

**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 6: AIS Plans

b) Review of the progress in the WGS-84 System Implementation

(Presented by the Secretariat)

Summary

This Working Paper will inform the Meeting the status of the progress on the WGS-84 System Implementation and will emphasize the importance for States to complete, as soon as possible, the implementation of this system.

1. Introduction

1.1 In order to implement CNS/ATM Systems, it is essential that the WGS-84 System is fully completed by States. To this end, several actions have been carried out in order to finalize the implementation of the WGS-84 System, the ICAO NACC Regional Office has been following up AIS tasks that specifically coordinate the WGS-84 System Implementation in the CAR Region States. In addition, two Seminars related to this issue were presented, the first one in Central America and the second one in the Caribbean.

1.2 On the other hand, some States in the Region have taken important measures regarding this issue, Cuba, for instance; through Conclusion 3/10 (See **Appendix A**) from the Third Meeting of Central Caribbean Directors of Civil Aviation, promoted a Technical Co-operation Agreement between Aeronautical Authorities and Geographic/Geodetic Agencies; and from this particular Conclusion, Cuba obtained important benefits.

2. Discussion

2.1 *Actions for the WGS-84 System Implementation in the CAR Region*

2.1.1 Two important projects were carried out in the Region; the National Geodetic Survey (NGS) supported one of them in order to survey PACS and SACS in nineteen States from the Central and Eastern Caribbean Region. The second one was the LACAC/TDA Technical Co-operation project, which was carried out in Central America (Belize, Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua) and Mexico, these States were also surveyed in PACS and SACS and some additional aerodrome points

2.1.2 Regarding the CNS/ATM Implementation and in order to assist States regarding WGS-84, the ICAO NACC Regional Office has organized Seminars which are mainly oriented towards the understanding and emphasis that the WGS-84 Implementation has in Civil Aviation. The most important objective of organizing these sort of events is to give assistance to States regarding every detail and descriptive guides that are related to WGS-84 coordinates and surveys, and this will eventually assist States to comply with the Annexes 4, 11, 14, 15 and Doc. 9674 (World Geodetic System, 1984). Two Seminars have been held, one in El Salvador in November 1999, and the second one in Port-of-Spain, Trinidad and Tobago in April 2000.

2.1.3 Both WGS-84 Seminars were coordinated with the Federal Aviation Administration (FAA) from the United States, who contributed with several experts specialized in geodesy and related issues.

2.1.4 The WGS-84 Seminar/Workshop held in Trinidad, was attended by more than 50 specialists, and among them, the following Central Caribbean States attended: Anguila, Bahamas, Barbados, Cayman Islands, Cuba, Grenada, Haiti and Jamaica (The Dominican Republic attended to the Seminar for Central America). This Seminar had several presentations from the FAA and ICAO, and the technical topics that were discussed in these presentations helped participants to understand that it is necessary that Aeronautical and Geodetic Authorities collaborate together in order to fully implement the WGS-84 System.

2.1.5 From this Seminar important Recommendations were proposed by the specialists who attended and are listed herewith:

- a) To give technical assistance and training related to Aeronautical Charts through an Agreement with NIMA and those States who are interested on developing cooperation agreements among aeronautical authorities and cartographic agencies in order to produce charts based on the WGS-84 System.
- b) That PIARCO join Regional efforts in order to finish the process of implementation of the WGS-84 System.
- c) That those specialists who attended the Seminar/Workshops follow up the implementation process and to consider that in the future it will be necessary to verify, on a regular basis, the integrity of the data and the geodesic network.

- d) Present the need to create a programme to have more Meetings and/or Seminars in joint coordination with the FAA.
- e) Considering the technical and professional dependency that Aeronautical Information Services will have within the Region, give the necessary support to PIARCO to expand its Website and supply information related to the WGS-84 surveys and all information needed from States. In the same manner, to support States and their corresponding cartographical agencies to use the Internet resources.
- f) It was suggested that PIARCO establish and maintain, as part of the training programme, all their technicians and experts trained in the PANS-OPS procedures. For instance, seminars could be given on a regular basis in their training facilities in order to maintain States updated and to inform them when new technologies are introduced or amendments are made to the PANS-OPS.

3. **Conclusion**

3.1 Considering the importance of giving continuity to the WGS-84 System Implementation in the Central Caribbean States, the Meeting should note that several ATS points are yet to be determined using WGS-84 coordinates, such as FIR coordinates, En route points and Terminal Areas. Therefore, there is a need to increase efforts to comply with the WGS-84 Implementation as well as with the production of aeronautical charts that are produced with this System. The tables that include the List of requirements are included in this Working Paper as **Appendix B**.

3.2 It is also important that C/CAR States acknowledge the experience that Cuba has in the application of a Technical Co-operation agreement between Aeronautical Authorities and Geodetic/Cartographic Agencies.

3.3 Taking the aforementioned into account, the Meeting is requested to adopt the following Conclusion:

CONCLUSION 4/XX FINALIZATION OF THE WGS-84 SYSTEM IMPLEMENTATION IN THE CENTRAL CARIBBEAN STATES/TERRITORIES

That Central Caribbean States/Territories,

- a) establish bilateral or multilateral Technical Co-operation agreements with other States in order to comply with the complete WGS-84 System implementation;
- b) Coordinate with the adjacent FIR States to determine common coordinates in the WGS-84 System and later publish them; and
- c) Consider that in order to have an effective application of WGS-84 coordinates it is necessary to publish them in the AIP.

4. **Suggested Actions**

4.1 That the Meeting analyze the contents of this Working Paper and provide the material and resources needed to support the finalization of the WGS-84 System Implementation.

4.2 The Meeting is invited to adopt the Conclusion contained in paragraph 3.2 of this Working Paper.

APPENDIX A

Conclusion 3/10: Cooperation Agreement between Aeronautical Geographic/Geodetic Authorities

That the C/CAR States:

- a) promote and establish coordination, as well as an agreement between the national Aeronautical Authorities and the Geographic/Geodetic Authorities, based on the example of the Appendix A and the experience that Cuba has obtained, in order to continue with the transformation of the rest of WGS-84 coordinates, needed to complete the implementation of such world geodetic system in its respective States/Territories;
- b) take measures to incorporate to the corresponding AIPs the verified WGS-84 data, in order to give official validation to the WGS-84 coordinates already determined in the C/CAR States/Territories;
- c) with common boundaries coordinate the WGS-84 Data, prior to publishing in the corresponding AIPs; and
- d) consider that the Agreement mentioned in a) above will allow domestic personnel to acquire knowledge and experience for maintenance and future update of the established data in the WGS-84 world system.