



International Civil Aviation Organization

NORTH AMERICAN, CENTRAL AMERICAN AND CARIBBEAN OFFICE

**Twenty-Seventh Eastern Caribbean Informal Working Group Meeting
(27TH E/CAR IWG)**

St. John's, Antigua and Barbuda, 21 to 25 July 2003

27TH E/CAR IWG-WP/09

8/07/03

Agenda Item 3: Specific Air Navigation Activities and Developments
3.6 Communications, Navigation and Surveillance (CNS)

**FOLLOW-UP AND COORDINATION FOR THE IMPLEMENTATION OF CNS SYSTEMS IN
THE EASTERN CARIBBEAN**

(Working Paper presented by the Secretariat)

SUMMARY

This working paper proposes for consideration by the E/CAR IWG actions for the follow-up and coordination of the improvement and implementation of the Communications, Navigation and Surveillance systems in the Eastern Caribbean.

REFERENCES

- Report of the Twenty-Fifth Eastern Caribbean Informal Working Group Meeting. (Grenada, 7 – 11 May 2001)
- Report of the Twenty-Sixth Eastern Caribbean Informal Working Group Meeting. (Barbados, 3 – 7 June 2002)
- Report of the Seventeenth Meeting of Directors of Civil Aviation of the Eastern Caribbean. (Port of Spain, 4 – 7 December 2001).
- Report of the First North American, Central America and Caribbean Directors of Civil Aviation Meeting (Grand Cayman, 8-11 October 2002).
- Report of the GREPECAS/11 Meeting (Manaus, Brazil, 4-8 December 2002).

1. Background

1.1 The Twenty-Fifth Eastern Caribbean Informal Working Group Meeting held in Grenada from 7 to 11 May 2001, formulated several conclusions to continue the development of the Communications, Navigation and Surveillance systems of the Eastern Caribbean, some of which are still valid and are listed hereunder with a summary of the tasks:

- Conclusion 25/10: *HF Communications in the Piarco FIR.*
- Conclusion 25/12: *Review of the VHF air-ground voice communications coverage in the Eastern Caribbean.*
- Decision 25/13: *Guidance for the work of the E/CAR Informal Working Group regarding the VHF air-ground voice communication coverage.*
- Conclusion 25/14: *Transition plan from AFTN to AMHS in the Eastern Caribbean.*

1.2 The Twenty-Sixth Eastern Caribbean Informal Working Group Meeting, held in Barbados from 3 to 7 June 2002 adopted several Conclusions to continue the development of the E/CAR AFS Digital Network and to activate the work of the E/CAR Radar Data Sharing Task Force, which are listed hereunder:

- Conclusion 26/11: *Meeting of the E/CAR AFS Digital Network between IACL Board and E/CAR.*
- Conclusion 26/12: *Network management, operations and maintenance procedures document.*
- Conclusion 26/13: E/CAR Radar Data Sharing Task Force.

1.3 Moreover, the Seventeenth Meeting of Directors of Civil Aviation of the Eastern Caribbean, held in Port of Spain, Trinidad and Tobago, from 4 to 7 December 2001, formulated Conclusion 17/4 – *Action to be taken by IACL with regard to the E/CAR AFS digital network.* This conclusion is aimed at improving and developing the management of operation, maintenance and installation of the Network.

1.4 The First North American, Central America and Caribbean Directors of Civil Aviation Meeting held in Grand Cayman, Cayman Islands, from 8 to 11 October 2002 also formulated several conclusions related with CNS development in the CAR Region. For instance, as part of Conclusion 1/1, the following main work guidelines for the CNS area were established:

- Support to ICAO position at the ITU's WRC-2003.
- Development and interconnectivity of regional digital networks.
- Improvement of and compliance with the required VHF/HF AMS coverage.
- Transition from AFTN to ATN. Implementation of ATN ground portion.
- GNSS Implementation.
- Radar data exchange.

1.5 Moreover, GREPECAS/11 Meeting, held in Manaus, Brazil, from 4 to 8 December 2002, formulated several conclusions on the development of CNS systems in the CAR/SAM Regions. Among these conclusions, which are applicable in the Eastern Caribbean, are the following:

- Conclusion 11/39: SUPPORT FOR THE ICAO POSITION AT THE ITU WRC-2003
- Conclusion 11/40: PUBLICATION OF THE THIRD EDITION OF THE “HANDBOOK ON RADIO FREQUENCY SPECTRUM REQUIREMENTS FOR CIVIL AVIATION”
- Conclusion 11/41: REVIEW OF THE STATUS OF IMPLEMENTATION OF THE AFTN PLAN AND RELEVANT AMENDMENTS
- Conclusion 11/43: USE OF PUBLIC INTERNET SERVICES FOR AERONAUTICAL PURPOSES
- Conclusion 11/44: FLIGHT INSPECTION OF GNSS NPA PROCEDURES
- Conclusion 11/45: SBAS-EGNOS TRIALS IN THE CAR/SAM REGIONS
- Conclusion 11/46: SUPPORT FOR THE CAR/SAM REGIONAL SBAS-GNSS AUGMENTATION PLAN
- Conclusion 11/47: REGIONAL GUIDELINES FOR THE EXCHANGE OF SSR RADAR DATA
- Conclusion 11/48: USE OF THE MINIMUM SAFE ALTITUDE WARNING (MSAW)
- Conclusion 11/49: REGIONAL GUIDELINES ON THE PLANNING AND IMPLEMENTATION OF RADAR SURVEILLANCE SYSTEMS

- Conclusion 11/50: PRELIMINARY REGIONAL GUIDELINES ON AUTOMATIC DEPENDENT SURVEILLANCE SYSTEMS
- Conclusion 11/54: REGIONAL ACTION ON COORDINATED POSITIONS ON CNS ISSUES AT THE AN-CONF/11

2. Discussion

2.1 According to the background expressed in paragraphs 1.1 to 1.5 of this working paper, the Meeting is invited to review the status of implementation of the main CNS issues as follows, and to review and develop the relevant subregional action plans to help the coordination and implementation of these systems.

Communications

Improvement and Management of E/CAR Digital Network

2.2 With regard to the improvement and management of the E/CAR AFS Digital Network, in WP/16 IACL is informing the Meeting on the follow-up of Conclusion 26/11 of the 26th E/CAR IWG and Conclusion 17/4 of the 17th E/CAR DCA Meeting. Therefore, the Meeting is invited to agree actions to follow-up the management and improvement plan of the E/CAR Network by the change in network platform using Frame Relay Technology. The Secretariat supports the use of Frame Relay in the E/CAR AFS Network; that will facilitate the implementation of voice and data circuits over the network and it would contribute to the interconnectivity with other regional networks, creating a regional CAR/SAM digital platform with an open architecture and facilitating the implementation of ATN and its applications.

2.3 The REDDIG (SAM Digital Network) is fully implemented using TDMA/Frame Relay Technology. Therefore, it is suggested that the Meeting should agree actions in order to begin the coordination with REDDIG for the interconnectivity between E/CAR AFS and REDDIG networks in order to improve and implement the AFS circuits between Trinidad and Tobago and SAM neighboring States.

2.4 Likewise, the MEVA/9 Meeting, held in Nassau, Bahamas, from 30 June to 2 July agreed actions to continue the MEVA II process by the implementation of TMDA/frame Relay technology that will also contribute to a regional CAR/SAM digital platform.

Review of VHF and HF AMS communications coverage

2.5 Based on GREPECAS Conclusion 10/29, on the deficiencies due to the lack of air/ground VHF coverage, and Conclusion 25/12 of the E/CAR Informal Working Group, it is expected that the members of the E/CAR IWG report to the Meeting on the improvements that were carried out and are still being carried out on VHF/AMS coverage in their respective assigned airspace. Moreover, the E/CAR IWG is invited to continue the efforts of reviewing the air-ground communications coverage concerning the requirements established in the Table CNS 2A of FASID ANP CAR/SAM. In this regard, the E/CAR IWG should undertake an in-depth analysis on air-ground VHF communications coverage in the Eastern Caribbean.

2.6 With respect to HF communication, it is reminded that the 25th E/CAR IWG studied the solutions for the deficiency in the HF Communication system in the Piarco FIR and formulated Conclusion 25/10. Also, Trinidad and Tobago published the AIP Supplement 07/03, dated 01st May 2003 informing that Piarco Radio HF Facility is temporarily supplemented by the services of New York Radio. Therefore, it is recommended that the E/CAR Informal Working Group continue the follow-up of the implementation of permanent solutions to these HF problems.

Implementation of the ATN ground portion

2.7 In accordance with GREPECAS Conclusion 10/22 item b), and with the E/CAR IWG Conclusion 25/14, the States/Territories/International Organizations, based on the SARPs on ATN/AMHS, should continue the efforts towards the implementation of the ATN ground portion, through action plans for the transition from AFTN to AMHS.

Navigation

Implementation of GNSS

2.8 In accordance with NACC/DCA/1 Meeting Conclusion 1/1 and GREPECAS Conclusion 10/32, the States/Territories/International Organizations should continue publishing and updating the legislations/regulations authorizing the use of GNSS in their respective airspace in terminal areas and en-route.

Follow-up to the SBAS Augmentation Systems trials in the CAR/SAM Regions

2.9 The E/CAR Working Group should also keep itself informed on the status and results of the SBAS/WAAS augmentation systems trials being held in the CAR/SAM Regions under the RLA/00/009 Project; as well as on the SBAS/EGNOS trials, which are initiating in the CAR/SAM Regions under the RLA/03/902 Project and on the global development of GNSS implementation, taking into account the conclusions and recommendations of GREPECAS and the available GNSS SARPs and guidance material.

Surveillance

Update of the radar surveillance Plan corresponding to the Eastern Caribbean

2.10 Information on radar systems from the other States/Territories possessing these systems is required. Then, the E/CAR Working Group may continue updating the corresponding Eastern Caribbean surveillance plan, especially the implementation of the Primary Surveillance Radar (PSR), and Secondary Surveillance Radar (SSR), including information on radar coverage. The Group is invited to take into account GREPECAS Conclusion 11/49 – *Regional Guidelines on the Planning and Implementation of radar surveillance systems*.

Radar data exchange

2.11 Likewise, in accordance with the E/CAR IWG Meeting Conclusion 26/13 and bearing in mind the “*Reviewed Regional Guidelines for the Exchange of Radar Data among ATM units*” issued by GREPECAS, through Conclusion 11/47, the States/Territories/International Organizations and the E/CAR Working Group, may review the report of the 2^d E/CAR Radar Data Sharing Task Force Meeting presented in WP/12 and IP/06, but it is important that the E/CAR RSTF continue its work taking into account the relevant GREPECAS Conclusions, such as the following Conclusion adopted by GREPECAS/11:

CONCLUSION 11/47**REGIONAL GUIDELINES FOR THE EXCHANGE OF SSR RADAR DATA**

That CAR/SAM States/International Organizations be urged to:

- a) use the Asterix protocol as a common regional protocol for the exchange of SSR radar data;*
- b) take into account the revised regional guidelines on the exchange of radar data contained in Appendices N, O and P to this part of the Report; and*
- c) establish bilateral/multilateral agreements for the exchange of radar data.*

Notes:

- 1. Appendix N – Initial Regional Guidelines on Radar Data Sharing in the CAR/SAM Regions.*
- 2. Appendix O – Information required on secondary surveillance radar (SSR) for Radar data sharing.*
- 3. Appendix P – Information required on the data processor for radar data sharing.*

Other matters related with the implementation of CNS systems

2.12 Additionally, the E/CAR Informal Working Group may follow-up coordination and implementation of other matters related with the CNS systems foreseen in the Regional CAR/SAM Air Navigation Plan and the Regional Plan for the Implementation of the CNS/ATM Systems, taking into account the guidance of GREPECAS.

3. Suggested actions

3.1 The E/CAR Informal Working Group is invited to continue its efforts towards the coordination, improvement and implementation of the communications, navigation and surveillance systems, developing sub-regional E/CAR action plans and following them up bearing in mind the background expressed in paragraphs 1.1 to 1.5 of this paper, as well as the following suggested actions:

- a) note the contents of this working paper;
- b) develop communication systems, considering the guidance expressed in paragraphs 2.2 to 2.7 of this paper;
- c) develop the navigation systems, considering the guidance expressed in paragraphs 2.8 and 2.9 of this paper;
- d) continue the development of surveillance systems, considering the guidance expressed in paragraphs 2.10 and 2.11 of this paper; and
- e) the development of other matters related with the CNS systems that the Meeting may consider appropriate to deal with bearing in mind paragraph 2.12 of this paper.