANTIAGO DE CUBA/ Antonio Maceo	RS
MUHA	HABANA/José Martí	RS
MUHG	HOLGUIN/Frank País	RS
MUMZ	MANZANILLO/Sierra Maestra	RS
MUSC	SANTA CLARA/Abel Santamaria	RS
MUVR	VARADERO/Juan Gualberto Gómez	RS
<b>CURAÇAO</b>		
TNCC	WILLEMSTAD/Hato, Curaçao I.	RS
<b>DOMINICA</b>		
TDPD	MARIGOT/Melville Hall International Airport	RS
TDPR	ROSEAU/Canefield Intl.	RS
<b>DOMINICAN REPUBLIC</b>		
MDBH	BARAHONA/Aeropuerto. Internacional María Montez	RS
MDJB	HIGUERO/Dr. Joaquín Balaguer Intl.	RS
MDLR	LA ROMANA/Casa de Campo Intl.	RS
MDPP	PUERTO PLATA/ Gregorio Luperón Intl	RS
MDPC	PUNTA CANA/Punta Cana Intl	RS
MDST	SANTIAGO/Cibao Intl	RS
MDSO	SANTO DOMINGO/Jose Francisco Peña Gomez Intl	RS
MDCY	SAMANA/El Catey Intl.	RS
<b>ECUADOR</b>		
SEGU	GUAYAQUIL/José Joaquín Olmedo	RS
SELT	LATACUNGA/Cotopaxi	RNS & AS
SEMT	MANTA/Eloy Alfaro	RS
SEQM	QUITO/Mariscal Sucre	RS
<b>EL SALVADOR</b>		
MSLP	SAN SALVADOR/ Aeropuerto Intl El Salvador	RS
MSSS	SAN SALVADOR/ Ilopango Intl	RG
<b>FRENCH ANTILLES (France)</b>		
TFFF	FORT-DE-FRANCE/Le Lamentin, Martinique	RS
TFFR	POINTE-À-PITRE/Le Raizet, Guadeloupe	RS
TFFJ	SAINT BARTHELEMY/ Saint Barthelemy, Guadeloupe	RS
TFFG	SAINT MARTIN/Grand Case, Guadeloupe	RS
<b>FRENCH GUIANA (France)</b>		
SOCA	CAYENNE/Rochambeau	RS
<b>GRENADA</b>		

<b>Location Indicator</b>	<b>Name of City/Aerodrome</b>	<b>Designation</b>
TGPZ	LAURISTON / Carriacou I.	RS
TGPY	SAINT GEORGES /Maurice Bishop Intl.	RS
<b>GUATEMALA</b>		
MGGT	GUATEMALA/La Aurora	RS
MGPB	PUERTO BARRIOS/ Puerto Barrios	RG & AS
MGSJ	SAN JOSE/Puerto de San Jose	RG & AS
MGMM	SANTA HELENA/Mundo Maya Intl.	RG &AS
<b>GUYANA</b>		
SYCJ	GEORGETOWN/Cheddi Jagan Int'l Airport	RS
SYGO	GEORGETOWN/Ogle International Airport	RS
<b>HAITI</b>		
MTCH	CAP HAITIEN/Cap Haitien Intl	RS
MTPP	PORT-AU-PRINCE/Port-au-Prince Intl	RS
<b>HONDURAS</b>		
MHLC	LA CEIBA/Goloson Intl	RS
MHRO	ROATAN/Juan Manuel Gálvez Intl.	RS
MHLM	SAN PEDRO SULA/Ramón Villeda Morales Intl.	RS
MHTG	TEGUCIGALPA/Toncontín Intl	RS
<b>JAMAICA</b>		
MKJP	KINGSTON/Norman Manley Intl	RS
MKJS	MONTEGO BAY/Sangster Intl	RS
MKBS	OCHO RIOS/Ian Fleming Intl.	RG
<b>MEXICO</b>		
MMAA	ACAPULCO/Gral. Juan N. Alvarez Intl.	RS
MMAS	AGUASCALIENTES/Aeropuerto Jesús Terán	RS
MMBT	BAHIAS DE HUATULCO/Bahías de Huatulco	RS
MMSL	CABO SAN LUCAS/Cabo San Lucas	RNS
MMCP	CAMPECHE/Ing. Alberto Acuña Ongay	RG
MMUN	CANCUN/Cancún Intl.	RS
MMCM	CHETUMAL/Chetumal Intl.	RS
MMCT	CHICHEN-ITZA/Chichen Itza	RS
MMCU	CHIHUAHUA/General de División y Piloto Aviador Roberto Fierro Villalobos	RS
MMMC	CIUDAD ACUÑA/Cuidad Acuña Intl.	RG
MMCE	CIUDAD DEL CARMEN/Ciudad del Carmen Intl	RS
MMCN	CIUDAD OBREGON/Ciudad Obregon	AS
MMCV	CIUDAD VICTORIA/General Pedro José Méndez	AS
MMCS	CIUDAD JUÁREZ/Abraham González Intl.	RS
MMCZ	COZUMEL/Cozumel Intl.	RS

<b>Location Indicator</b>	<b>Name of City/Aerodrome</b>	<b>Designation</b>
MMCB	CUERNAVACA/General Mariano Matamoros	RS
MMCL	CULIACAN/Culiacan	RS
MMDO	DURANGO/Durango	RS
MMGL	GUADALAJARA/Miguel Hidalgo Costilla Intl.	RS
MMGM	GUAYMAS/Gral. José María Yañez Intl.	RS
MMHO	HERMOSILLO/Aeropuerto Internacional General Ignacio Pesqueira García	RS
MMZH	IXTAPA-ZIHUATANEJO/ Ixtapa-Zihuatanejo Intl.	RS
MMLP	LA PAZ/Gral. Manuel Márquez de León Intl.	RS
MMLO	LEON/Aeropuerto Internacional de Guanajuato	RS
MMLT	LORETO/LoretoIntl.	RS
MMLM	LOS MOCHIS/Del Valle del Fuerte	RS
MMZO	MANZANILLO/Playa de Oro Intl.	RS
MMMA	MATAMOROS/Matamoros Intl.	RG & AS
MMMZ	MAZATLAN/Gral. Rafael Buelna Intl.	RS
MMMD	MERIDA/Lic. Manuel Crescencio Rejón Intl	RS
MMML	MEXICALI/Gral. Rodolfo Sánchez Taboada Intl.	RG
MMMXX	MEXICO/Aeropuerto Internacional Benito Juárez, Ciudad de México	RS
MMMT	MINATITLAN/Minatitlan	RS
MMMV	MONCLOVA/Venustiano Carranza	RS
MMAN	MONTERREY/Del Norte Intl.	RG & AS
MMMY	MONTERREY/Gral. Mariano Escobedo Intl.	RS
MMMM	MORELIA/Gral. Francisco J. Mujica Intl.	RS
MMNG	NOGALES/Nogales Intl.	RG
MMNL	NUEVO LAREDO/ Aeropuerto Internacional Quetzalcóatl	RG
MMOX	OAXACA/Xoxocotlán	RS
MMPQ	PALENQUE/Palenque	RS
MMPG	PIEDRAS NEGRAS/ Piedras Negras Intl.	RG
MMPB	PUEBLA/Hermanos Serdan	RS
MMPS	PUERTO ESCONDIDO/Puerto Escondido	AS
MMPE	PUERTO PEÑASCO/Aeropuerto del Mar de Cortes	RS
MMPR	PUERTO VALLARTA/ Lic. Gustavo Diaz Ordaz Intl.	RS
MMQT	QUERETARO/Intercontinental de Querétaro	RS
MMRX	REYNOSA/Gral. Lucio Blanco Intl.	RG
MMIO	SALTILLO/Plan de Guadalupe	RS
MMSF	SAN FELIPE/San Felipe Intl.	RG
MMSD	SAN JOSE DEL CABO/ Aeropuerto Internacional Los Cabos	RS
MMSP	SAN LUIS POTOSI/Ponciano Arriaga	RS
MMTM	TAMPICO/Gral. Francisco Javier Mina Intl.	RS
MMTP	TAPACHULA/Tapachula Intl	RS

<b>Location Indicator</b>	<b>Name of City/Aerodrome</b>	<b>Designation</b>
MMEP	TEPIC/Tepic Intl	RS
MMTJ	TIJUANA/Gral. Abelardo L. Rodríguez Intl.	RS
MMTO	TOLUCA/Jose María Morelos y Pavón	RNS
MMTC	TORREON/Francisco Sarabia	RS
MMTG	TUXTLA GUTIERREZ/Angel Albino Corzo	RS
MMPN	URUAPAN/General Ignacio López Rayón	RS
MMVR	VERACRUZ/Gral. Heriberto Jara Intl.	RS
MMVA	VILLAHERMOSA/Capitán P.A. Carlos Roviroso	RS
MMZC	ZACATECAS/Aeropuerto General Leobardo C. Ruiz Intl.	RS
<b>MONTSERRAT (United Kingdom)</b>		
TRPG	GERALD'S / John A. Osborne	RS
<b>NETHERLANDS (Netherlands)</b>		
TNCB	KRALENDIJK/Flamingo, Bonaire I.	RS
TNCE	ORANJESTAD/F.D. Roosevelt, Saint Eustatius I.	RS
TNCS	THE BOTTOM/Juancho E. Yrausquin Airport, Saba	RS
<b>NICARAGUA</b>		
MNMG	MANAGUA/Augusto César Sandino Intl	RS
<b>PANAMA</b>		
MPBO	BOCAS DEL TORO/Bocas del Toro	RG & AS
MPDA	DAVID/Enrique Malek	RS
MPMG	PANAMA/Marcos A. Gelabert	RG & AS
MPPA	PANAMA/Panamá Pacífico	AS
MPSM	PANAMA/Cap. Scarlett Martínez	AS
MPTO	PANAMA/Tocumen Intl	RS
<b>PARAGUAY</b>		
SGAS	LUQUE/Silvio Pettrossi Intl.	RS
SGES	MINGA GUAZU/Guaraní Intl.	RS
<b>PERU</b>		
SPQU	AREQUIPA/INTL Alfredo Rodríguez Ballón	AS
SPHI	CHICLAYO/ INTL Capitán FAP José Abelardo Quiñones Gonzalez; Gran General del Aire del Perú	AS
SPZO	CUSCO/INTL Teniente FAP Alejandro Velazco Astete	RS
SPQT	IQUITOS/INTL Coronel FAP Francisco Secada Vignetta	RS
SPJC	LIMA-CALLAO/INTL Jorge Chávez	RS
SPSO	PISCO/INTL Pisco	AS
SPTN	TACNA/INTL Coronel FAP Carlos Ciriani Santa Rosa	RG
SPRU	TRUJILLO/INTL Capitán FAP Carlos Martínez de Pinillos	AS
<b>PUERTO RICO (United States)</b>		
TJBQ	AGUADILLA/Rafael Hernández Intl	RS
TJFA	FAJARDO/Diego Jiménez Torres	RS

<b>Location Indicator</b>	<b>Name of City/Aerodrome</b>	<b>Designation</b>
TJPS	PONCE/Ponce-Mercedita	AS
TJSJ	SAN JUAN/Luis Muñoz Marín Intl	RS
TJVQ	VIEQUES/Antonio Rivera	RS
<b>SAINT KITTS AND NEVIS</b>		
TKPK	BASSETERRE/Robert L. Bradshaw, Saint Kitts I.	RS
TKPN	CHARLESTOWN/Newcastle Nevis I.	RS
<b>SAINT LUCIA</b>		
TLPC	CASTRIES/George F. L. Charles	RS
TLPL	VIEUX-FORT/Hewanorra Intl	RS
<b>SAINT VINCENT AND THE GRENADINES</b>		
TVSB	BEQUIA/J.F. Mitchell	RS
TVSC	CANOUAN/Canouan	RS
TVSV	KINGSTOWN/E.T. Joshua	RS
TVSM	MUSTIQUE/Mustique	RNS
TVSU	UNION ISLAND/Union Island	RS
<b>SINT MAARTEN</b>		
TNCM	PHILIPSBURG/Princess Juliana, St. Maarten I.	RS
<b>SURINAME</b>		
SMZO	PARAMARIBO/Zorg en Hoop	RG
SMJP	ZANDERY/Johan Adolf Pengel Intl	RS
<b>TRINIDAD AND TOBAGO</b>		
TTPP	PORT OF SPAIN/Piarco Intl, Trinidad I.	RS
TTCP	SCARBOROUGH/Crown Point, Tobago I.	RS
<b>TURKS AND CAICOS ISLANDS (United Kingdom)</b>		
MBGT	GRAND TURK/Grand Turk Intl	RS
MBPV	PROVIDENCIALES/ Providenciales Intl	RS
MBSC	SOUTH CAICOS/South Caicos Intl	RS
<b>URUGUAY</b>		
SULS	MALDONADO/Intl. C/C, Carlos A. Curbelo “Laguna del Sauce”	RS
SUMU	MONTEVIDEO/Intl. de Carrasco “Gral. Cesareo L. Berisso”	RS
<b>VENEZUELA</b>		
SVBC	BARCELONA/Gral. José Antonio Anzóategui Intl	RS
SVBM	BARQUISIMETO/Gral. Jacinto Lara Intl.	RS
SVCS	CARACAS/Oscar Machado Zuloaga Intl.	RG
SVJC	PARAGUANA/Josefa Camejo Intl	RS
SVMC	MARACAIBO/La Chinita Intl	RS
SVMG	MARGARITA/Intl Del Caribe Gral. Santiago Marino	RS
SVMI	MAIQUETIA/Simon Bolivar Intl	RS
SVPR	PUERTO ORDAZ/Gral. Manuel Carlos Piar Intl	RS

<b>Location Indicator</b>	<b>Name of City/Aerodrome</b>	<b>Designation</b>
SVSA	SAN ANTONIO DEL TACHIRA/San Antonio del Tachira Intl	RG
SVSO	SANTO DOMINGO DEL TACHIRA/May. Buenaventura Vivas Intl.	RG
SVVA	VALENCIA/Arturo Michelena Intl	RS
<b>VIRGIN ISLANDS (United Kingdom)</b>		
TUPJ	ROADTOWN/Beef Island	RS
TUPW	VIRGIN GORDA I./Virgin Gorda	RS
<b>VIRGIN ISLANDS (United States)</b>		
TISX	CHRISTIANSTED/Henry E. Rohlsen, St. Croix	RS
TIST	SAINT THOMAS/Cyril E. King	RS

## CAR/SAM ANP, VOLUME I

### PART III – COMMUNICATIONS, NAVIGATION AND SURVEILLANCE (CNS)

#### 1. INTRODUCTION

1.1 This part of the CAR/SAM ANP constitutes the agreed regional requirements considered to be the minimum necessary for effective planning and implementation of Communications, Navigation and Surveillance (CNS) facilities and services in the CAR/SAM Regions and complements the provisions of ICAO SARPs and PANS related to CNS. It contains stable plan elements related to the assignment of responsibilities to States for the provision of CNS facilities and services within the ICAO Caribbean and South American regions in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300) and mandatory requirements related to the CNS facilities and services to be implemented by States in accordance with regional air navigation agreements.

1.2 The dynamic plan elements related to the assignment of responsibilities to States for the provision of CNS facilities and services and the mandatory requirements based on regional air navigation agreements related to CNS are contained in the CAR/SAM ANP Volume II, Part III – CNS.

1.3 The CAR/SAM ANP Volume III contains dynamic/flexible plan elements related to the implementation of air navigation systems and their modernization in line with the ICAO Aviation System Block Upgrades (ASBUs) methodology and associated technology roadmaps described in the Global Air Navigation Plan. The ASBU modules are aimed at increasing capacity and improving efficiency of the aviation system whilst maintaining or enhancing safety level, and achieving the necessary harmonization and interoperability at regional and global level. This includes the regionally agreed ASBU modules applicable to the specified ICAO region/sub-region and associated elements/enablers necessary for the monitoring of the status of implementation of these ASBU modules.

1.4 In planning for these elements, economy and efficiency should be taken into account in order to ensure that the requirements for the provision of CNS facilities and services can be kept to a minimum. CNS facilities and services should fulfil multiple functions whenever this is feasible.

#### ***Standards and Recommended Practices and Procedures for Air Navigation Services***

1.5 The SARPs and PANS and related guidance material applicable to the provision of CNS are contained in:

- a) Annex 10 – *Aeronautical Telecommunications*, Volumes I, II, III, IV and V;
- b) Annex 2 – *Rules of the Air*;
- c) Annex 3 – *Meteorological Service for international air navigation*;
- d) Annex 6 – *Operation of Aircraft*, Parts I (Chapter 7), II (Chapter 7) and III (Chapter 5);
- e) Annex 11 – *Air Traffic Services*;
- f) Annex 12 – *Search and Rescue*;
- g) Annex 15 – *Aeronautical Information Services*;
- h) *Procedures for Air Navigation Services – Air Traffic Management* (PANS-ATM) (Doc 4444);
- i) *Regional Supplementary Procedures* (Doc 7030);
- j) *GNSS Manual* (Doc 9849);

- k) *Manual on Detailed Technical Specifications for the Aeronautical Telecommunication Network (ATN) using ISO/OSI Standards and Protocols* (Doc 9880);
- l) *ICAO Aeronautical Telecommunication Network (ATN) Manual for the ATN using IPS Standards and Protocols* (Doc 9896);
- m) *Manual of Testing of Radio Navigation Aids* (Doc 8071);
- n) *Manual on the Planning and Engineering of the Aeronautical Fixed Telecommunications Network* (Doc 8259);
- o) *Manual on Required Communication Performance (RCP)* (Doc 9869);
- p) *Training Manual* (Doc 7192);
- q) *Performance-based Navigation Manual* (Doc 9613);
- r) *Handbook on Radio Frequency Spectrum Requirements for Civil Aviation* (Doc 9718);
- s) *Manual on Airborne Surveillance Applications* (Doc 9994); and
- t) *Manual of Air Traffic Services Data Link Applications* (Doc 9694).

## **2. GENERAL REGIONAL REQUIREMENTS**

### **Communications**

#### *Aeronautical Fixed Service (AFS)*

2.1 The aeronautical fixed service (AFS) should satisfy the communication requirements of ATS, AIS/AIM, MET and SAR, including specific requirements in terms of system reliability, message integrity and transit times, with respect to printed as well as digital data and speech communications. If need be, it should, following agreement between individual States and aircraft operators, satisfy the requirements for airline operational control.

#### *The Aeronautical Telecommunication Network (ATN)*

2.2 The ATN of the Regions should have sufficient capacity to meet the minimum requirements for data communications for the services mentioned in paragraph 2.1 above.

#### *Aeronautical Mobile Service (AMS)*

2.3 Air-ground communications facilities should meet the agreed communication requirements of the air traffic services, as well as all other types of communications which are acceptable on the AMS to the extent that the latter types of communications can be accommodated.

#### *Air-ground communications for ATS*

2.4 Air-ground communications for ATS purposes should be so designed to require the least number of frequency and channel changes for aircraft in flight compatible with the provision of the required service. They should also provide for the minimum amount of coordination between ATS units and provide for optimum economy in the frequency spectrum used for this purpose.

#### *Air-ground data link communications*

2.5 Air-ground data link communications should be implemented in such a way that they are regionally and globally harmonised and make efficient use of available communication means and ensure optimum economy in frequency spectrum use and system automation.

### **Navigation**

2.6 Planning of aeronautical radio navigation services should be done on a total system basis, taking full account of the navigation capabilities as well as cost effectiveness. The total system composed of station-referenced navigation aids, satellite-based navigation systems and airborne capabilities should meet the performance based navigation (PBN) requirements for all aircraft using the system and should form an adequate basis for the provision of positioning, guidance and air traffic services.

2.7 Account should be taken of the fact that certain aircraft may be able to meet their navigation needs by means of self-contained or satellite-based aids, thus eliminating the need for the provision of station-referenced aids along the ATS routes used by such aircraft, as well as the need to carry on board excessive redundancies.

### **Surveillance**

2.8 Planning of aeronautical surveillance systems should be made based on a system approach concept, where collaboration and sharing of data sources should be considered in support of an efficient use of the airspace.

### **Frequency Management**

2.9 Frequency assignment planning in the Region(s) should be carried out in accordance with the provisions of Annex 10 and *ICAO Handbook on Radio Frequency spectrum for Civil Aviation* (Doc 9718), supplemented, as necessary, by regional recommendations and technical criteria developed for this purpose.

## **3. SPECIFIC REGIONAL REQUIREMENTS**

3.1 None

**CAR/SAM ANP, VOLUME I**  
**PART IV - AIR TRAFFIC MANAGEMENT (ATM)**

**1. INTRODUCTION**

1.1 This part of the CAR/SAM ANP constitutes the agreed regional requirements considered to be the minimum necessary for effective planning and implementation of air traffic management (ATM) facilities and services in the Caribbean and South American regions and complements the provisions of the ICAO SARPs and PANS related to ATM. It contains stable plan elements related to the assignment of responsibilities to States for the ATM system requirements to be applied within the ICAO Caribbean and South American regions in accordance with Article 28 of the *Convention on International Civil Aviation* (Doc 7300) and mandatory requirements related to the ATM facilities and services to be implemented by States in accordance with regional air navigation agreements.

1.2 The dynamic plan elements related to the assignment of States' responsibilities for the implementation of the ATM system and the mandatory requirements based on regional air navigation agreements related to ATM are contained in CAR/SAM ANP Volume II, Part IV - ATM.

1.3 The CAR/SAM ANP Volume III contains dynamic/flexible plan elements related to the implementation of air navigation systems and their modernization in line with the ICAO Aviation System Block Upgrades (ASBUs) methodology and associated technology roadmaps described in the Global Air Navigation Plan. The ASBU modules are aimed at increasing capacity and improving efficiency of the aviation system whilst maintaining or enhancing safety level, and achieving the necessary harmonization and interoperability at regional and global level. This includes the regionally agreed ASBU modules applicable to the specified ICAO region/sub-region and associated elements/enablers necessary for the monitoring of the status of implementation of these ASBU modules.

***Standards and Recommended Practices and Procedures for Air Navigation Services***

1.4 The SARPs and PANS and related guidance material applicable to the provision of ATM are contained in:

- a) *Annex 2 — Rules of the Air*;
- b) *Annex 6 — Operation of Aircraft*;
- c) *Annex 11 — Air Traffic Services*;
- d) *Procedures for Air Navigation Services — Air Traffic Management (PANS-ATM)* (Doc 4444);
- e) *Procedures for Air Navigation Services — Aircraft Operations (PANS-OPS)* (Doc 8168);  
and
- f) *Regional Supplementary Procedures* (Doc 7030).

**2. GENERAL REGIONAL REQUIREMENTS**

2.1 The description of the current Flight Information Regions (FIR)/Upper Information Regions (UIR), as approved by the ICAO Council, are contained in [Table ATM I-1](#) and depicted in the **Charts ATM I-1** and **ATM I-2**, respectively.

2.2 States should ensure that the provision of air traffic services (ATS) covers its own territory and those areas over the high seas for which it is responsible for the provision of those services, in accordance with **Charts ATM I-1** and **ATM I-2**.

*Regional ATS Routes and organized track structures*

2.3 PIRGs 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 Regions. Where applicable, details of the ATS routes within the Regions are contained in Volume II.

*ICARD Global Database*

2.4 The five-letter name-codes assigned to significant points should be coordinated through the ICAO Regional Offices and obtained from the ICAO International Codes and Routes Designators (ICARD) Global Database.

*Aircraft Identification - SSR Code Assignments*

2.5 The management of Secondary Surveillance Radar (SSR) codes is a key element of ATM in order to ensure continuous and unambiguous aircraft identification. The requirements related to the SSR code assignment system used in the Regions is contained in Volume II.

*Performance-based Navigation (PBN)*

2.6 PIRGs are responsible for the development of the Regional PBN Plan. States' PBN Plans should be consistent with the Regional PBN Plan.

*Flexible Use of Airspace*

2.7 States should implement civil/military cooperation and coordination mechanisms to enhance the application of the Flexible Use of Airspace concept, which will contribute to more direct routing with a commensurate saving in fuel and associated emissions. States should arrange for close liaison and coordination between civil ATS units and relevant military operational control and/or air defence units in order to ensure integration of civil and military air traffic or its segregation, if required. Such arrangements would also contribute to increasing airspace capacity and to improving the efficiency and flexibility of aircraft operations.

*Reduced Vertical Separation Minimum (RVSM)/Regional Monitoring Agencies*

2.8 The CAR/SAM Regional Monitoring Agency is the designated Regional Monitoring Agency (RMA) responsible for monitoring the height-keeping performance and approval status of aircraft operating at these levels, in order to ensure that the continued application of RVSM meets the agreed regional safety objectives as set out by GREPECAS.

**3. SPECIFIC REGIONAL REQUIREMENTS**

3.1 None

**Table ATM I-1**  
**FLIGHT INFORMATION REGIONS (FIR)/UPPER INFORMATION REGIONS (UIR) IN THE**  
**CAR/SAM REGIONS**

**EXPLANATION OF THE TABLE**

Column:

- 1 Name of the FIR/UIR / Location Indicator according to Doc 7910
- 2 Description of FIR/UIR lateral limits;
  - a. Describe separately in the table the limits of the UIRs if they are not similar to the FIRs limits.
- 3 Remarks — additional information, if necessary.
  - a. Describe vertical limits if necessary.

FIR/UIR Location Indicator	Lateral limits coordinates	Remarks
1	2	3
<b>Amazonica (SBAZ)</b>	<b>FIR/UIR AMAZONICA</b>  <i>To be incorporated</i>	
<b>Antofagasta (SCFZ)</b>	<b>FIR/UIR ANTOFAGASTA</b>  <i>To be incorporated</i>	
<b>Asunción (SGFA)</b>	<b>FIR/UIR ASUNCIÓN</b>  <i>To be incorporated</i>	
<b>Atlantico (SBAO)</b>	<b>FIR/UIR ATLANTICO</b>  <i>To be incorporated</i>	
<b>Barranquilla (SKEC)</b>	<b>FIR BARRANQUILLA</b>  <i>To be incorporated</i>	
<b>Bogotá (SKED)</b>	<b>FIR/UIR BOGOTÁ</b>  <i>To be incorporated</i>	
<b>Brasilia (SBBS)</b>	<b>FIR/UIR BRASILIA</b>  <i>To be incorporated</i>	
<b>Cayenne (SOOO)</b>	<b>FIR/UIR CAYENNE</b>  <i>To be incorporated</i>	

<b>FIR/UIR Location Indicator</b>	<b>Lateral limits coordinates</b>	<b>Remarks</b>
<b>1</b>	<b>2</b>	<b>3</b>
<b>Central American (MHCC)</b>	<b>FIR/UIR CENTRAL AMERICAN</b>  <i>To be incorporated</i>	
<b>Comodoro Rivadavia (SAVF)</b>	<b>FIR/UIR COMODORO RIVADAVIA</b>  <i>To be incorporated</i>	
<b>Córdoba (SACF)</b>	<b>FIR/UIR CÓRDOBA</b>  <i>To be incorporated</i>	
<b>Curaçao (TNCF)</b>	<b>FIR/UIR CURAÇAO</b>  <i>To be incorporated</i>	
<b>Curitiba (SBCW)</b>	<b>FIR/UIR CURITIBA</b>  <i>To be incorporated</i>	
<b>Ezeiza (SAEF)</b>	<b>FIR/UIR EZEIZA</b>  <i>To be incorporated</i>	
<b>Georgetown (SYGC)</b>	<b>FIR/UIR GEORGETOWN</b>  <i>To be incorporated</i>	
<b>Guayaquil (SEFG)</b>	<b>FIR/UIR GUAYAQUIL</b>  <i>To be incorporated</i>	
<b>Habana (MUHA)</b>	<b>FIR/UIR HABANA</b>  <i>To be incorporated</i>	
<b>Houston Oceanic (KZHU)</b>	<b>FIR/UIR HOUSTON OCEANIC</b>  <i>To be incorporated</i>	
<b>Isla De Pascua (SCIZ)</b>	<b>FIR/UIR ISLA DE PASCUA</b>  <i>To be incorporated</i>	
<b>Kingston (MKTP)</b>	<b>FIR/UIR KINGSTON</b>  <i>To be incorporated</i>	

<b>FIR/UIR Location Indicator</b>	<b>Lateral limits coordinates</b>	<b>Remarks</b>
<b>1</b>	<b>2</b>	<b>3</b>
<b>La Paz (SLLF)</b>	<b>FIR/UIR LA PAZ</b>  <i>To be incorporated</i>	
<b>Lima (SPIM)</b>	<b>FIR/UIR LIMA</b>  <i>To be incorporated</i>	
<b>Maiquetia (SVZM)</b>	<b>FIR/UIR MAIQUETIA</b>  <i>To be incorporated</i>	
<b>Mazatlán Oceanic (MMFO)</b>	<b>FIR/UIR MAZATLÁN OCEANIC</b>  <i>To be incorporated</i>	
<b>Mendoza (SAMF)</b>	<b>FIR/UIR MENDOZA</b>  <i>To be incorporated</i>	
<b>Mexico (MMER)</b>	<b>FIR/UIR MEXICO</b>  <i>To be incorporated</i>	
<b>Miami Oceanic (KZMA)</b>	<b>FIR/UIR MIAMI OCEANIC</b>  <i>To be incorporated</i>	
<b>Montevideo (SUEO)</b>	<b>FIR/UIR MONTEVIDEO</b>  <i>To be incorporated</i>	
<b>Nassau (MYNA)</b>	<b>FIR NASSAU</b>  <i>To be incorporated</i>	
<b>New York Oceanic West (KZNW)</b>	<b>FIR/UIR NEW YORK OCEANIC WEST</b>  <i>To be incorporated</i>	
<b>Panamá (MPZL)</b>	<b>FIR/UIR PANAMÁ</b>  <i>To be incorporated</i>	
<b>Paramaribo (SMPM)</b>	<b>FIR/UIR PARAMARIBO</b>  <i>To be incorporated</i>	

<b>FIR/UIR Location Indicator</b>	<b>Lateral limits coordinates</b>	<b>Remarks</b>
<b>1</b>	<b>2</b>	<b>3</b>
<b>Piarco (TTZP)</b>	<b>FIR/UIR PIARCO</b>  <i>To be incorporated</i>	
<b>Port-au-Prince (MTEG)</b>	<b>FIR/UIR PORT-AU-PRINCE</b>  <i>To be incorporated</i>	
<b>Puerto Montt (SCTZ)</b>	<b>FIR/UIR PUERTO MONTT</b>  <i>To be incorporated</i>	
<b>Punta Arenas (SCCZ)</b>	<b>FIR/UIR PUNTA ARENAS</b>  <i>To be incorporated</i>	
<b>Recife (SBRE)</b>	<b>FIR/UIR RECIFE</b>  <i>To be incorporated</i>	
<b>Resistencia (SARR)</b>	<b>FIR/UIR RESISTENCIA</b>  <i>To be incorporated</i>	
<b>San Juan (TJZS)</b>	<b>FIR/UIR SAN JUAN</b>  <i>To be incorporated</i>	
<b>Santiago (SCEZ)</b>	<b>FIR/UIR SANTIAGO</b>  <i>To be incorporated</i>	
<b>Santo Domingo (MMCS)</b>	<b>FIR/UIR SANTO DOMINGO</b>  <i>To be incorporated</i>	

## CAR/SAM ANP, VOLUME I

### PART V – METEOROLOGY (MET)

#### 1. INTRODUCTION

1.1 This part of the **CAR/SAM ANP** constitutes the agreed regional requirements considered to be the minimum necessary for effective planning and implementation of aeronautical meteorology (MET) facilities and services in the **Caribbean and South American** Regions and complements the provisions of the ICAO SARPs and PANS related to MET. It contains stable plan elements related to the assignment of responsibilities to States for the provision of MET facilities and services within the ICAO **Caribbean and South American** regions 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.

1.2 The dynamic plan element related to the assignment of responsibilities to States for the provision of MET facilities and services and the mandatory requirements based on regional air navigation agreements related to MET are contained in the **CAR/SAM ANP** Volume II, Part V - MET.

1.3 The **CAR/SAM ANP** Volume III contains dynamic/flexible plan elements related to the implementation of air navigation systems and their modernization in line with the ICAO Aviation System Block Upgrades (ASBUs) methodology and associated technology roadmaps described in the Global Air Navigation Plan. The ASBU modules are aimed at increasing capacity and improving efficiency of the aviation system whilst maintaining or enhancing safety level, and achieving the necessary harmonization and interoperability at regional and global level. This includes the regionally agreed ASBU modules applicable to the specified ICAO region/sub-region and associated elements/enablers necessary for the monitoring of the status of implementation of these ASBU modules.

#### *Standards and Recommended Practices and Procedures for Air Navigation Services*

1.4 The SARPs and PANS and related guidance material applicable to the provision of MET are contained in:

- a) Annex 3 — *Meteorological Service for International Air Navigation*;
- b) *Regional Supplementary Procedures* (Doc 7030);
- c) *Handbook on the IAVW* (Doc 9766);
- d) *Manual on Volcanic Ash, Radioactive Material and Toxic Chemical Clouds* (Doc 9691);
- e) *Manual of Aeronautical Meteorological Practice* (Doc 8896);

#### 2. GENERAL REGIONAL REQUIREMENTS

##### *World area forecast system (WAFS) and meteorological offices*

2.1 In the **Caribbean and South American** Regions, WAFC **Washington** has been designated as the centre for the operation of the aeronautical fixed service satellite distribution system / WAFS Internet File Service (SADIS and/or WIFS) and the Internet-based Secure SADIS FTP service. The status of implementation of SADIS/WIFS by States in the **Caribbean and South American** Regions is detailed in Volume III.

2.2 In the **Caribbean and South American** Regions, WAFS products in digital form should be disseminated by WAFC **Washington** using the SADIS 2G satellite broadcast and the Secure SADIS FTP service and/or WIFS.

*Volcanic Ash*

2.3 Volcanic ash advisory centres (VAACs) **Buenos Aires, Washington and Wellington** have been designated to prepare volcanic ash advisory information for the **Caribbean and South American** Regions, as indicated below. The status of implementation of volcanic ash advisory information is detailed in Volume III.

2.4 Selected State volcano observatories have been designated for notification of significant pre-eruption volcanic activity, a volcanic eruption and/or volcanic ash in the atmosphere for the **Caribbean and South American** Regions to their corresponding ACC/FIC, MWO and VAAC, as indicated at [Table MET I-1](#). The status of implementation of volcano observatory notice for aviation (VONA) is detailed in Volume III.

*Tropical Cyclone*

2.5 Tropical cyclone advisory centre (TCAC) **Miami** has been designated to prepare tropical cyclone advisory information for the **Caribbean and South American** Regions, as indicated below. The status of implementation of tropical cyclone advisory information is detailed in Volume III.

### 3. SPECIFIC REGIONAL REQUIREMENTS

3.1 None

**TABLE MET I-1 - STATE VOLCANO OBSERVATORIES**  
**Explanation of the Table**

**Column**

- 1** Name of the State responsible for the provision of a volcano observatory  
**2** Name of the volcano observatory

State	Volcano observatory
1	2
<b>Argentina</b>	Servicio Geológico Minero Argentino, SEGEMAR, Buenos Aires
<b>Chile</b>	Southern Andes Volcano Observatory (SAVO), Departamento de Ciencias Físicas, Temuco
	Servicio Nacional de Geología y Minería (SERNAGEOMIN), Santiago
<b>Colombia</b>	Servicio Geológico Colombiano, Observatorios Vulcanológicos y Sismológicos de Manizales, Popayán y Pasto
<b>Costa Rica</b>	Observatorio de Volcanes y Sismológico de Costa Rica, (OVSICORI-UNA), Heredia
<b>Ecuador</b>	Instituto Geofísico y Sismológico, Quito
<b>El Salvador</b>	Servicio Nacional de Estudios Territoriales (SNET), Ministerio de Medio Ambiente y Recursos Naturales, (MARN), El Salvador
<b>French Antilles (France)</b>	Observatoire volcanologique de la Soufriere, Guadeloupe
	Observatoire volcanologique de la Pelée, Martinique
<b>Guatemala</b>	INSIVUMEH Sección Vulcanología, Ciudad de Guatemala
<b>Guyana</b>	Guyana Geology and Mines Commission
<b>Mexico</b>	Centro Nacional de Prevención de Desastres (CENAPRED)
	Centro Universitario de Investigaciones en Ciencias del Ambiente, Universidad de Colima
	Instituto de Geofísica, UNAM Observatorio de volcanes, Universidad de Colima
<b>Montserrat (U.K.)</b>	Montserrat Volcano Observatory
<b>Nicaragua</b>	Dirección General del Inst. Nicaragüense de Estudios Territoriales (INETER), Dirección de Vulcanología, Managua
<b>Panama</b>	Instituto de Geociencias
<b>Peru</b>	Instituto Geofísico del Perú (IGP), Arequipa
<b>Trinidad and Tobago</b>	Seismic Research Unit, University of Indies, St. Augustine

## CAR/SAM ANP, VOLUME I

### PART VI - SEARCH AND RESCUE (SAR)

#### 1. INTRODUCTION

1.1 This part of the **CAR/SAM ANP** constitutes the agreed regional requirements considered to be the minimum necessary for effective planning and implementation of search and rescue (SAR) facilities and services in the **Caribbean and South American** regions and complements the provisions of the ICAO SARPs and PANS related to SAR. It contains stable plan elements related to the assignment of responsibilities to States for the provision of SAR facilities and services within the ICAO **Caribbean and South American** regions 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.

1.2 The dynamic plan elements related to the assignment of States' responsibilities for the provision of SAR facilities and services and the mandatory requirements based on regional air navigation agreements related to SAR are contained in the **CAR/SAM ANP** Volume II, Part VI – SAR.

#### *Standards and Recommended Practices and Procedures for Air Navigation Services*

1.3 The SARPs and PANS and related guidance material applicable to the provision of SAR are contained in:

- a) Annex 12 — *Search and Rescue*;
- b) Annex 6 — *Operation of Aircraft*;
- c) *Procedures for Air Navigation Services — Air Traffic Management* (PANS-ATM) (Doc 4444);
- d) *Regional Supplementary Procedures* (Doc 7030); and
- e) *International Aeronautical and Maritime Search and Rescue Manual* (Doc 9731-AN/958).

#### 2. GENERAL REGIONAL REQUIREMENTS

2.1 Each Contracting State should ensure that the provision of search and rescue services covers its own territory and those areas over the high seas for which it is responsible for the provision of those services. The description of the current Search and Rescue Regions (SRRs), as approved by the ICAO Council, are contained in [Table SAR I-1](#) and depicted in the **Chart SAR I-1**. The list of Rescue Coordination Centres (RCCs) and Rescue Sub-centres (RSCs) in the Region(s) are detailed in Volume II.

2.2 The three volumes of the *IAMSAR Manual* (Doc 9731) provide guidance for a common aviation and maritime approach to organizing and providing SAR services. States are invited to use the *IAMSAR Manual* to ensure the availability of effective aeronautical SAR services and to cooperate with neighbouring States.

2.3 States which rely on military authorities and/or other sources for the provision of SAR facilities should ensure that adequate arrangements are in place for coordination of SAR activities between all entities involved.

2.4 Arrangements should be made to permit a call on any national services likely to be able to render assistance on an ad-hoc basis, in those cases when the scope of SAR operations requires such assistance.

**3. SPECIFIC REGIONAL REQUIREMENTS**

3.1 None

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**TABLE SAR I-1 – SEARCH AND RESCUE REGIONS (SRR) OF THE CAR/SAM REGIONS**
**EXPLANATION OF THE TABLE**

Column:

- 1 Name of the SRR
- 2 Description of SRR lateral limits;
- 3 Remarks — additional information, if necessary.

<b>SRR</b>	<b>Lateral limits coordinates</b>	<b>Remarks</b>
<b>1</b>	<b>2</b>	<b>3</b>
<b>Amazonica</b>	<b>SRR Amazonica</b> <i>To be incorporated</i>	
<b>Antofagasta</b>	<b>SRR Antofagasta</b> <i>To be incorporated</i>	
<b>Asuncion</b>	<b>SRR Asuncion</b> <i>To be incorporated</i>	
<b>Atlantico</b>	<b>SRR Atlantico</b> <i>To be incorporated</i>	
<b>Barranquilla</b>	<b>SRR Barranquilla</b> <i>To be incorporated</i>	
<b>Bogota</b>	<b>SRR Bogota</b> <i>To be incorporated</i>	
<b>Brasilia</b>	<b>SRR Brasilia</b> <i>To be incorporated</i>	
<b>Cayenne</b>	<b>SRR Cayenne</b> <i>To be incorporated</i>	
<b>Central American</b>	<b>SRR Central American</b> <i>To be incorporated</i>	
<b>Comodoro Rivadavia</b>	<b>SRR Comodoro Rivadavia</b> <i>To be incorporated</i>	

<b>SRR</b>	<b>Lateral limits coordinates</b>	<b>Remarks</b>
<b>1</b>	<b>2</b>	<b>3</b>
<b>Cordoba</b>	<b>SRR Cordoba</b> <i>To be incorporated</i>	
<b>Curaçao</b>	<b>SRR Curaçao</b> <i>To be incorporated</i>	
<b>Curitiba</b>	<b>SRR Curitiba</b> <i>To be incorporated</i>	
<b>Ezeiza</b>	<b>SRR Ezeiza</b> <i>To be incorporated</i>	
<b>Georgetown</b>	<b>SRR Georgetown</b> <i>To be incorporated</i>	
<b>Guayaquil</b>	<b>SRR Guayaquil</b> <i>To be incorporated</i>	
<b>Habana</b>	<b>SRR Habana</b> <i>To be incorporated</i>	
<b>Houston Oceanic</b>	<b>SRR Houston Oceanic</b> <i>To be incorporated</i>	
<b>Iquique</b>	<b>SRR Iquique</b> <i>To be incorporated</i>	
<b>Isla de Pascua</b>	<b>SRR Isla de Pascua</b> <i>To be incorporated</i>	
<b>Kingston</b>	<b>SRR Kingston</b> <i>To be incorporated</i>	
<b>La Paz</b>	<b>SRR La Paz</b> <i>To be incorporated</i>	

<b>SRR</b>	<b>Lateral limits coordinates</b>	<b>Remarks</b>
<b>1</b>	<b>2</b>	<b>3</b>
<b>Lima</b>	<b>SRR Lima</b> <i>To be incorporated</i>	
<b>Maiquetia</b>	<b>SRR Maiquetia</b> <i>To be incorporated</i>	
<b>Mazatlan Oceanic</b>	<b>SRR Mazatlan Oceanic</b> <i>To be incorporated</i>	
<b>Mendoza</b>	<b>SRR Mendoza</b> <i>To be incorporated</i>	
<b>Mexico</b>	<b>SRR Mexico</b> <i>To be incorporated</i>	
<b>Miami Oceanic</b>	<b>SRR Miami Oceanic</b> <i>To be incorporated</i>	
<b>Montevideo</b>	<b>SRR Montevideo</b> <i>To be incorporated</i>	
<b>Nassau</b>	<b>SRR Nassau</b> <i>To be incorporated</i>	
<b>New York Oceanic West</b>	<b>SRR New York Oceanic West</b> <i>To be incorporated</i>	
<b>Panama</b>	<b>SRR Panama</b> <i>To be incorporated</i>	
<b>Piarco</b>	<b>SRR Piarco</b> <i>To be incorporated</i>	
<b>Port-au-Prince</b>	<b>SRR Port-au-Prince</b> <i>To be incorporated</i>	
<b>Puerto Montt</b>	<b>SRR Puerto Montt</b> <i>To be incorporated</i>	

<b>SRR</b>	<b>Lateral limits coordinates</b>	<b>Remarks</b>
<b>1</b>	<b>2</b>	<b>3</b>
<b>Punta Arenas</b>	<b>SRR Punta Arenas</b> <i>To be incorporated</i>	
<b>Recife</b>	<b>SRR Recife</b> <i>To be incorporated</i>	
<b>Resistencia</b>	<b>SRR Resistencia</b> <i>To be incorporated</i>	
<b>San Juan</b>	<b>SRR San Juan</b> <i>To be incorporated</i>	
<b>Santiago</b>	<b>SRR Santiago</b> <i>To be incorporated</i>	
<b>Santo Domingo</b>	<b>SRR Santo Domingo</b> <i>To be incorporated</i>	
<b>Zanderij</b>	<b>SRR Zanderij</b> <i>To be incorporated</i>	

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**CAR/SAM ANP, VOLUME I****PART VII - AERONAUTICAL INFORMATION MANAGEMENT (AIM)****1. INTRODUCTION**

1.1 This part of the **CAR/SAM ANP** constitutes the agreed regional requirements considered to be the minimum necessary for effective planning and implementation of aeronautical information services (AIS) and aeronautical information management (AIM) facilities and services in the **Caribbean and South American** regions and complements the provisions of the ICAO SARPs and PANS related to AIS/AIM. It contains stable plan elements related to the assignment of responsibilities to States for the provision of AIS/AIM facilities and services within the ICAO **Caribbean and South American** Regions 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.

1.2 The dynamic plan elements related to the assignment of responsibilities to States for the provision of AIS/AIM facilities and services and the mandatory requirements based on regional air navigation agreements related to the AIS/AIM facilities and services are contained in the **CAR/SAM ANP** Volume II, Part VII – AIM.

1.3 The **CAR/SAM ANP** Volume III contains dynamic/flexible plan elements related to the implementation of air navigation systems and their modernization in line with the ICAO Aviation System Block Upgrades (ASBUs) methodology and associated technology roadmaps described in the Global Air Navigation Plan. The ASBU modules are aimed at increasing capacity and improving efficiency of the aviation system whilst maintaining or enhancing safety level, and achieving the necessary harmonization and interoperability at regional and global level. This includes the regionally agreed ASBU modules applicable to the specified ICAO region/sub-region and associated elements/enablers necessary for the monitoring of the status of implementation of these ASBU modules, which include service improvement through digital aeronautical information management interoperability and data through globally interoperable system wide information management (SWIM).

***Standards and Recommended Practices and Procedures for Air Navigation Services***

1.4 The SARPs and PANS and related guidance material applicable to the provision of AIS, and ultimately AIM, are contained in:

- a) Annex 4 — *Aeronautical Charts*;
- b) Annex 15 — *Aeronautical Information Services*;
- c) *Regional Supplementary Procedures* (Doc 7030);
- d) *Aeronautical Information Services Provided by States* (Doc 7383);
- e) *Location Indicators* (Doc 7910);
- f) *Aeronautical Information Services Manual* (Doc 8126);
- g) *Procedures for Air Navigation Services – Aircraft Operations – Construction of Visual and Instrument Flight Procedures* (PANS-OPS, Volume I and Volume II) (Doc 8168);
- h) *ICAO Abbreviations and Codes* (PANS-ABC) (Doc 8400);
- i) *Aeronautical Charts Manual* (Doc 8697);

- j) *Manual on Coordination between Air Traffic Services, Aeronautical Information Services and Aeronautical Meteorological Services* (Doc 9377);
- k) *World Geodetic System (1984) Manual* (Doc 9674);
- l) *Guidelines on the Use of the Public Internet for Aeronautical Applications* (Doc 9855);
- m) *Guidelines for Electronic Terrain, Obstacle and Aerodrome Mapping Information* (Doc 9881);
- n) *Flight Procedure Design Quality Assurance System, Volume I* (Doc 9906);
- o) “*AIM QMS Manual*” (Doc 9839); and
- p) “*Training Manual for AIM*” (Doc 9991).

## **2. GENERAL REGIONAL REQUIREMENTS**

2.1 States should ensure that the provision of aeronautical data and aeronautical information covers its own territory and those areas over the high seas for which it is responsible for the provision of air traffic services, in accordance with **Charts ATM I-1 and ATM I-2**.

2.2 States are responsible for the aeronautical information/data published by its aeronautical information service or by another State or a non-governmental agency on its behalf.

2.3 Aeronautical information published for and on behalf of a State should clearly indicate that it is published under the authority of that State.

2.4 The responsibility for the provision of AIS/AIM facilities and services in the **Caribbean and South American** Regions is reflected in the Volume II.

## **3. SPECIFIC REGIONAL REQUIREMENTS**

3.1 None