

**INTERNATIONAL CIVIL AVIATION ORGANIZATION
NORTH AMERICAN, CENTRAL AMERICAN AND CARIBBEAN OFFICE**

**FOURTH MEETING OF DIRECTORS OF CIVIL AVIATION
OF THE CENTRAL CARIBBEAN**

(Grand Cayman, Cayman Islands, 17 – 20 May 2000)

Agenda Item 2: CAR/SAM/3 RAN results on:

d) AIS matters

(Presented by the Secretariat)

Summary

This Working Paper outlines the will present to the Meeting the results obtained, within AIS services, at the CAR/SAM/3 Regional Air Navigation Meeting, held in Buenos Aires, Argentina, from 5 to 15 October 2000.

1. INTRODUCTION

1.1 This Working Paper will revise the issues, conclusions, and recommendations discussed in Agenda Item 12, **Aeronautical information services and aeronautical charts**, from the Third Caribbean/South American Regional Air Navigation Meeting.

1.2 One of the most relevant issues during the CAR/SAM/3 RAN Meeting was the repercussion that CNS/ATM Systems has in the requirements that AIS services have, including the increase of quality in aeronautical information as well as the technology that is used to supply the information. This criterion will give the basis for the evolution within AIS/MAP services.

1.3 All recommendations and conclusions from the AIS Matters discussed in Agenda Item 12 at the CAR/SAM/3 RAM Meeting, are attached to this Working Paper as **Appendix A**.

2. DISCUSSION

2.1 The AIS Committee from the CAR/SAM/3 RAN Meeting considered that in order to support ATM requirements it is necessary to:

- a) implement a quality system;
- b) implement the WGS-84 system in order to support RNAV operations;
- c) supply and exchange aeronautical information/data through advanced electronic media, including the link that allows the consultation of aeronautical databases from the cockpit; and
- d) supply and exchange of aeronautical information in real time through electronic media guaranteeing the quality and integrity of the information (Quality assurance)

2.2 In order to support implementation of the future CNS/ATM systems, States should make every effort to implement WGS-84 and provide geographical coordinates referenced to this system. A detailed description/list of the WGS-84 coordinate data to be provided by States in order to fulfill the requirements of the Basic ANP is contained in the CAR/SAM facilities and Services Implementation Document (FASID).

2.3 States which have not done so should make the necessary arrangements to develop a national WGS-84 Implementation Plan and such a plan should contain a timetable for implementation. When developing a national WGS-84 plan, States should establish a committee composed of personnel from the appropriate aeronautical as well as from the geographic/geodetic departments of the State. Such a committee should be tasked with the management of the WGS-84 implementation plan.

2.4 States should increase their efforts to complete the implementation of the WGS-84 System by concentrating their efforts in the following:

- a) determination of the ATC and aerodromes configuration;
- b) topographic surveys and conversion of all geographical coordinates that are needed in air navigation;
- c) introduction and application of a quality system; and
- d) publication of WGS-84 coordinates in the AIP and in the pertinent aeronautical charts.

2.5 With regards to aeronautical charts the GREPECAS/8 Meeting, adopted the following Conclusions:

Conclusion 8/1: This Conclusion calls for the ICAO NACC and SAM Regional Offices to present to the GREPECAS/9 Meeting an initial report on the level of production of aeronautical charts by CAR/SAM States using the WGS-84 System.

Conclusion 8/4: Due to the difficulties faced by the CAR/SAM States to produce the aeronautical charts according with the specification of ICAO Annex 4, and with a view to effectively complying , as soon as possible, with the planning and production of aeronautical charts, the Administrations should take into consideration the material included in the Appendix C of the GREPECAS/8 Report and added to this WP as **Appendix B**, that contains the comments on causes affecting the production by some CAR/SAM States of specific aeronautical charts.

3. AIS AUTOMATION

3.1 Since aeronautical information/data might be altered or erroneous, the requirement of a quality system that allows more precision, resolution, and integrity in the supply of information was incorporated in Annex 15. The quality specifications have been prepared under the standards of the 9000 series of the International Standard Organization (ISO). ICAO has considered preparing all suitable documentation, as well as a Technical Co-operation programme in order to implement an AIS/MAP quality system in the States/Territories of the Region.

3.2 In order to improve all AIS/MAP personnel, it is necessary to give licenses in order to have properly qualified specialists in AIS services. This is a key element to accomplish quality assurance, since properly trained human resources is vital for the system; therefore there must be new ICAO training programmes for AIS/MAP personnel.

3.3 In the application of Standards and Recommended Practices (SARPS) that appear in both Annex 4 and Annex 15, the importance of AIS Automation is acknowledged for the exchange and recovery of information with quality assurance. Also, it is important to acknowledge the new methodology and structure, that has been adopted for the ANP and the FASID, which embraces the new procedures and requirements for the facilities and services of Air Navigation.

3.4 AIS automation should offer a service to meet the individual requirements of the various categories of users. This goes beyond the provision of pre-processed data and the pre-flight bulletin types traditionally provided manually or by early automated systems. For reasons of cost effectiveness, such a service should strike a balance between the degrees of complexity of the system required and the sophistication of the products provided.

3.5 Regarding AIS Automation, GREPECAS/8 adopted the following Conclusion:

Conclusion 8/5 The GREPECAS/8 Meeting took note of the follow up actions given by the AIS/SG regarding the status of implementation by the States of the National and Regional AIS Data Banks (NASC and RASC) in the CAR/SAM Regions, and pointed out the need to take prompt actions to meet operational requirements. To this objective, the Conclusion 8/5 was developed to demand that the respective Regional Offices include in their programmes of activities for 1999-2000, the organization of a meeting to coordinate the actions for the implementation of the **Integrated Automated AIS System** in the CAR/SAM Regions; and to study the advisability of preparing Special Implementation Projects (SIPs) to this end. In addition, the Conclusion 8/5 demands States to take the measures for acquiring the necessary equipment for setting up Data Banks in their respective International NOTAM Offices.

3.6 The CAR/SAM/3 RAN Meeting, also examined the Integrated Aeronautical Information Package and the status of the AIRAC System in the CAR/SAM Region in comparison with the conclusions from the CAR/SAM/2 RAN Meeting. It was observed that these issues require maximum attention from States in order to give more efficiency and quality in the published information. The Meeting urged States who still have their AIPs in the old format, to strengthen their efforts and adopt the necessary procedures in order to publish the restructured AIP. To this end, the table FASID AIS-8 establishes the uniform requirements for all CAR/SAM States and this will give a practical tool to States in order to apply all requirements.

3.7 In the aeronautical charts issue, the Meeting insisted on the requirements for aeronautical charts by following the SARPS from Annex 4, the BORPC and the requirements established by the CAR/SAM ANP, currently States are not following the specifications from Annex 4 and therefore some of them are not publishing charts. It is highly important that States and cartographic organizations cooperate together to publish aeronautical maps and charts by adhering to the established regulations.

3.8 Regarding CNS/ATM Systems, there is a need of a higher quality, protection and timely provision of aeronautical information/data, which is only possible through the implementation of the automated AIS services. This automation should be progressive and it should follow the approved Regional Plan, so it can allow the development of an automated AIS system for the CAR/SAM Regions, as indicated in the AIS/MAP, Part VIII from the CAR/SAM ANP.

3.9 The adoption of a new scope of the Aeronautical Information Services concept, by integrating the AIS/MET information for pre-flight and en route flights for automatic provision, including both the electronic AIP and electronic aeronautical charts. This issue was transmitted to the AIS Subgroup's consideration.

4. **SUGGESTED ACTIONS**

4.1 The Meeting is invited to take into account the information presented in this working paper and to adopt the corresponding actions so that each State (or groups of States) and International Organizations in the Central Caribbean:

- a) implement the relevant conclusions and recommendations of the CAR/SAM/3 RAN Meeting;
- b) review the corresponding parts of the approved Basic ANP and FASID and in order to keep them updated, present to the ICAO Regional Office the necessary proposals for amendments, additions and deletions; and
- c) implement, so as to achieve international requirements established in the CAR/SAM Regions Basic ANP and FASID, the necessary measures for improving the efficiency and safety of air navigation in the Central Caribbean Region.

- END -

APPENDIX A

**LIST OF CONCLUSIONS ON AGENDA ITEM 12
CAR/SAM/3 RAN MEETING**

Conclusion 12/1 Implementation of Quality System

That:

- \$ States take appropriate measures to implement and maintain the quality system for aeronautical information and charts services; and
- \$ ICAO assist States in implementing the quality system in their AIS/MAP services through development of guidance material, training programmes, seminars/workshops, missions and technical assistance/cooperation.

Conclusion 12/2 Development of ICAO training guidelines for AIS/MAP personnel

That, ICAO, as a matter of urgency, update Part E-3 of the Training Manual (Doc 7192) and develop updated ICAO AIS/MAP training guidelines, including a syllabus model, to assist States in the development of an AIS/MAP training programme.

Conclusion 12/3 Implementation of SARPs contained in Annexes 4 and 15 and follow-up of status of implementation in AIS and MAP services

That the ICAO CAR and SAM Regional Offices:

- a) provide for an effective method to monitor the status of implementation of the SARPs of Annexes 4 and 15 in the regions;
- b) consider the provision of regional seminars/workshops, to explain the critical parts of the provisions in Annexes 4 and 15;
- c) provide follow-up surveys of the provision of aeronautical information and charts facilities and services by States in the area considered by the meeting, with a view to identifying any shortcomings;
- d) include the status of implementation in the CAR/SAM FASID, Part VIII, AIS/MAP for continuous review by the CAR/SAM Regional Planning and Implementation Group (GREPECAS); and
- e) present the results of the surveys to the GREPECAS for its consideration and action, as appropriate.

Conclusion 12/4 Assistance to States on implementation of the integrated aeronautical information package and use of the AIRAC system

That ICAO Regional Offices concerned:

- a) intensify monitoring the status of implementation of the Integrated Aeronautical Information Package;
- b) intensify monitoring of the implementation of the AIRAC system and particularly in those cases when AIRAC information requires coordination between the States concerned for publication of information on the commonly agreed effective date;
- c) advise on, or provide assistance to States with implementation; and
- d) plan, prepare and conduct AIS Special Implementation Projects, AIS courses, seminars and workshops as a means to support States in implementing the requirements of Annex 15.

Conclusion 12/5 Development of the FASID Table AIS-4

That ICAO:

- a) develop new FASID Table AIS-4 which would, in accordance with the traffic flow, set out the requirements for the availability of aeronautical information at international aerodromes in the CAR/SAM Regions from other States; and
- b) make the developed draft FASID Table AIS-4 available to the CAR/SAM Regional Planning and Implementation Group (GREPECAS) for review and continuous updating, as required.

Conclusion 12/6 Assistance to States on implementation of WGS-84

That ICAO Regional Offices concerned, as a matter of high priority, obtain information from States which have not yet implemented WGS-84 in the CAR/SAM Regions as to what implementation difficulties they are facing on which basis evaluation and planning of the required assistance to those States could be made.

Conclusion 12/7 Development of technical requirements for CAR/SAM AIS Data Base (CASADAB) by GREPECAS.

That GREPECAS be requested to study the development of CAR/SAM AIS Data Base (CASADAB) based on the General Concept for an AIS Data Base Project contained in Appendix C to the report on Agenda Item 12.

Recommendation 12/8 Part VIII – AIS/MAP of the draft CAR/SAM Basic Air Navigation Plan (ANP)

That Appendix A to the report on Agenda Item 12 constitute Part VIII – AIS/MAP of the Basic Air Navigation Plan - Caribbean and South American Regions.

Recommendation 12/9 Part VIII – AIS/MAP of the draft CAR/SAM Facilities and Services Implementation Document (FASID)

That Appendix B to the report on Agenda Item 12 constitute Part VIII – AIS/MAP of the Facilities and Services Implementation Document - Caribbean and South American Regions.

APPENDIX B TO WP/6

GREPECAS/8

**COMMENTS ON CAUSES AFFECTING THE PRODUCTION BY SOME
CAR/SAM STATES OF SPECIFIC AERONAUTICAL CHARTS**

Instrument approach charts

As indicated in this working paper, the main difficulty observed in the production of this series of charts is lack of a standardized production by part of the CAR/SAM States, recognizing that this lack of standardization hinders the tasks of the flight crews, and could be the cause for risk in the safety of air operations. The main reason for this lack of standardization is the fact that two branches within the civil aviation administrations intervene in their preparation, i.e. the Procedures and Aeronautical Charts Offices. In this regard, States should be recommended to clearly define the responsibilities and functions of each of these units, which would be as follows hereunder.

Procedures Office:

It should be in direct charge of the elaboration and calculus of the procedures for their editorial publication.

Aeronautical Charts Office:

It should be in charge of the preparation of instrument approach charts as per requirements in ICAO Annex 4, and in accordance with the models of the charts recommended in ICAO Document 8697 (Aeronautical Charts Manual).

Aerodrome/Heliport Charts - ICAO

As indicated in this working paper, and in addition to the other indicated factors, the main difficulty in the production of this series of charts is lack of updating of the format and, as consequence, pertinent information is not provided according to requirements. The main motive for the above indicated deficiency is the lack of operational capacity of the Aeronautical Charts Offices to comply with this requirement, since no technical difficulties exist for its achievement. In this regard, States should be advised on the need to reinforce their support to the aeronautical charts units in order that these are capable to assume their responsibility in an efficient manner.

**Aerodrome Obstacle Charts - ICAO, Type A
Utilization Limitations
Aerodrome Obstacle Charts, ICAO, Type C**

In addition to other factors indicated, the main difficulty for the production of this series of charts is the lack of adequate field surveys, mainly with regard to the precise location of obstacles affecting operations, as per the objective of these charts. Also, many civil aviation administrations of the CAR/SAM Regions do not count with specialized departments in charge of these field surveys to cover the entire airport infrastructures, do not have cooperation agreements signed with national geographic institutes for the carrying out of these activities, nor specific programmes for the hiring of private companies. Since it is most urgent that States attend in an efficient and precise manner the production of the aerodrome obstacle charts, they should be alerted in order to establish an efficient mechanism dedicated to regularly attend the above described requirements.

Factors affecting the production of aeronautical charts in general

Another problem added to those mentioned in the above paragraphs is the lack of personnel training in aeronautical cartography. On the matter, it has also been observed that in the CAR/SAM Regions there are no training centres that qualify or specialize personnel for the making of aeronautical charts. Lack of economical resources assigned by civil aviation administrations for the acquisition of necessary equipment to obtain an adequate development for this activity, as well as no hiring of private services oriented towards the preparation of the required aeronautical charts, are to be added to these hindrances. In consequence, it is recognized that the referred difficulties are significantly affecting the efficient production of aeronautical charts in the CAR/SAM Regions.
