



Agenda Item 4: Air Navigation Matters

- 4.2** Follow-up on the implementation of the NAM/CAR Regional Performance Based Air Navigation Plan (RPBANIP) in the Eastern Caribbean: Progress report of the Fourth Eastern Caribbean Network Technical Group Meeting (E/CAR/NTG/4) and Second Eastern Caribbean Radar Data Sharing Adhoc Group Meeting (E/CAR/RD/2)

E/CAR/NTG AND E/CAR/RD AD-HOC GROUP REPORTS

(Presented by E/CAR/NTG-E/CAR/RD Rapporteur)

| | |
|---|---|
| SUMMARY | |
| This Working Paper presents the draft report of the E/CAR/NTG/4 and the E/CAR/RD/2 Meetings | |
| References: | |
| <ul style="list-style-type: none"> • Twenty-fourth Meeting of Directors of Civil Aviation of the Eastern Caribbean (E/CAR/DCA/24), Martinique, France, 2–5 October 2012 • E/CAR/NTG/3 Meeting, Christ Church, Barbados, 5-6 June 2012 • Thirty-Third Eastern Caribbean Working Group Meeting (E/CAR/WG/33), 4 to 8 June 2012 | |
| Strategic Objectives | <i>This working paper is related to Strategic Objectives: A. Safety – Enhance global civil aviation safety C. Environmental Protection and Sustainable Development of Air Transport</i> |

1. Introduction

1.1 The Fourth Meeting of the Eastern Caribbean Network Technical Group (E/CAR/NTG/4) and the Second Eastern Caribbean Radar Data Sharing Adhoc Group Meeting (E/CAR/RD/2) were carried out in Martinique, France from 17 - 18 June 2013. The meeting counted with the assistance of seven (7) E/CAR States/Territories (Antigua and Barbuda, Barbados, Dominica, France, Saint Lucia, Trinidad & Tobago, United States), ECCAA in representation of the OECS States, ICAO and the E/CAR AFS Network Service Provider (TSTT); making a total of 29 participants.

1.2 The Meeting adopted the following agenda:

- Agenda Item 1: Review of valid conclusions from E/CAR/WG/33 and E/CAR/DCA/24 Meetings related the work of the NTG
- Agenda Item 2: E/CAR AFS Network
- Agenda Item 3: Radar Data Sharing Activities
- Agenda Item 4: Other Business

2. Discussion

2.1 Under Agenda Item 1, the Meeting reviewed the valid conclusions from the previous E/CAR/NTG meetings: C2/1, C2/3, C2/5, C2/9, C/3/1 and decision D3/2. The Meeting concluded that all these conclusions were completed and C2/1 superseded. From the analysis of the E/CAR/WG/33 and E/CAR/DCA/24 Meetings, the following conclusions are considered related to the E/CAR AFS Network:

- E/CAR/WG/33 Meeting: C/33/3 and C/33/8; and
- E/CAR/DCA/24 Meeting: C24/2 and C24/3

2.2 An overview of the E/CAR Network performance was made, highlighting the following agreements and updates:

- a) the installation and commissioning of an Uninterrupted Power System (UPS) in Dominica commissioned to eliminate the power fluctuations; and
- b) damage to AFS equipment resulting from environmental negligence:
 - Anguilla - a UPS and a Cisco router
 - St. Kitts – a Cisco router

2.3 The Piarco-Martinique, Martinique-Guadeloupe and the Guadeloupe-Antigua International Private Leased Circuits (IPLCs) were implemented. The implementation of the last leg: Guadeloupe-Antigua in March 2013 completed the initial design of the E/CAR AFS network as agreed by the E/CAR/NTG membership.

2.4 The Service Level Agreement maintenance procedures were reviewed in terms of initial feedback on fault, identification and isolation of faults and escalation conditions. Network contingency was discussed in light of the importance of the E/CAR/AFS Network and the current and future applications to be supported by the Network.

2.5 The meeting reviewed the two projects undertaken by the TTCAA for the supply, installation and training of an Air Traffic Services Message Handling System (AMHS) and an Aeronautical Information Services System (AISS), and provided comments on the performance of both since the installation.

2.6 The United States informed the meeting with regards to the last AMHS workshop/meeting which was hosted by the United States/FAA in coordination with ICAO in Miami, FL on 11-13 April 2012. The workshop provided participants with a forum to exchange experiences, guidance on implementation of AMHS, as well as implementation activities and schedule updates. The next ICAO/FAA AMHS workshop is tentatively scheduled for September 2013 in Dominican Republic.

2.7 The Meeting was informed of the E/CAR/NTG Rapporteur participation in the MEVA III RFI process in representation of the E/CAR AFS Network and the MEVA III RFP process and status. The MEVA TMG Rapporteur confirmed that the MEVA II – E/CAR AFS Network interconnection requirements have been included in the MEVA III Tender Package version 1.0 for the MEVA III Tender process.

2.8 The meeting was informed of the progress on the radar data project, the infrastructure needed for radar data exchange and the offer made by France for their monoradars data to E/CAR States, in addition to the Radar Data server in Trinidad and Tobago. The operational requirements were reviewed and ECCAA provided some operational requirements for providing Situational Awareness and recalled the information exchange for operational experiences in situational awareness being conducted between France, Saint Lucia and ECCAA. In this regard, several members of the Radar Data Sharing Adhoc Group expressed their commitment to move on with the implementation of the CPUs donated by France considering their geographical situation within the French radar coverage of Dakota radar data. These members committed to the acquisition of the necessary monitor for the CPU, local environmental conditions and last mile interconnectivity.

2.9 Under Agenda Item 4, the Meeting recognized that for 2014, due to the planned activities for the E/CAR AFS Network and Radar Sharing, a face-to-face meeting would be needed in addition to regular teleconferences. As a result, the meeting agreed that the E/CAR/NTG/5 meeting shall be carried out with the third radar data sharing Adhoc Group Meeting. In this regard, the Meeting agreed to request the E/CAR DCAs their support for looking for the hosting of the next E/CAR/NTG/05 and III Radar Data Sharing Adhoc Group Meetings.

2.10 The Eastern Caribbean Network Technical Group and the Second Eastern Caribbean Radar Data Sharing Adhoc Group recorded its activities as Decisions and Draft Conclusions as follows:

| No. | Title | Page |
|------------------------------------|---|------|
| DRAFT Conclusion E/CAR/NTG/4/01 | Immediate restoration of ECAR AFS network node redundancy in St: Kitts and Anguilla | 2-1 |
| DRAFT Conclusion E/CAR/NTG/4/02 | E/CAR AFS Network Standard Operations Procedures (SOP): MPLS Maintenance Procedure and Service Level of Agreement | 2-2 |
| DRAFT Conclusion E/CAR/NTG/4/03 | E/CAR AFS Network Availability improvement | 2-4 |
| DRAFT Conclusion E/CAR/NTG/4/04 | E/CAR AFS Network Availability statistics | 2-4 |
| DRAFT Decision E/CAR/NTG/4/05 | E/CAR AFS Network Contingency Procedures | 2-5 |
| DRAFT Conclusion E/CAR/NTG/4/06 | Voice failures between Barbados and Martinique | 2-6 |
| DRAFT Conclusion E/CAR/NTG/4/07 | Improvement to failure report description and feedback | 2-7 |
| DRAFT Conclusion E/CAR/NTG/4/08 | ECCAA AFS Network procedure improvements | 2-7 |
| DRAFT Conclusion E/CAR/NTG/4/9 | Review of operational guidance material | 3-2 |
| DRAFT Conclusion E/CAR/NTG/4/10 | Submission of procedure to request CPU donated by France | 3-5 |
| DRAFT Conclusion E/CAR/NTG/4/11 | Implementation of Radar Data Displays with CPUs provided by France | 3-5 |
| DRAFT Conclusion E/CAR/NTG/4/12 | Update to Radar Data Sharing implementation Action Plan | 3-6 |

| No. | Title | Page |
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| DRAFT Conclusion E/CAR/NTG/4/13 | Local telecom infrastructure | 3-6 |
| DRAFT Conclusion E/CAR/NTG/4/14 | Hosting of the next E/CARNTG/05 and III Radar Data Sharing Adhoc Group Meetings | 4-1 |

2.11 Appendix A contains a list of the draft conclusions and decision and the complete draft report of the E/CAR/NTG/4 and the E/CAR/RD/2 meetings are presented in Appendix B.

3. Suggested action

3.1 The meeting is invited to:

- a) review the information contained in this working paper;
- b) identify any new tasks or progress on the tasks of the E/CAR/NTG and E/CAR/RD groups; and
- c) agree to any other actions as deemed appropriate.

APPENDIX A

Draft Conclusion

E/CAR/NTG/4/01: IMMEDIATE RESTORATION OF ECAR AFS NETWORK NODE REDUNDANCY IN ST: KITTS AND ANGUILLA

That Saint Kitts and Anguilla, as a matter of urgency, no later than 30 June 2013, communicate with Trinidad and Tobago to agree on the necessary actions to restore the node redundancy for the replacement of the failed equipment.

Draft Conclusion

E/CAR/NTG/4/02 E/CAR AFS NETWORK STANDARD OPERATIONS PROCEDURES (SOP): MPLS MAINTENANCE PROCEDURE AND SERVICE LEVEL OF AGREEMENT

- a) E/CAR/NTG Rapporteur to draft and submit to E/CAR/NTG Members an E/CAR AFS Network Standard Operations Procedures (SOP), including all maintenance and necessary network operation procedures, as well as the MPLS SLA by **30 September 2013**;
- b) E/CAR/NTG members to provide comments on E/CAR AFS Network SOP by 31 October 2013; and
- c) E/CAR AFS Network members to apply E/CAR AFS Network Standard Operations Procedures (SOP) final version by 31 December 2013.

Draft Conclusion

E/CAR/NTG/4/03 E/CAR AFS NETWORK AVAILABILITY IMPROVEMENT

In order to improve the E/CAR AFS network availability that:

- a) TSTT analyse and identify any issues that can improve availability figures per node and advise the E/CAR/NTG Rapporteur by September 30th 2013; and
- b) E/CAR AFS Members to be informed of the actions to be taken to improve the local node availability by the next teleconference in August 2013.

Draft Conclusion

E/CAR/NTG/4/04 E/CAR AFS NETWORK AVAILABILITY STATISTICS

In order to improve the Network availability information reported and analysed by the E/CAR AFS Network members that TSTT:

- a) to calculate the network availability per node discriminating the preventive maintenance downtime;
- b) to provide a bandwidth utilization graphic with individual node presentation;
- c) include on these graphic updates a comparative approach with the previous Network report to identify improvements; and
- d) submit the new information to the E/CAR AFS Members before the first teleconference.

Draft Decision

E/CAR/NTG/4/05 E/CAR AFS NETWORK CONTINGENCY PROCEDURES

That France and United States develop network contingency procedures and present the final version of this document to the E/CAR/NTG/5 meeting.

Draft Conclusion

E/CAR/NTG/4/06 VOICE FAILURES BETWEEN BARBADOS AND MARTINIQUE

That TSTT reviews the dial plan and any activity needed to resolve the voice communications between Barbados and Martinique before 30 June 2013

Draft Conclusion

E/CAR/NTG/4/07 IMPROVEMENT TO FAILURE REPORT DESCRIPTION AND FEEDBACK

Since Trinidad and Tobago is responsible for the operation and outcomes of the TopDesk application, that Trinidad and Tobago:

- a) clearly identify the type of failure (application or network) in its responses on Topdesk;
- b) provide feedback to all failure reports; and
- c) report these improvement to the next teleconference.

Draft Conclusion

E/CAR/NTG/4/08 ECCAA AFS NETWORK PROCEDURE IMPROVEMENTS

Since ECCAA is the CNS Service Provider for the OECS States, a minimum maintenance level review is made before issuing a failure report, that:

- a) ECCAA to review and update their maintenance reporting procedure with their ECCAA Members by the end of July 2013; and
- b) Trinidad and Tobago to provide Dominica an online training for the use of the TopDesk application.

Draft Conclusion
E/CAR/NTG/4/09

REVIEW OF OPERATIONAL GUIDANCE MATERIAL

That ECCAA in collaboration with France and Saint Lucia review the operational guidance material and present a final draft to the Radar Sharing Rapporteur no later than 31st July 2013.

Draft Conclusion
E/CAR/NTG/4/010

SUBMISSION OF PROCEDURE TO REQUEST CPU DONATED BY FRANCE

In order to facilitate the procedure for obtaining the CPUs donated by France, that France submits to the Rapporteur E/CAR/NTG and ICAO a template with the necessary requirements and conditions to formalize the request for these CPUs, including the required environmental conditions no later than 30 June 2013.

Draft Conclusion
E/CAR/NTG/4/11

IMPLEMENTATION OF RADAR DATA DISPLAYS WITH CPUS PROVIDED BY FRANCE

In order to facilitate the implementation of the Radar Data Displays based on the France provided CPUs, that:

- a) Trinidad and Tobago arrange the implementation of the radar data feed to each corresponding note for operation of each radar display no later than end of September 2013;
- b) Anguilla, Antigua and Barbuda, Barbados, Dominica, Montserrat and St. Kitts and Nevis proceed with the acquisition of the necessary monitor and local power conditioning requirement for the CPU by the end of September 2013; and
- c) all participants in action a) and b) to provide progress to the E/CAR/DCA/25 Meeting.

Draft Conclusion
E/CAR/NTG/4/12

UPDATE TO RADAR DATA SHARING IMPLEMENTATION ACTION PLAN

In order to update the activities for the radar data sharing implementation action plan, that Trinidad and Tobago:

- a) update the Radar Data Sharing Action Plan including all the actions and activities discussed and agreed in the E/CAR/NTG/4 Meeting, in terms of long and short term solution actions, States/Territories implementing the Radar Displays in Phase 1 and 2, etc;
- b) present an initial draft of this update to the next Radar Data Sharing Adhoc Group teleconference in August 2013 for approval; and

- c) present the final update to the E/CAR/DCA/25 Meeting.

Draft Conclusion

E/CAR/NTG/4/13 LOCAL TELECOM INFRASTRUCTURE

That the E/CAR States/Territories implementing the Radar Displays in the short term solution, implement the necessary local telecommunications infrastructure to complete the connectivity of the circuits provided by the E/CAR AFS Network from the demarcation point of the E/CAR AFS network router.

Draft Conclusion

E/CAR/NTG/4/14 HOSTING OF THE NEXT E/CARNTG/05 AND III RADAR DATA SHARING ADHOC GROUP MEETINGS

To conduct the next E/CAR/NTG/05 and III Radar Data Sharing Adhoc Group Meetings together to discuss and agree on the matters related to the expected improvements in the network performance, reporting and interconnection, as well as the result on radar data sharing activities, and that E/CAR/NTG Rapporteur prepares the necessary dissertation for the DCAs in the coming E/CAR/DCA/25 for requesting the States support for a host country for these meetings



E/CAR NTG/4-E/CAR RD/2

INTERNATIONAL CIVIL AVIATION ORGANIZATION

Fourth Meeting of the Eastern Caribbean Network Technical Group

(E/CAR/NTG/4)

and

Second Eastern Caribbean Radar Data Sharing Adhoc

Group Meeting (E/CAR/RD/2)

DRAFT REPORT

(Martinique, French Antilles, France, 17 - 18 June 2013)

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| | 2 <i>Revision and actions concerning E/CAR/WG/33 and E/CAR/DCA/24 meetings related to the E/CAR AFS Network</i> | |
| | 3 <i>New Air Navigation Implementation Working Group (ANI/WG) and 12th Air Navigation Conference recommendations</i> | |
| | Report on Agenda Item 2: E/CAR AFS Network..... | 2-1 |
| | 2.1 <i>Network Performance analysis and general aspects</i> | |
| | a) <i>Analysis of performance of the network (web portal)</i> | |
| | b) <i>Analysis of failures and recommendations</i> | |
| | c) <i>Maintenance and reporting procedures (Top desk)</i> | |
| | d) <i>Logistics activities and their improvements</i> | |
| | e) <i>New requirements if any</i> | |
| | 2.2 <i>Implementation of AMHS and AISS/Central FDP System</i> | |
| | 2.3 <i>Participation in MEVA III RFI Process</i> | |
| | 2.4 <i>E/CAR AFS Network Interconnection to MEVA</i> | |
| | Report on Agenda Item 3: Radar Data Sharing Activities..... | 3-1 |
| | 3.1 <i>Radar Data Agreement and Teleconferences follow-up</i> | |
| | 3.2 <i>Operational requirement review</i> | |
| | 3.3 <i>Radar Display Trial Results</i> | |
| | 3.4 <i>Implementation of radar data sharing tasks</i> | |
| | Report on Agenda Item 4: Other Business..... | 4-1 |

HISTORY OF THE MEETING

1. PLACE AND DURATION OF THE MEETING

The Fourth Meeting of the Eastern Caribbean Network Technical Group (E/CAR/NTG/4) and the Second Eastern Caribbean Radar Data Sharing Ad-hoc Group Meeting (E/CAR/RD/2) were carried out at the Carayou Hotel, Martinique, French Antilles, France from 17 - 18 June 2013.

2. OPENING CEREMONY

The opening ceremony commenced with a warm welcome from Ms. Veronica Ramdath, E/CAR/NTG Rapporteur and followed with some introductory remarks by Mr. Julio Siu, ICAO NACC Regional Officer on Communications, Navigation and Surveillance, on behalf of Mrs. Loretta Martin, Regional Director of the ICAO NACC Regional Office highlighting the importance of the work of the E/CAR/NTG, the relevant meeting agenda issues and the radar data sharing requirements mandated by the E/CAR Directors. Mr. Olivier Jouans, Director of the Air Navigation Services of the French Antilles and Guyana (DSNA), commented on the importance of having an efficient and cost benefit Air navigation infrastructure to support the growing aviation in the region and opened the meeting.

3. WORKING LANGUAGES

The working language of the Meeting was English. The Documentation was provided electronically to the participants and was available in the ICAO NACC Regional Office Website under the section "meetings": <http://www.mexico.icao.int/Meetings/ECARNTG4.html>.

4. PARTICIPANTS AND ORGANIZATION

The meeting counted with the assistance of seven (7) E/CAR States/Territories (Antigua and Barbuda, Barbados, Dominica, France, Saint Lucia, Trinidad & Tobago, United States), ECCAA in representation of the OECS States, ICAO and the E/CAR AFS Network Service Provider (TSTT); making a total of 29 participants. The list of participants is being presented in pages iii-1 to iii-4.

The Meeting was chaired by Ms. Veronica Ramdath, Rapporteur of the Eastern Caribbean Network Technical Group, and acted as Secretary to the Meeting. She was assisted by Mr. Julio Siu, ICAO NACC Regional Officer Communications, Navigation and Surveillance.

5. AGENDA

The Meeting adopted the following agenda:

Agenda Item 1: Review of valid conclusions from E/CAR/WG/33 and E/CAR/DCA/24 Meetings related the work of the NTG

3.1 Follow-up to previous E/CAR/NTG Conclusions and Decisions

- 3.2 Revision and actions concerning E/CAR/WG/33 and E/CAR/DCA/24 meetings related to the E/CAR AFS Network
- 3.3 New Air Navigation Implementation Working Group (ANI/WG) and 12th Air Navigation Conference recommendations

Agenda Item 2: E/CAR AFS Network

- 2.1 Network Performance analysis and general aspects
 - f) Analysis of performance of the network (web portal)
 - g) Analysis of failures and recommendations
 - h) Maintenance and reporting procedures (Top desk)
 - i) Logistics activities and their improvements
 - j) New requirements if any
- 2.2 Implementation of AMHS and AISS/Central FDP System
- 2.3 Participation in MEVA III RFI Process
- 2.4 E/CAR AFS Network Interconnection to MEVA

Agenda Item 3: Radar Data Sharing Activities

- 3.1 Radar Data Agreement and Teleconferences follow-up
- 3.2 Operational requirement review
- 3.3 Radar Display Trial Results
- 3.4 Implementation of radar data sharing tasks

Agenda Item 4: Other Business

6. SCHEDULE AND WORK MODE

The Meeting agreed to hold its daily sessions from 09:00 to 15:30 hours with two breaks. The Meeting also agreed to work in plenary..

7. **RECOMMENDATIONS AND CONCLUSIONS**

The Eastern Caribbean Network Technical Group and the Second Eastern Caribbean Radar Data Sharing Adhoc Group recorded its activities as Decisions and Draft Conclusions as follows:

| No. | Title | Page |
|------------------------------------|---|------|
| DRAFT Conclusion E/CAR/NTG/4/01 | Immediate restoration of ECAR AFS network node redundancy in St: Kitts and Anguilla | 2-1 |
| DRAFT Conclusion E/CAR/NTG/4/02 | E/CAR AFS Network Standard Operations Procedures (SOP): MPLS Maintenance Procedure and Service Level of Agreement | 2-2 |
| DRAFT Conclusion E/CAR/NTG/4/03 | E/CAR AFS Network Availability improvement | 2-4 |
| DRAFT Conclusion E/CAR/NTG/4/04 | E/CAR AFS Network Availability statistics | 2-4 |
| DRAFT Decision E/CAR/NTG/4/01 | E/CAR AFS Network Contingency Procedures | 2-5 |
| DRAFT Conclusion E/CAR/NTG/4/05 | Voice failures between Barbados and Martinique | 2-6 |
| DRAFT Conclusion E/CAR/NTG/4/06 | Improvement to failure report description and feedback | 2-7 |
| DRAFT Conclusion E/CAR/NTG/4/07 | ECCAA AFS Network procedure improvements | 2-7 |
| DRAFT Conclusion E/CAR/NTG/4/08 | Review of operational guidance material | 3-2 |
| DRAFT Conclusion E/CAR/NTG/4/09 | Submission of procedure to request CPU donated by France | 3-5 |
| DRAFT Conclusion E/CAR/NTG/4/10 | Implementation of Radar Data Displays with CPUs provided by France | 3-5 |
| DRAFT Conclusion E/CAR/NTG/4/11 | Update to Radar Data Sharing implementation Action Plan | 3-6 |
| DRAFT Conclusion E/CAR/NTG/4/12 | Local telecom infrastructure | 3-6 |
| DRAFT Conclusion E/CAR/NTG/4/13 | Hosting of the next E/CARNTG/05 and III Radar Data Sharing Adhoc Group Meetings | 4-1 |

8. **List of Working and Information Papers**

Working and Information Papers are available on the ICAO website at the following link:
<http://www.mexico.icao.int/Meetings/ECARNTG4.html>

| WORKING PAPERS | | | | |
|-----------------------|-------------|---|----------|---------------------------|
| Number | Agenda Item | Title | Date | Prepared and Presented by |
| WP/01 | -- | Draft Agenda and Schedule | 20/05/13 | E/CAR/NTG Rapporteur |
| WP/02 | 1.1 | E/CAR/NTG Conclusions and Decisions Follow-up | 11/06/13 | E/CAR/NTG Rapporteur |
| WP/03 | 1.2 | Revision and Actions Concerning E/CAR/WG/33 and E/CAR/DCA/24 Conclusions Related to the ECAR AFS Network | 28/05/13 | ICAO Secretariat |
| WP/04 | 1.3 | Twelfth Air Navigation Conference (AN-CONF/12) Recommendations, Implementation of Aviation System Block Upgrades (ASBUs) Methodology and the New Air Navigation Implementation Working Group (ANI/WG) | 11/06/13 | ICAO Secretariat |
| WP/05 | 2.1 | Analysis of Performance of the Network | 17/06/13 | Barbados |
| WP/06 | 2.1 | Analysis of Performance of the Network | 12/06/13 | ECCAA |
| WP/07 | 2.1 | E/CAR AFS Network Performance on French West Indies (FWI) | 24/05/13 | France |
| WP/08 | 2.1 | Maintenance and Reporting Procedures | 12/06/13 | Trinidad and Tobago |
| WP/09 | 2.2 | Implementation of AMHS and AISS/Central FDP System | 13/06/13 | Trinidad and Tobago |
| WP/10 | 2.4 | MEVA II-ECAR AFS Network Interconnection Activities | 22/05/13 | MEVA TMG Coordinator |
| WP/11 | 4 | E/CAR/NTG Future Meetings and Update to ToR | 11/06/13 | E/CAR/NTG Rapporteur |
| WP/12 | 3.1 | Radar Data Agreement and Teleconference Follow-Up | 12/06/13 | ICAO Secretariat |
| WP/13 | 3.3 | Radar Display Trial Results | 13/06/13 | France |
| WP/14 | 3.2 | Operational Requirements Review for Radar Display use | 11/06/13 | ECCAA |
| WP/15 | 3.4 | Implementation of Radar Data Sharing Tasks | 28/05/13 | ICAO Secretariat |
| WP/16 | 3.3 | Analysis of Radar Coverage in Grenada and Saint Vincent | 11/06/13 | Trinidad and Tobago |

INFORMATION PAPERS

| Number | Agenda Item | Title | Date | Prepared and Presented by |
|--------|-------------|--|----------|---------------------------|
| IP/01 | -- | List of Working, Information and Discussion Papers and Presentations | **/**/13 | Secretariat |
| IP/02 | 2.3 | Participation in MEVA III RFI Process | 13/06/13 | E/CAR/NTG Rapporteur |
| IP/03 | 2.2 | Implementation of AMHS Circuit PIARCO- Atlanta | 13/06/13 | United States |

DISCUSSION PAPERS

| Number | Agenda Item | Title | Date | Prepared and Presented by |
|--------|-------------|---|----------|---------------------------|
| DP/01 | 3.1 | Radar Data Agreement and Teleconference Follow-Up | 13/06/13 | E/CAR/RD Rapporteur |

PRESENTATIONS

| Number | Agenda Item | Title | Presented by |
|--------|-------------|--|--------------|
| P/01 | 2.1 | Network Performance analysis and general aspects | TSTT |

Fourth Eastern Caribbean Network Technical Working Group Meeting (E/CAR/NTG/4) and
Second Eastern Caribbean Radar Data Sharing Ad-hoc Group Meeting (E/CAR/RD/2)
List of Participants

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Michael Lee
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Fourth Eastern Caribbean Network Technical Working Group Meeting (E/CAR/NTG/4) and
Second Eastern Caribbean Radar Data Sharing Ad-hoc Group Meeting (E/CAR/RD/2)
List of Participants – General Information

iv-1

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Fourth Eastern Caribbean Network Technical Working Group Meeting (E/CAR/NTG/4) and
Second Eastern Caribbean Radar Data Sharing Ad-hoc Group Meeting (E/CAR/RD/2)
List of Participants – General Information

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Fourth Eastern Caribbean Network Technical Working Group Meeting (E/CAR/NTG/4) and
Second Eastern Caribbean Radar Data Sharing Ad-hoc Group Meeting (E/CAR/RD/2)
List of Participants – General Information

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- END -

Fourth Eastern Caribbean Network Technical Working Group Meeting (E/CAR/NTG/4) and
Second Eastern Caribbean Radar Data Sharing Ad-hoc Group Meeting (E/CAR/RD/2)
Report on Agenda Item 1

1-1

Agenda Item 1: Review of valid conclusions from E/CAR/WG/33 and E/CAR/DCA/24 Meetings related the work of the NTG

Follow-up to previous E/CAR/NTG Conclusions and Decisions

1.1 Under WP/02, the Meeting reviewed the valid conclusions from the previous E/CAR/NTG meetings: C2/1, C2/3, C2/5, C2/9, C/3/1 and decision D3/2. The Meeting concluded that all these conclusions were completed and C2/1 superseded. In **Appendix A** to this part of the report, a detailed follow-up of these conclusions is shown.

Revision and actions concerning E/CAR/WG/33 and E/CAR/DCA/24 meetings related to the E/CAR AFS Network

1.2 Under WP/03, the Meeting reviewed the valid conclusions formulated by the E/CAR/WG/33 and E/CAR/DCA/24 Meetings, identifying the ones related to the E/CAR AFS Network, proposing to inform these meetings of the progress achieved by the E/CAR/NTG as detailed in **Appendix B** to this part of the report. From the analysis of the E/CAR/WG/33 and E/CAR/DCA/24 Meetings, the following conclusions are considered related to the E/CAR AFS Network:

- E/CAR/WG/33 Meeting: C/33/3 and C/33/8 and
- E/CAR/DCA/24 Meeting: C24/2 and C24/3

New Air Navigation Implementation Working Group (ANI/WG) and 12th Air Navigation Conference recommendations

1.3 In WP/04 ICAO presented a summary of the recommendations of the Twelfth Air Navigation (AN-Conf/12) approved by the ICAO Council, as presented in the appendix of WP/04. The Meeting reviewed the recommendations and agreed that a follow-up to these recommendations will be carried out in coordination with the E/CAR/CATG and the NAM/CAR Air Navigation Implementation Working Group (ANI/WG).

1.4 Regarding the Implementation of Aviation System Block Upgrades (ASBUs) and Impact on Regional Plans, the Meeting took note of the ASBU methodology and the new edition of the Global Air Navigation Plan; noting that by adopting the ASBUs and the follow-up to regional implementation plans undertaken by the regional working groups, all the air navigation regional plans and implementation activities should be updated during 2013. This task will be undertaken by the ANI/WG, in their first meeting to be held in the ICAO NACC Regional Office in Mexico City, Mexico, from 29 July to 1 August de 2013.

1.5 The Meeting was informed on the details and reasons for the establishment of the New ANI/WG, in accordance to the Fourth Meeting of North American, Central American and Caribbean Directors of Civil Aviation (NACC/DCA/4) Conclusion 4/9 - *Consolidation of Sub-Regional Working Groups in the CAR Region*. The Meeting expressed their support for the ANI/WG through the actions and results of the Eastern Caribbean Civil Aviation Technical Group.

| Conclusion/Decision | Description | Status |
|---|--|---|
| <p>Conclusion E/CAR/NTG/2/01</p> <p>MPLS Maintenance Procedure and Service Level of Agreement</p> | <p>In order to establish and define the MPLS Maintenance procedures and inform on the service level of agreement to be applicable to the MPLS Network, that:</p> <p>a) E/CAR AFS Network members provide the E/CAR/NTG Rapporteur the necessary information for the coordination of the maintenance (Point of Contact information, working hours available for technical intervention, any particular security procedure to follow, escalation, etc.) by the 30 June 2011;</p> <p>b) United States, Trinidad and Tobago and TSTT to review and draft a personalized version of the Standard Operations Procedure (SOP) by 31 July 2011;</p> <p>c) E/CAR/NTG Rapporteur to draft a MPLS Maintenance Procedure based on the personalized SOP and the MPLS SLA by 30 August 2011;</p> <p>d) Comments to MPLS Maintenance Procedure by E/CAR/NTG Members by 15 September 2011; and</p> <p>e) E/CAR AFS Network members to apply MPLS Maintenance Procedure final version by 1 October 2011.</p> | <p>SUPERSEDED</p> <p>a) Completed - Point of Contact and escalation information provided by States.</p> <p>b) Completed - United States submitted a draft SOP for consideration. The SOP was reviewed by TSTT and TTCAA and sent back to the United States PoC.</p> <p>c) Valid -The information in SOP and the SLA to be combined in one document by September 30, 2013</p> <p>d) Valid based on (c). The combined SOP/SLA (E/CAR Maintenance Procedures) to be provided to States by October 31st 2013.</p> <p>e) Valid based on (d) by December 31st 2013</p> |
| <p>Conclusion E/CAR/NTG/2/03</p> <p>Removal of old unused E/CAR Network equipment</p> | <p>To free the space occupied by the old E/CAR Network equipment and to complete the installation of the MPLS Network that TTCAA inform the E/CAR Network members no later than 30 July 2011 on the actions to be carried out for the removal of these old unused equipment.</p> | <p>COMPLETED</p> <p>Via email on 7th January 2013 States were advised that Trinidad and Tobago will donate the old ECAR AFS and AFTN equipment to the States to do with as they wish or dispose of as necessary. This message was reiterated during the installation of the new AMHS.</p> |

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| <p>Conclusion E/CAR/NTG/2/05</p> <p>Urgent Immediate Solution to Power Supply Irregularity at Melville Hall Premises</p> | <p>Since E/CAR AFS Network equipment implemented in Melville Hall premises is facing major power supply irregularities that will soon damage the operating equipment, that:</p> <p>a) TTCAA Director General writes to ECCAA Directorate advising of the matter of irregularities in the electrical power and bringing to his attention the resulting action if the AFS equipment is damaged as a result of power problems. As stated at the E/CAR/WG/32, the state will bear responsibility for the cost of replacing and installing the damaged equipment; and</p> <p>b) Dominica/Melville Hall Airport Authority to implement an urgent immediate solution for the power supply irregularity no later than 30 June 2011.</p> | <p>COMPLETED</p> <p>Dominica informed the meeting that a new UPS was installed and commissioned since May 2013.</p> |
| <p>Conclusion E/CAR/NTG/2/09</p> <p>IPv4 Addresses implementation in the E/CAR AFS Network</p> | <p>In compliance with the regional agreement for implementing ATN IPS Networks, under the IPv4 addressing scheme, TTCAA carry out the necessary activities for the application of the IPv4 addressing scheme in the MPLS Network and inform the progress of this action to the E/CAR/NTG Members by the next E/CAR/NTG Meeting (E/CAR/NTG/03).</p> | <p>COMPLETED</p> <p>A unique addressing scheme (not IPv4) was implemented for the ECAR AFS network and the supporting AMHS network. IPv4 addressing will be implemented in the San Juan ECAR AFS router for the AMHS to Atlanta only.</p> |
| <p>Conclusion E/CAR/NTG/3/01</p> <p>Use of Top Desk faults reporting application</p> | <p>To improve the efficiency and shorten the fault reporting times, E/CAR AFS Network users are urged to utilize the Top desk application as the primary means to log fault reports</p> | <p>COMPLETED</p> <p>All E/CAR/NTG Members have taken action to use the Top Desk Application</p> |
| <p>Decision E/CAR/NTG/3/01</p> <p>Regional Interconnection with the E/CAR Network</p> | <p>Considering the importance of exchanging information for a regional interconnection between the E/CAR and the MEVA Network (MEVA III) that the NTG Members</p> <p>a) Review the draft RFI and provide comments to the E/CAR/NTG representative in the MEVAIII Task Force; and</p> <p>b) Participate in the MEVA TMG/24 meeting where vendors are to respond to the RFI.</p> | <p>COMPLETED</p> <p>MEVA III RFI process completed, where E/CAR/NTG Rapporteur actively participated in the MEVA TMG/25 meeting.</p> |

| Conclusion/Decision | Description | Status |
|---|--|---|
| <p>Conclusion E/CAR/NTG/2/01</p> <p>MPLS Maintenance Procedure and Service Level of Agreement</p> | <p>In order to establish and define the MPLS Maintenance procedures and inform on the service level of agreement to be applicable to the MPLS Network, that:</p> <p>a) E/CAR AFS Network members provide the E/CAR/NTG Rapporteur the necessary information for the coordination of the maintenance (Point of Contact information, working hours available for technical intervention, any particular security procedure to follow, escalation, etc.) by the 30 June 2011;</p> <p>b) United States, Trinidad and Tobago and TSTT to review and draft a personalized version of the Standard Operations Procedure (SOP) by 31 July 2011;</p> <p>c) E/CAR/NTG Rapporteur to draft a MPLS Maintenance Procedure based on the personalized SOP and the MPLS SLA by 30 August 2011;</p> <p>d) Comments to MPLS Maintenance Procedure by E/CAR/NTG Members by 15 September 2011; and</p> <p>e) E/CAR AFS Network members to apply MPLS Maintenance Procedure final version by 1 October 2011.</p> | <p>SUPERSEDED</p> <p>a) Completed - Point of Contact and escalation information provided by States.</p> <p>b) Completed - United States submitted a draft SOP for consideration. The SOP was reviewed by TSTT and TTCAA and sent back to the United States PoC.</p> <p>c) Valid -The information in SOP and the SLA to be combined in one document by September 30, 2013</p> <p>d) Valid based on (c). The combined SOP/SLA (E/CAR Maintenance Procedures) to be provided to States by October 31st 2013.</p> <p>e) Valid based on (d) by December 31st 2013</p> |
| <p>Conclusion E/CAR/NTG/2/03</p> <p>Removal of old unused E/CAR Network equipment</p> | <p>To free the space occupied by the old E/CAR Network equipment and to complete the installation of the MPLS Network that TTCAA inform the E/CAR Network members no later than 30 July 2011 on the actions to be carried out for the removal of these old unused equipment.</p> | <p>COMPLETED</p> <p>Via email on 7th January 2013 States were advised that Trinidad and Tobago will donate the old ECAR AFS and AFTN equipment to the States to do with as they wish or dispose of as necessary. This message was reiterated during the installation of the new AMHS.</p> |

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| <p>Conclusion E/CAR/NTG/2/05</p> <p>Urgent Immediate Solution to Power Supply Irregularity at Melville Hall Premises</p> | <p>Since E/CAR AFS Network equipment implemented in Melville Hall premises is facing major power supply irregularities that will soon damage the operating equipment, that:</p> <p>a) TTCAA Director General writes to ECCAA Directorate advising of the matter of irregularities in the electrical power and bringing to his attention the resulting action if the AFS equipment is damaged as a result of power problems. As stated at the E/CAR/WG/32, the state will bear responsibility for the cost of replacing and installing the damaged equipment; and</p> <p>b) Dominica/Melville Hall Airport Authority to implement an urgent immediate solution for the power supply irregularity no later than 30 June 2011.</p> | <p>COMPLETED</p> <p>Dominica informed the meeting that a new UPS was installed and commissioned since May 2013.</p> |
| <p>Conclusion E/CAR/NTG/2/09</p> <p>IPv4 Addresses implementation in the E/CAR AFS Network</p> | <p>In compliance with the regional agreement for implementing ATN IPS Networks, under the IPv4 addressing scheme, TTCAA carry out the necessary activities for the application of the IPv4 addressing scheme in the MPLS Network and inform the progress of this action to the E/CAR/NTG Members by the next E/CAR/NTG Meeting (E/CAR/NTG/03).</p> | <p>COMPLETED</p> <p>A unique addressing scheme (not IPv4) was implemented for the ECAR AFS network and the supporting AMHS network. IPv4 addressing will be implemented in the San Juan ECAR AFS router for the AMHS to Atlanta only.</p> |
| <p>Conclusion E/CAR/NTG/3/01</p> <p>Use of Top Desk faults reporting application</p> | <p>To improve the efficiency and shorten the fault reporting times, E/CAR AFS Network users are urged to utilize the Top desk application as the primary means to log fault reports</p> | <p>COMPLETED</p> <p>All E/CAR/NTG Members have taken action to use the Top Desk Application</p> |
| <p>Decision E/CAR/NTG/3/01</p> <p>Regional Interconnection with the E/CAR Network</p> | <p>Considering the importance of exchanging information for a regional interconnection between the E/CAR and the MEVA Network (MEVA III) that the NTG Members</p> <p>a) Review the draft RFI and provide comments to the E/CAR/NTG representative in the MEVAIII Task Force; and</p> <p>b) Participate in the MEVA TMG/24 meeting where vendors are to respond to the RFI.</p> | <p>COMPLETED</p> <p>MEVA III RFI process completed, where E/CAR/NTG Rapporteur actively participated in the MEVA TMG/25 meeting.</p> |

| Conclusion | Description | Status |
|--|--|--|
| <p>Conclusion E/CAR/WG 33/3 Radar Data Sharing Activities in the ECAR Region</p> | <p>In order to prepare for the implementation of the radar data activities in the E/CAR Sub-Region, that:</p> <ul style="list-style-type: none"> a) Trinidad and Tobago confirm to E/CAR States/Territories and the ICAO NACC Regional Office by 29 June 2012 that the Flight Plan identification correlation information can be sent with the system tracks; b) E/CAR States and Territories interested in receiving radar data, provide a Point of Contact and their operational requirements to the CNS Committee Rapporteur (Veronica Ramdath, Trinidad and Tobago) by 31 August 2012; c) States/Territories providing radar data to the Radar Data server, to provide their theoretical radar coverage (FL 10, 30, 50, 100, 150, 200 and 300) to the CNS Committee Rapporteur by 10 July 2012; and a) Trinidad and Tobago to provide to E/CAR States and the ICAO NACC Regional Office the radar sharing Interface Control Document (ICD) by 31 October 2012. | <p>COMPLETED contribution by E/CAR/NTG.</p> <p>E/CAR AFS Network already capable to satisfy these radar Data sharing needs.</p> |
| <p>CONCLUSION E/CAR/WG 33/8</p> <p>Action Plan For AIDC Implementation Using CPL - LAM Messages</p> | <p>That, considering the importance and benefits of AIDC implementation, States/Territories of the Eastern Caribbean:</p> <ul style="list-style-type: none"> a. Inform the ICAO NACC Regional Office about the capacity of their ATC Systems to process CPL - LAM messages no later than 21 September 2012; b. Review the NAM ICD and CAR/SAM ICD as a basis to implement AIDC, recommending changes to the CAR/SAM ICD for its update no later than 26 October 2012; c. Prepare with the support of ICAO an | <p>VALID</p> <p>Telecom requirements to be identified and analysed for its AIDC implementation based on the Regional AIDC plan.</p> |

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| Conclusion | Description | Status |
|---|---|--|
| | <p>action plan to harmonize the AIDC implementation for the use of CPL – LAM messages; and</p> <p>d. Present the implementation of this Action Plan to the next Working Group meeting.</p> | |
| <p>CONCLUSION 24/2 E/CAR RADAR DATA SHARING IMPLEMENTATION</p> | <p>That considering the important operational benefits and safety improvements that will be obtained with the implementation of radar data sharing in the E/CAR area, the E/CAR Directors of Civil Aviation:</p> <p>a) approve the initial radar project schedule (as shown in Appendix B to WP/20); and</p> <p>b) request interested E/CAR States/Territories to confirm their Point-of-Contact for this implementation with the CNS Committee Rapporteur and ICAO by 30 November 2012.</p> | <p>COMPLETED</p> <p>Ongoing activities with radar data sharing. Poc defined</p> |
| <p>CONCLUSION 24/3 PIARCO NOTAM/AIS CONTINGENCY PLAN</p> | <p>That:</p> <p>a) the E/CAR AIS Committee, in collaboration with the Trinidad and Tobago Piarco AIS Office, develop and circulate a draft Piarco AIS Contingency Plan to E/CAR States, ECCAA and ICAO by 26 April 2013;</p> <p>b) E/CAR States, ECCAA and ICAO provide the E/CAR AIS Committee with comments on the draft PIARCO AIS Contingency Plan by 31 May 2013; and</p> <p>c) the E/CAR AIS Committee Rapporteur or Trinidad and Tobago present the proposed PIARCO AIS Contingency Plan at the next E/CAR Civil Aviation Technical Group Meeting in 2013.</p> | <p>VALID</p> <p>The AIS Committee Rapporteur informed that the definition of the AIS Contingency Plan is on-going and that Trinidad and Tobago is working on the documentation. The telecom requirements are expected to be identified and analysed for its implementation by First quarter 2014.</p> |

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Report on Agenda Item 2

2-1

Agenda Item 2: E/CAR AFS Network*Network Performance Analysis and General Aspects*

2.1 Under P/01, the ECAR AFS Network Service Provider, TSTT provided an overview of the E/CAR Network performance since the last E/CAR/NTG/3 Meeting, August 2012 to May 2013, highlighting the following agreements and updates:

- a) Dominica informed the meeting that an Uninterrupted Power System (UPS) was installed and commissioned to eliminate the power fluctuations.
- b) TSTT informed of damage to AFS equipment resulting from environmental negligence:
 - Anguilla - a UPS and a Cisco router
 - St. Kitts – a Cisco router

2.2 Under the terms of the Cisco Smartnet, equipment failure as a result of negligence is not warranted. Damage due to environmental conditions is considered as negligence and is not covered under the Smartnet support replacement. Further to the Final Report of the E/CAR/WG/32 meeting and paragraph 2.3.4.11 and WP/28 paragraph 2.8-2.12, States are responsible to replace any equipment damaged due to uncontrolled or adverse environmental conditions. While the MoU on environmental conditions has not yet been presented to States for signature, the general course of action was agreed by States. In this regard the meeting formulated

Draft Conclusion**E/CAR/NTG/4/01: IMMEDIATE RESTORATION OF ECAR AFS NETWORK NODE REDUNDANCY IN ST: KITTS AND ANGUILLA**

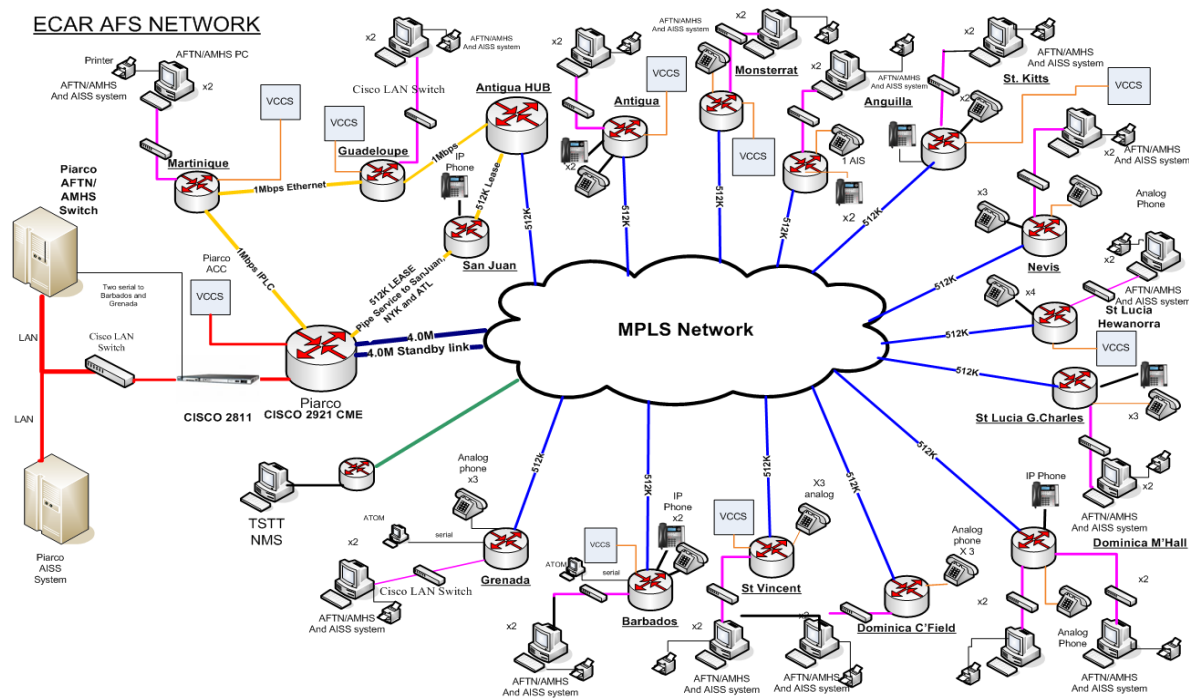
That Saint Kitts and Anguilla, as a matter of urgency, no later than 30 June 2013, to communicate with Trinidad and Tobago to agree on the necessary actions to restore the node redundancy for the replacement of the failed equipment.

2.3 The Piarco-Martinique and Martinique-Guadeloupe IPLCs were implemented in July 2011. Legal connectivity issues delayed the final leg of the redundancy, namely the International Private Leased Circuit (IPLC) between Guadeloupe and Antigua. This IPLC was installed in March 2013.

2.4 In this regard, TSTT provided an update of the E/CAR AFS Network configuration after the changes to facilitate the AMHS/AISS implementation, as detailed in the following configuration of the AFS network to date:

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Report on Agenda Item 2

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2.5 The Meeting recalled that an internet portal which can be used to monitor the performance of the network was provided to E/CAR AFS users via <http://tsttmetro.e.tstt.co.tt>, for monitoring purposes. TSTT discussed the proactive monitoring in effect for the network via portal access, regional notifications and field forces.

2.6 Maintenance visits are scheduled for July-August 2013. E/CAR Members will be informed at least two weeks in advance for this coming maintenance visits.

2.7 TSTT reviewed the Service Level Agreement maintenance procedures in terms of initial feedback on fault, identification and isolation of faults and escalation conditions. The Meeting recalled the work assigned for the maintenance procedures for the E/CAR/NTG Rapporteur under Conclusion E/CAR/NTG/2/01 and agreed to supersede this conclusion with the following draft conclusion:

Draft Conclusion
E/CAR/NTG/4/02

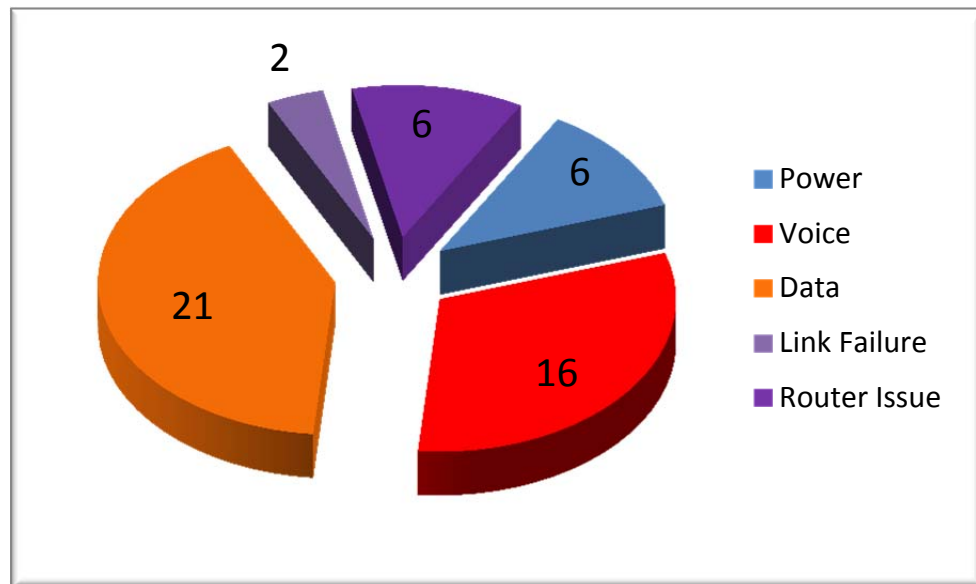
E/CAR AFS Network Standard Operations Procedures (SOP): MPLS Maintenance Procedure and Service Level of Agreement

- a) E/CAR/NTG Rapporteur to draft and submit to E/CAR/NTG Members a E/CAR AFS Network Standard Operations Procedures (SOP) including all maintenance and necessary network operation procedures as well as the MPLS SLA by **30 September 2013**;
- b) E/CAR/NTG members to provide comments on E/CAR AFS Network SOP by **31 October 2013**; and
- c) E/CAR AFS Network members to apply E/CAR AFS Network Standard Operations Procedures (SOP) final version by **31 December 2013**.

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2.8 TSTT Presented a ten-month performance evaluation of the ECAR/AFS Network (MPLS) showing consistently good performance and availability of the network. The failure reporting tickets registered from August 2012 to May 2013 highlighted that a total of fifty one (51) tickets were reported. As of May 2013, all fifty one (51) have been closed. Of the 51 failures 2 were identified as link failures. The breakout of faults is illustrated as follows:



2.9 Regarding availability statistics per node as shown the below:

| Country | % Availability |
|--------------------------|----------------|
| Anguilla | 96.0 |
| Antigua | 93.6 |
| Barbados | 99.4 |
| Dominica - Canefield | 93.4 |
| Dominica - Melville Hall | 99.1 |
| Grenada | 97.9 |
| Guadeloupe | 99.1 |

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| | |
|--------------------------|-------|
| Martinique | 99.3 |
| Montserrat | 99.0 |
| Nevis | 98.9 |
| St Kitts | 91.3 |
| Saint Lucia -G F Charles | 99.1 |
| Saint Lucia- Hewanorra | 97.8 |
| St Vincent | 99.0 |
| Trinidad | 99.7 |
| Tobago | 99.6 |
| United States (San Juan) | 93.2* |

2.10 The Meeting noted that the availability figures need to reflect the actual time that the applications were available in addition to the network availability. Planned preventative maintenance time needs to be removed from the overall unavailability figures to reflect true availability. France requested that utilization figures be included in performance reports in addition to comparison figures for similar previous periods. The first such report on utilization, availability and comparison is to be presented to the first NTG teleconference in August 2013.

2.11 The Meeting emphasized that for Civil Aviation purposes an availability figure of at least 99.9% is required, which shall be included in the E/CAR AFS Network SOP. In this regard the meeting formulated:

Draft Conclusion

E/CAR/NTG/4/03 E/CAR AFS Network Availability improvement

In order to improve the E/CAR AFS network availability that:

- a) TSTT analyse and identify any issues that can improve availability figures per node and advise the E/CAR/NTG Rapporteur by September 30th 2013 and
- b) E/CAR AFS Members to be informed of the actions to be taken to improve the local node availability by the next teleconference in August 2013.

Draft Conclusion

E/CAR/NTG/4/04 E/CAR AFS Network Availability statistics

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In order to improve the Network availability information reported and analysed by the E/CAR AFS Network members that TSTT:

- a) To calculate the network availability per node discriminating the preventive maintenance downtime;
- b) To provide a bandwidth utilization graphic with individual node presentation;
- c) Include on these graphic updates a comparative approach with the previous Network report to identify improvements; and
- d) Submit the new information to the E/CAR AFS Members before the first teleconference.

2.12 Under WP/07 France informed the Meeting that the E/CAR AFS network (MPLS) is globally performing correctly and the full architecture has been implemented. The Web portal and the email address are working correctly. The TTCAA METRO supervision is quite useful and is functioning correctly. France commented that the network is becoming more and more critical as more and more information is and will be transmitted via this network and noted that specific attention has to be addressed to performance monitoring and reactivity to repair when a failure occurs.

2.13 France noted that while the web portal tool is good, feedback related to failures should be enriched with causes and corrective actions. Information is required before any configuration change, even if no impact is foreseen. Cisco routers software is a central point of the network. If a problem occurs during a configuration change, all the network could be down and backup procedures should be ready, as well as information to end users. The network is globally operating correctly but more efforts are needed to react and investigate more quickly when a problem is detected (MTTR has to be reduced). Communication with end users has to improve.

2.14 In light of the importance of the E/CAR/AFS Network and the current and future applications to be supported by the Network and further to the development of network contingency plans, draft conclusion E/CAR/NTG/4/xx was proposed:

Draft Decision

E/CAR/NTG/4/05 E/CAR AFS Network Contingency Procedures

That France and the United States develop network contingency procedures and present the final version of this document to the E/CAR/NTG/5 meeting.

2.15 Under WP/05 Barbados informed that there has been an increased number of faults associated with the E/CAR AFS Network. During the period July 2012 to May 2013 there were five (5) recorded failures associated with the voice Network and seven (7) failure reports associated with the data Services. The increase number of failures is mainly associated with the data services. The pattern of voice failures with Martinique remained unchanged. Performance is still however reasonably good. The fault resolution and Network performance data needs to be analysed to identify and address any apparent trends. Several voice failures with TFFF were commented and draft conclusion was formulated:

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Draft Conclusion

E/CAR/NTG/4/06

Voice failures between Barbados and Martinique

That TSTT reviews the dial plan and any activity needed to resolve the voice communications between Barbados and Martinique before 30 June 2013

2.16 Under WP/06 ECCAA in representation of the OECS States informed on the performance of the network. Some states reported that the services have been working well. Some states reported intermittent failures while others experienced major failures which were attributed to end equipment problems that resulted in speech and data outages for extended periods. Lack of feedback continued to be a problem after faults were reported. The need for more speedy resolution of problems was identified.

- Anguilla – Voice has been functioning satisfactorily. AFTN problems have been attributed to end-user equipment. Note: Anguilla is operating on one router. The second router being damaged due environment deterioration.
- Antigua – Voice has been functioning satisfactorily. AFTN problems have been attributed to end-user equipment.
- Grenada – Voice and data have been operating with few failures.
- Dominica - Both Data and Speech have been functioning satisfactorily at both airports over the past twelve months.
- Montserrat- Both Data and Speech lines have been serviceable over the past six months.
- St. Kitts/Nevis - From all reports both Data and Speech have been functioning satisfactorily. Note: St. Kitts is operating on one router. The second router being damaged due environment deterioration.
- St. Lucia/George Charles – Voice has been functioning satisfactorily.
- St. Lucia/Hewanorra – Voice and AFTN at Hewanorra has been quite satisfactory as reported by the SATCO. There were no serious issues that required technical intervention.
- St. Vincent - ATCOs have been reporting intermittent dropouts of calls on the speech service. This has been an on-going problem for the past four months. The cause of the problem is currently under investigation. The AFTN has been functioning satisfactorily.

2.17 ECCAA reported that there appeared to be some conflict between TSTT and Jamaica as LIME in Jamaica has been contacting Antigua and St. Kitts as regards to reported failures on the network. This matter was reported to TSTT during the meeting.

2.18 The United States confirmed that the network was performing very well.

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2.19 The meeting noted that many failures were as a result of application failure, as in the case of the AMHS, and not necessarily network failure.

2.20 Under WP/8, in the third quarter (June) of 2011 Trinidad and Tobago introduced an on-line web-based fault reporting and resolution application (Top desk), which would allow users of the Eastern Caribbean AFS network to log faults and receive timely resolution information. Passwords were assigned per State to ATC, AIS, Engineering/NOC and Administration departments which allowed users the ability to enter a fault and view subsequent feedback information on resolution for their State/Territory. The application provides statistics and reports for all States/Territories. Reports and statistics may be generated per State, per period, per type of failure, etc. The process and usage of the implementation of this application was informed to the E/CAR/NTG/3 Meeting.

2.21 At the E/CAR/NTG/3 Meeting Users were urged to utilize the Top desk application as the primary means to log fault reports and in this regard the Meeting formulated Conclusion E/CAR/NTG 3/01 Use of Top Desk fault reporting application. The meeting was informed that additional one-on-one on-line training is available upon request. The Top desk application is available at: www.caa.gov.tt. In this regard the following draft conclusion was agreed:

Draft Conclusion

E/CAR/NTG/4/07

Improvement to failure report description and feedback

Since Trinidad and Tobago is responsible for the operation and outcomes of the Top Desk application, that Trinidad and Tobago:

- a) Clearly identify the type of failure (application or network) in its responses on Top desk;
- b) Provide feedback to all failure reports; and
- c) Report these improvement to the next teleconference

2.22 Most of the OECS States have been utilizing the Top Desk reporting tool for documenting faults. In the OECS ATC/AIS report all faults to the ECCAA Technical staff who in turn logs the fault on Top Desk. In the States where there is no Technical staff, the AIS officer logs the fault on Top Desk or reports directly via telephone to AIS/TTCAA. This is the case for Dominica. In this regard the following draft conclusion was agreed:

Draft Conclusion

E/CAR/NTG/4/08

ECCAA AFS Network procedure improvements

Since ECCAA is the CNS Service Provider for the OECS States and that a minimum maintenance level review is made before issuing a failure report, that:

- a) ECCAA to review and update their maintenance reporting procedure with their ECCAA Members by the end of July 2013; and
- b) Trinidad and Tobago to provide Dominica an online training for the use of the Top Desk application.

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2.23 To improve the performance of Top desk the following matters are noted:

- a) Users to avoid multiple reports of the same problem.
- b) TTCAA to manually enter the associated TSTT fault number to correlate to the State's report on Top desk.
- c) When a failure occurs, local State technician should carry out their verification checks on end-user equipment and other related equipment operating with the E/CAR AFS Network and after this verification coordinate the failure report to the TTCAA.
- d) Sometimes the Top desk application stops responding. This has been reported to the provider of Top desk. When this happens the only solution is to exit and re-enter the application. Also, from the States point of view, one browser may work and another may not; Microsoft Internet Explorer works and Google Chrome may not. This changes from time to time as experience has shown.
- e) States and Users are urged to ensure dissemination of the username and password to all relevant personnel.
- f) TSTT is urged to provide timely and meaningful resolution information.

Implementation of AMHS and AISS/Central FDP System

2.24 In keeping with ICAO Global Plan Initiative 18 (GPI-18) AERONAUTICAL INFORMATION: To make available in real-time quality assured electronic information (aeronautical, terrain and obstacle) and GPI-22 COMMUNICATION INFRASTRUCTURE: To evolve the aeronautical mobile and fixed communication infrastructure, supporting both voice and data communications, accommodating new functions as well as providing the adequate capacity and quality of service to support ATM requirements and The ICAO Flight Plan 2012 requirement; Trinidad and Tobago Civil Aviation Authority embarked on two projects for the supply and installation of an Air Traffic Services Message Handling System (AMHS) and an Aeronautical Information Services System (AISS) with COMSOFT and IDS Technologies respectively

2.25 The Thales AFTN terminals have been replaced by the AMHS User Agent (UA) terminals. Presently the UA's are operating in AFTN mode only. The AFTN terminals will be removed by end July 2013. The UAs are connected to the Switching Centre via the MPLS as the primary connection and via VPN as the secondary connection.

2.26 The AISS is designed to support several key applications including NOTAM, Flight Plan (2012), MET, Charting, Procedure Design and Electronic AIP. It has a Central Database built on the AIXM 5.1 model. All Flight Plans, NOTAM and Meteorological data received by the AFTN/AMHS Switching Centre are copied to the AISS for storage and can be accessed using Standard ICAO request proposal over the AFTN or by all AISS Workstations directly connected. The Primary Connection for the AISS Workstations on the ECAR states is via the MPLS. Secondary connection is available via the Internet.

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2.27 Trinidad and Tobago has a Centralized Database (SPATIA) which contains all FPLs entering and exiting the Piarco FIR through which requests for copies of FPL can be addressed. The Address is TTPPAISS. The supplier of SPATIA is currently working on a solution for using a Single Address for Filing of FPL destined to states in the Eastern Caribbean. The solution would allow SPATIA to analyze the route of Flight and disseminate said FPL to the respective AFTN/AMHS terminals and all FDP systems of the ECAR. This solution which is expected by the end of September 2013 would eliminate the issue of Missing and Duplicate FPLs at the FDPs in the ECAR. Testing and consultation with the ECAR states is expected to be conducted during the months of October/November 2013.

2.28 The AMHS UAs and the AISS Workstations with the necessary training was completed during the period 4th January 2013 through the 1st March 2013 as presented in **Appendix A. Appendix B** presents a summary of the AMHS/AISS installation.

2.27 The following are comments by OECS States on the AFTN/AMHS/AISS:

- Anguilla - The AMHS/AISS have been functioning intermittently. The fault appears to be related to end equipment problems
- Antigua- The AMHS/AISS has been very unstable and constantly required resetting.
- Grenada- February 18, 2013. Spatia system reported to be malfunctioning. System was restored February 20, 2013.
- Dominica- AMHS/AISS have been satisfactory
- Montserrat - The CADAS system has been unserviceable from the time of installation.
- Saint Lucia – George Charles - The AFTN/AMHS/AISS at George Charles has been experiencing problems over the past six months. There have been daily intermittent failures on the Spatia Web system. Though not as frequent, the CADAS system has also had failures. However, in the past two weeks of May 2013 an improvement was noted in the past two weeks in the serviceability of the equipment. The service interruptions are few especially on the CADAS. The Speech/Voice components have been functioning effectively and do not appear to have serviceability issues at this point.
- Saint Lucia – Hewanorra - AFTN has been quite satisfactory as reported by the SATCO.
- Saint Vincent - The AFTN has been functioning satisfactorily.

2.28 Trinidad and Tobago requested that in order to improve the maintenance response, the on-site technical support should try to provide as much information as possible on AFTN/AMHS/AISS failures. States were encouraged to utilize the procedures that were provided at the installation to check connectivity of CADAS and SPATIA with Piarco. Also on CADAS there is the facility to do an alarm log query and then a screen shot. This can be saved as an image on a flash drive and can be attached to an email that can be sent to Trinidad and Tobago. No procedure was provided for saving screen on SPATIA because it is Windows based and a screen shot can be done using the 'prntscrn' key stroke. Subsequent to the installation States were emailed to contact the TTCAA technicians on any issues encountered.

2.29 In IP/03 the United States informed the meeting with regards to the last AMHS workshop/meeting which was hosted by the United States/FAA in coordination with ICAO in Miami, FL

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on 11-13 April 2012. The workshop provided participants with a forum to exchange experiences, guidance on implementation of AMHS as well as implementation activities and schedule updates. Since then the pace of implementation of AMHS systems in the region has increased. Currently the FAA is working with 6 CAAs toward the implementation of the circuits for interconnecting their AMHS system.

2.30 The FAA is working with the CAA's of the Dominican Republic, St Maarten, Curaçao, Trinidad and Tobago, COCESNA, and Turks and Caicos to migrate their AFTN connections to AMHS. The status of the various AMHS Implementation Projects is as follow:

- Dominican Republic: The initial phase of the Interoperability Testing was performed through a VPN over the Internet. Subsequent phases were performed over a MEVA II 64kbps IP circuit. Interoperability Testing is almost completed; the project is entering the Cutover Phase.
- St Maarten: Interoperability Testing is pending the implementation of a MEVA II 64kbps IP circuit.
- Curaçao: Interoperability Testing is pending the implementation of a MEVA II 64kbps IP circuit.
- Trinidad and Tobago: Interoperability Testing is pending the definition of the physical interface for the FAA 64kbps IP circuit between the E/CAR AIFSS router in San Juan CERAP and Atlanta NEMC.
- Turks and Caicos: The initial phase of the Interoperability Testing will be performed through a VPN over the Internet. Subsequent phases will be performed over a 64kbps IP circuit between Grand Turks ATCT and Atlanta NEMC. Currently Turks and Caicos and the vendor are redesigning TCIAA's AMHS System (MTA and User-Agents).
- COCESNA: The initial phase of the Interoperability Testing will performed through a VPN over the Internet. Subsequent phases will be performed over a MEVA II 64kbps IP circuit.
- Jamaica: The initial phase of the Interoperability testing will be initiated soon.

2.31 The next ICAO/FAA AMHS workshop is tentatively scheduled for September 2013 in Dominican Republic.

Participation in MEVA III RFI Process

2.32 Under IP02, the Meeting was informed of the E/CAR/NTG Rapporteur participation in the MEVA III RFI process in representation of the E/CAR AFS Network in accordance to the Second Meeting of the E/CAR/NTG Decision E/CAR/NTG/2/10 *Planning for the implementation of a Common Request for Information (RFI) document for the CAR Region telecommunication networks* further to shared information between the E/CAR NTG and the MEVA TMG on the separate planned renewal of the E/CAR AFS and the MEVA Networks.

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2.35 The RFI document and the associated WBS Gant chart were presented to the Twenty-fourth MEVA TMG Meeting which was held in Mexico City, Mexico from August 21-23, 2012. The meeting reviewed and approved the telecommunication requirements to be covered by the interconnection of the MEVA II and E/CAR AFS Network.

2.36 After coordination for the announcement, the RFI was issued by United States, ICAO and Trinidad & Tobago on 14th September 2012 through 4th December 2012. In preparation for Vendors' RFI responses, ICAO in request of the MEVA TMG, created a website called "MEVA III Activities" to make available all the meeting results, task force deliverable and provide a common reference for all the MEVA Members to follow and discuss. Vendor responses were received and reviewed by the Task Force between 11th and 13th December 2012. Presentations were made by the qualified vendors at the Twenty-fifth MEVA TMG Meeting which was held in Mexico City, Mexico from 8 to 11 January 2013.

2.37 Only members of the MEVA/TMG are included in the RFP process by Letter of Agreement therefore the MEVA/TMG/25 meeting concluded the mandate given to the Rapporteur of the E/CAR/NTG to ensure MEVA-E/CAR interconnectivity requirements are included in the MEVA III.

E/CAR AFS Network Interconnection to MEVA

2.38 Under WP/10, the MEVA TMG Coordinator presented the progress and results of the work of the E/CAR/NTG and the MEVA regarding the E/CAR AFS – MEVA II network interconnectivity and the progress of the E/CAR Radar sharing project. It was agreed that San Juan, Puerto Rico would be the point of interconnection for both networks since San Juan has both a MEVA node and an E/CAR AFS Network node. The interconnectivity would allow St. Maarten to share their radar with Trinidad and Tobago as part of the radar feeds that will support the Radar Data Server project to be implemented for the E/CAR States/Territories in addition to the exchange of radar between St. Maarten and San Juan. Conclusion 25/09 *MEVA II-E/CAR AFS Network Interconnection* was formulated.

2.39 The MEVA II – E/CAR AFS Network interconnection requirements discussed have been included in the MEVA III Tender Package version 1.0 for the MEVA III Tender process.

APPENDIX B
 Fourth Eastern Caribbean Network Technical Working Group Meeting (E/CAR/NTG/4) and
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AMHS/AISS ECAR INSTALLATION AND TRAINING FROM 04JANUARY-01 MARCH 2013

| ◀ Dec 2012 | | ~ January 2013 ~ | | | | | Feb 2013 ▶ |
|---|---|---|---|---|---|--|------------|
| Sun | Mon | Tue | Wed | Thu | Fri | Sat | |
| | | 1 | 2 | | 4 Techs Arriving in Montserrat- | 5 AMHS AISS Installation- MNI | |
| 6 Techs Training -MNI AIS#1-Joseph Jaggan Montserrat | 7 Techs Audit Eqpt & Depart to Antigua Arr:5:15pm Dep:5:35pm AIS Training Day 1 -MNI | 8 Techs Audit Off-site Eqpt in Antigua AIS Training Day 2- MNI | 9 AMHS/AISS Installation- Antigua AIS Training Day 3- MNI | 10 Techs Training- Antigua AIS Depart to Antigua | 11 Techs Audit Eqpt & Departure to Anguilla ANU-ANG Dep:430pm Arr:5:45pm AIS Training Day 1- Antigua | 12 AMHS/AISS Installation Anguilla AIS Training Day 2- Antigua | |
| 13 Rest Day | 14 Techs Training-Anguilla AIS Training Day 3 & Depart to Anguilla Dep:5:00pm Arr:5:40pm | 15 Techs Audit Eqpt in Anguilla AIS Training Day 1- Anguilla | 16 Techs Dept Anguilla to St.Kitts Dep:3:50pm Arr:8:00pm AIS Training Day 2- Anguilla | 17 AMHS/AISS Installation (SKB) AIS Training Day 3 | 18 Techs Training (SKB) AIS Depart to St. Kitts Dep:3:50pm Arr:8:00pm | 19 Techs Audit Eqpt (SKB) & Depart to Nevis DeP:6:40pm Arr:6:55pm AIS Training Day 1 -SKB | |
| 20 AMHS/AISS Installation -Nevis | 21 Techs Training- Nevis AIS Training Day 2 -SKB | 22 Techs Audit Eqpt AIS Training Day 3 & Depart to Nevis Dep:6:40pm Arr:6:55pm | 23 Techs to depart from Nevis & to Dominica Dep:1:50pm Arr:3:50pm AIS Training Day 1-Nevis | 24 AMHS/AISS Installation- Dominica (DOM) Canefield AIS Training Day 2-Nevis | 25 Techs Training-DOM AIS Training Day 3-Nevis & Depart to Dominica Dep:1:50pm Arr:3:50pm | 26 Techs Audit Eqpt AIS Training Day 1 –DOM / Canefield | |

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| ~ January 2013 ~ | | | | | | |
|---|--|---|--|--|--|-----|
| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
| 27 Rest Day Techs Depart to Meville Hall | 28 AMHS/AISS Installation-Meville Hall AIS Training Day 2-Canefield | 29 Techs Training-Melville Hall AIS Training Day 3-Canefield & Depart to MevilleHall | 30 Techs Audit Eqpt- & depart to St. Lucia Dep:9:20pm Arr:10:00pm AIS Training Day 1-MelvilleHall | 31 AMHS/AISS Installation St.Lucia-George Charles (SLU) AIS Training Day 2-MelvilleHall | Notes: Color Code Red-Technicians Black Bold –AIS Green –Extra day to accommodate off site Audit | |

April

| ~ February 2013 ~ | | | | | | |
|--|--|--|--|--|---|---|
| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
| | | | | | 1 Techs Training-SLU AIS Training Day 3-MelvilleHall & Depart to POS Dep: 5:40pm Arr:7:35pm | 2 Techs Audit Eqpt off Site with Cable Wireless |
| 3 Rest Day AIS #2-Ricky Bissessar Arriving St.Lucia Dep:1:45pm Arr:2:50pm | 4 Techs Audit Eqpt -SLU AIS Training Day 1-George Charles | 5 AMHS/AISS Installation-Hewanorra AIS Training Day 2-SLU | 6 Techs Training-Hewanorra AIS Training Day 3-SLU | 7 Techs Audit Eqpt & Depart to St. Vincent (SVD) Dep:10:20pm Arr:10:50pm AIS Training Day 1-Hewanorra | 8 AMHS/AISS Installation-SVD AIS Training Day 2-Hewanorra | 9 Techs Training –SVD AIS Training Day 3-Hewanorra & Depart to St. Vincent Dep:10:20pm Arr:10:50pm |
| 10 Rest Day | 11 Techs Audit Eqpt AIS Training Day 1-SVD | 12 Depart from SVD to Fort de France (FOF)-Martinique Dep:6:00am Arr:10:20am AIS Training Day 2-SVD | 13 AMHS/AISS Installation-FOF AIS Training Day3-SVD (FOF) | 14 Techs Training-FOF AIS Depart from SVD to Fort de France-(FOF)-Martinique Dep:6:00am Arr:10:20am | 15 Techs Audit Eqpt & Depart to Guadeloupe (PPR) Dep:7:45pm Arr: 8:30pm AIS Training Day 1-FOF | 16 AMHS/AISS Installation-PPR AIS Training Day 2-FOF |

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| ◀ Jan 2013 | | ~ February 2013 ~ | | | | | | Mar 2013 ▶ |
|-----------------------|---|--|---|--|--|--|--|------------|
| Sun | Mon | Tue | Wed | Thu | Fri | Sat | | |
| 17 Rest Day | 18 Techs Training-PPR AIS Training Day 3 & Depart to Guadeloupe-PPR Dep:7:45pm Arr:8: 30pm | 19 Techs Audit & Depart to Barbados (BGI) Dep:4:30pm Arr:10:20pm AIS Training Day 1-PPR | 20 AMHS/AISS Installation-BGI AIS Training Day 2-PPR | 21 Techs Training –BGI AIS Training Day 3 & Depart to Antigua & Overnight Dep:8:00pm Arr:8:30pm | 22 Techs Audit Eqpt -BGI Arriving Barbados Arr:8:00am AIS Training Day 1 -BGI | 23 Techs Audit Eqpt Off-site with Cable & Wireless & Depart to Grenada (GND) Dep:6:30pm Arr:8:00pm AIS Training Day 2-BGI | | |
| 24 Rest Day | 25 AMHS/AISS Installation-GND AIS Training Day 3-BGI | 26 Techs Training –GND Depart from BGI to Grenada (GND) Dep:12: | 27 Techs Audit Eqpt GND and Depart to POS Dep:8:45pm Arr:9:25pm AIS Training Day 1-GND | 28 AIS Training Day 2-GND | March 01 AIS Training Day 3-GND & Depart to POS Dep:8:15pm Arr:8:55pm | | | |

| LOCATION | STATUS OF INSTALLATION | FOLLOW UP FOR STATE | FOLLOW UP FOR TTCAA/COMSOFT/IDS |
|------------------------|------------------------|--|---|
| Anguilla | Completed | None | 1. The CADAS-ATS printer form feeding after one message is printed; 2. Alarm log reporting a loss of connection with the server. |
| Antigua | Completed | None | 1. The CADAS-ATS printer form feeding after one message is printed; 2. Alarm log reporting a loss of connection with the server. |
| Barbados | Completed | None | CADAS-ATS printer form feeding after one message is printed |
| Dominica-Canefield | Completed | None | CADAS-ATS printer form feeding after one message is printed |
| Dominica-Melville Hall | Completed | None | CADAS-ATS printer form feeding after one message is printed |
| Grenada | Completed | To provide internet not going through a proxy server in order to connect the CADAS AMHS system | CADAS-ATS printer form feeding after one message is printed |
| Guadeloupe | Completed | To provide internet not going through a proxy server in order to connect the CADAS AMHS system | 1. CADAS-ATS printer form feeding after one message is printed 2. Changing the CADAS system to a French Keyboard |
| Martinique | Completed | To provide internet not going through a proxy server in order to connect the CADAS AMHS system | 1. CADAS-ATS printer form feeding after one message is printed 2. Changing the CADAS system to a French Keyboard |
| Montserrat | Completed | None | CADAS-ATS printer form feeding after one message is printed |
| Nevis | Completed | None | 1. CADAS-ATS printer form feeding after one message is printed 2. Alarm log reporting a loss of connection with the server |
| St. Kitts | Not Completed | <ol style="list-style-type: none"> To install the CADAS-ATS system in the tower St. Kitts will need to install a modem to provide Ethernet connection over the copper cable that connects the AIS and the Tower). Until connection can be established between the two buildings to extend the network St. Kitts will relocate the CADAS-ATS to the AIS office. The output trunk connection from TSTT will now have to be | CADAS-ATS printer form feeding after one message is printed |

| LOCATION | STATUS OF INSTALLATION | FOLLOW UP FOR STATE | FOLLOW UP FOR TTCAA/COMSOFT/IDS |
|--------------------------|------------------------|--|---|
| | | <p>connected to the modem supplied by the Airport's technical department and the LAN switch relocated to the AIS office to accommodate the CADAS and AISS.</p> <p>3. Local technical staff to relocate the CADAS-ATS hardware from the tower to the AIS office and make the necessary connection to the AFS network.</p> | |
| St. Lucia-George Charles | Completed | The COMSOFT CADAS workstation's VPN connection could not be established via proxy server. Comsoft has recommended a dedicated DSL line be provided for this connection. | CADAS-ATS printer form feeding after one message is printed |
| St. Lucia-Hewanorra | Completed | The COMSOFT CADAS workstation's VPN connection could not be established via proxy server. Comsoft has recommended a dedicated DSL line be provided for this connection. | CADAS-ATS printer form feeding after one message is printed |
| St. Vincent | Completed | <p>1. To provide appropriate Internet connection</p> <p>2. ECCAA technicians to install a separate AC supply on an independent breaker for the AMHS/AISS</p> | CADAS-ATS printer form feeding after one message is printed |

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Agenda Item 3: Radar Data Sharing Activities

Radar Data Agreement and Teleconferences Follow-Up

3.1 Under WP/12 the meeting was informed of the progress of the radar data server, the infrastructure needed for this radar data exchange and the offer made by France of the System Tracks from the radar sensors of Martinique and Guadeloupe to E/CAR States in addition to the Radar Data server in Trinidad and Tobago.

3.2 The Meeting took note that from the E/CAR Radar Data Sharing Teleconferences, the following results were achieved:

- a) Exchange of radar data coverage between France, Trinidad and Tobago, Barbados, Antigua and United States - theoretical radar coverage (FL 50, 100, 150,200 and 300).
- b) Completion of radar questionnaire by all participating parties.
- c) Trinidad and Tobago reported the progress and results of the coverage tests to ICAO and the States. Provisional testing was carried out on 20-21 September 2012 with St. Vincent and Grenada. Trinidad and Tobago reported the planning and results of the coverage tests to ICAO and the States.
- d) Trinidad and Tobago submitted the required information (ICD and the corresponding SIC/SAC codes) to French Antilles and the PIARCO radar merged data.
- e) France conducted the testing of their radar displays. In this regard it was informed that TSTT is working with SNA/AG on the resolution of the telecom issues for the transportation of the radar data from Piarco to Martinique.
- f) ECCAA confirmed the commitment that St. Kitts and Nevis, Saint Vincent, Montserrat and Grenada will be part of the radar data sharing project. Antigua, Barbados, Dominica, France, Saint Lucia, Trinidad and Tobago and United States also committed to the radar project. Completion of the information on the E/CAR members' use of the radar data and the quantity of CPUs by each State/territory is provided below.

| State / Territory | Use of radar Data | Remarks |
|-----------------------|---|--------------------|
| Anguilla | Situational awareness | |
| Antigua & Barbuda | Situational awareness/ Radar Control | |
| Barbados | Radar Control | ATC System on site |
| Dominica | Situational awareness | |
| French Antilles | Radar Control | ATC System on site |
| Grenada | Situational awareness | |
| Montserrat | Situational awareness | |
| St. Kitts and Nevis | Situational Awareness | |
| Saint Lucia | Situational awareness | |
| Saint Vincent and the | Situational awareness | |

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| | | |
|---------------------|---------------|--------------------|
| Grenadines | | |
| Trinidad and Tobago | Radar Control | ATC System on site |

- g) France provided Saint Lucia and ECCAA some operational guidance on the use of radar data as situational awareness based on their experience on the procedures used in Cayenne.
- h) ECCAA agreed to coordinate with their ECCAA Members participating in the radar data activities to determine the operational requirements to implement and use the radar data for situational awareness.
- i) The updated list of Points of Contacts for the E/CAR radar sharing implementation was completed as **Appendix A**.

3.3 The 4th E/CAR Radar Data Sharing Teleconference, the E/CAR/NTG/4 Meeting and the 5th E/CAR Radar Data Sharing Teleconference updated the implementation plan and the technical specifications (**Appendix B** and **Appendix C**).

Operational Requirement Review

3.4 France gave a demonstration of their radar data display IRMA 2000 and differentiated the data displayed upon the selection of Martinique, Guadeloupe and Dacota in addition to the safety nets, zoom, maps and alerts capabilities. The meeting congratulated France on the usefulness of the demonstration.

3.5 The meeting was informed of the radar coverage of Trinidad and Tobago, Martinique, Guadeloupe, Antigua, Sint Maarten, Barbados and the benefits of specific overlap coverage from the radars and identified the States that could benefit from either single radar or multiple radars. This coverage is shown in **Appendix D**.

3.6 Under WP/14 ECCAA provided some operational requirements for providing Situational Awareness and recalled the information exchange for operational experiences in situational awareness being conducted between France, Saint Lucia and ECCAA. In this regard the meeting formulated

Draft Conclusion

E/CAR/NTG/4/09

Review of Operational Guidance Material

That ECCAA in collaboration with France and Saint Lucia review the operational guidance material and present a final draft to the Radar Sharing Rapporteur no later than 31st July 2013.

Radar Display Trial Results-France

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3.7 Under WP/13, in order to promote the use of radar within E/CAR, for testing available radar coverage and radar services in ECAR Region, France has proposed to test the compatibility between IRMA2000 V7 (last version) and TTCAA MRT.

3.8 IRMA2000 trials were supposed to be conducted on live traffic. Different solutions were studied to bring the data to Martinique: via E/CAR network or via IPLC radar link (direct link from Piarco to Martinique). The last tentative was to open a virtual circuit from the TTCAA MRT through E/CAR to the AISS/AMHS switch. Unfortunately, no data was received. During a visit to Trinidad and Tobago in April 2013, France obtained from TTCAA a recorded file with TTCAA MRT data. This data was replayed on France's test network. Data was not fully correctly displayed on the French system, i.e. information was not fully decoded and displayed. Further investigation is on-going in Toulouse, south of France, by radar engineers, where that last version of IRMA2000 V7 is being developed. IRMA2000 surveillance display is not capable, in its present state, to process correctly TTCAA MRT data. There is no warranty that the problem could be solved by Toulouse technical service in charge of the software, due to other priorities. In this regard monoradar data from Barbados and from TTCAA will be analysed by France for its display in the IRMA CPUs.

Analysis of Radar Coverage in Grenada and Saint Vincent

3.09 Under WP/16, the composite radar data from the Guadeloupe, Martinique and Trinidad and Tobago radars was analysed by TTCAA for the TMAs of St Vincent and Grenada. The results of these observations have been tabulated and a report is presented in **Appendix E**.

3.10 Trinidad and Tobago provided a demonstration of the actual coverage recorded. It is expected that, as soon as the Barbados radar feed is integrated into the Piarco ATM System. This analysis will be conducted again, and the report will be adjusted to reflect the findings. The meeting congratulated Trinidad and Tobago for this demonstration.

3.11 Over the next three months, Trinidad and Tobago intends to continue its analysis of the usability of the composite radar data for all of the States within the E/CAR Region.

Implementation of radar data sharing tasks

3.12 The agreement for a Central Radar Data server and the agreement for sharing/using the radar data among the E/CAR States and Territories represent an important improvement on safety and efficiency with notable improvements on ATC situational awareness in the region. Also the efforts on exchanging radar data as Trinidad-France and Trinidad-Barbados, contributes to improve the accuracy and redundancy of the radar service in the E/CAR Region.

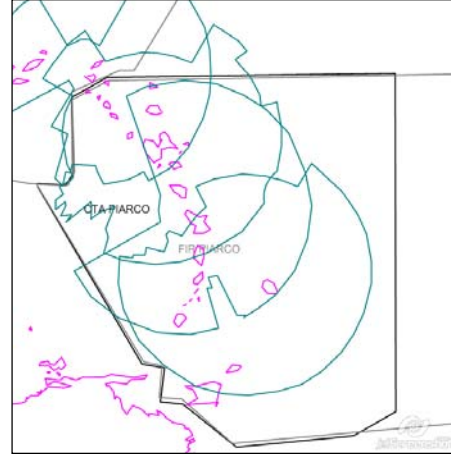
3.13 The implementation of the Multi-protocol label Switching (MPLS) Network and the automated level of the systems by Trinidad and Tobago has permitted the approach of exchanging radar data with the adjacent FIRs, as follows:

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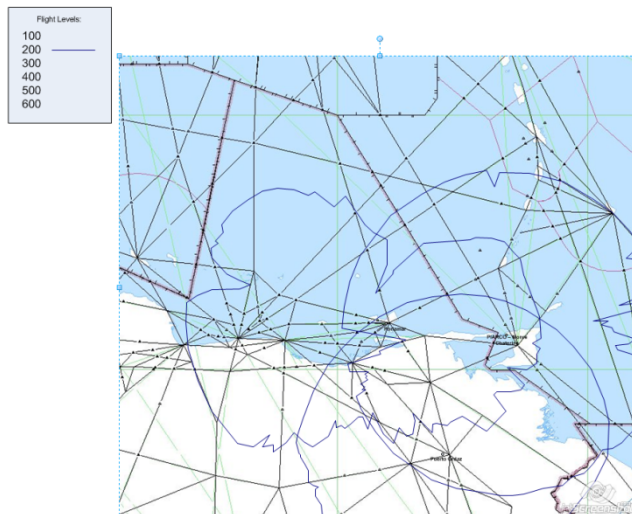
3-4

Trinidad and Tobago - Sint Maarten (under the MEVA II- ECAR interconnection)

- 4 teleconferences
- Radar Data requirement included in E/CAR AFS Network and MEVA Network
- Radar data coverage exchange
- Sint Maarten Radar provides improved low level coverage and redundancy feed
- Review of technical requirements: ongoing
- Agreement for administrative issues: ongoing



Trinidad and Tobago- Venezuela Radar Exchange



- 4 Teleconferences
- Radar data communication can be achieved through REDDIG Network
- Radar data coverage exchange (2 radar coverages of interest to PIARCO: Porlamar and Puerto Ordaz)
- Radar feed provides radar coverage to PIARCO FIR and redundancy feed
- Bilateral meeting planned between Trinidad and Tobago and Venezuela
- Technical and administrative matters to be agreed

3.14 Under DP/01, the Meeting debated on the different activities to consider in the radar data sharing action plan update such as:

- a) medium term solution for the radar data sharing (new dedicated radar display using MRT radar data)
- b) short term solution with the use of France donated CPUs as an introduction to radar display. This implementation to be separated as Phase 1 for using the Dakota Radar Data and Phase 2 for those display using monoradar data
- c) MRT Radar data test
- d) monoradar radar data test
- e) RFI process to search market potential radar data display for long term solution
- f) E/CAR AFS Network configuration for radar data activities

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3.15 In this regard, several members of the Radar Data Sharing Adhoc Group expressed their commitment to move on with the implementation of the CPUs donated by France considering their geographical situation within the French radar coverage of Dakota radar data. These members committed to the acquisition of the necessary monitor for the CPU, local environmental conditions and last mile interconnectivity:

- a) Anguilla: 1 CPU
- b) Antigua and Barbuda: 2 CPUs for Antigua
- c) Dominica: 1 CPU for Melville Hall
- d) Barbados: 1 CPU
- e) Montserrat: 1 CPU
- f) St. Kitts and Nevis: 1 CPU for St. Kitts

3.16 Other States like Grenada and St. Vincent & the Grenadines will commit pending the successful outcome of the monoradar radar data tests.

3.17 France indicated that no specific maintenance is needed for the CPUs being donated and some corrective maintenance assistance may be provided. France also commented on the actions needed to proceed with the arrangement for the use of these CPUs. In order to facilitate this procedure the meeting agreed to the following draft conclusion

Draft Conclusion

E/CAR/NTG/4/010 Submission of Procedure to Request CPU Donated by France

In order to facilitate the procedure for obtaining the CPUs donated by France, that France submits to the Rapporteur E/CAR/NTG and ICAO a template with the necessary requirements and conditions to formalize the request for these CPUs, including the required environmental conditions no later than 30th June 2013.

3.18 Due to these commitments, the following draft conclusion was agreed:

Draft Conclusion

E/CAR/NTG/4/11 Implementation of Radar Data Displays with CPUs Provided by France

In order to facilitate the implementation of the Radar Data Displays based on the France provided CPUs, that:

- a) Trinidad and Tobago arrange the implementation of the radar data feed to each corresponding note for operation of each radar display no later than end of September 2013;

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- b) Anguilla, Antigua and Barbuda, Dominica, Barbados, Montserrat and St. Kitts and Nevis proceed with the acquisition of the necessary monitor and local power conditioning requirement for the CPU by the end of September 2013; and
- c) All participants in action a) and b) to provide progress to the E/CAR/DCA/25 Meeting.

Draft Conclusion

E/CAR/NTG/4/12 Update to Radar Data Sharing Implementation Action Plan

In order to update the activities for the radar data sharing implementation action plan, that Trinidad and Tobago:

- a) update the Radar Data Sharing Action Plan including all the actions and activities discussed and agreed in the E/CAR/NTG/04 Meeting, in terms of long and short term solution actions, States/territories implementing the Radar Displays in Phase 1 and 2, etc.;
- b) present an initial draft of this update to the next Radar Data Sharing Adhoc Group teleconference in August 2013 for approval; and
- c) present the final update to the E/CAR/DCA/25 Meeting.

3.19 Further to discussions on the details required for implementation of the radar sharing as proposed with the computers from France the meeting formulated

Draft Conclusion

E/CAR/NTG/4/13 Local Telecom Infrastructure

That the E/CAR States/territories implementing the Radar Displays in the short term solution, implement the necessary local telecommunications infrastructure to complete the connectivity of the circuits provided by the E/CAR AFS Network from the demarcation point of the E/CAR AFS network router.

3.20 The Radar Data Sharing Adhoc Group agreed to hold a follow-up teleconference to review and approve the E/CAR/NTG/04 reports and other activities for the implementation of the short term actions. This 5th teleconference is scheduled for 27 June 2013 at 15 UTC.

| State | Name | Contact Information |
|---------------------|------------------------|---|
| Anguilla | Lindon G. Hodge | Lindon.Hodge@gov.ai |
| Antigua | Shenneth Phillips | shennethp@yahoo.com |
| Barbados | Suzanne Griffith | Suzanne.Griffith@barbados.gov.bb |
| Dominica | Jean Williams | melvillehallairportmanager.daspa@cwdom.dm |
| France | Jean Jacques Deschamps | jean-jacques.deschamps@aviation-civile.gouv.fr |
| Grenada | Roselyn Charles | rcharles@mbiagrenada.com |
| Montserrat | Denzil Jones | jonesd@gov.ms |
| St Kitts + Nevis | Elsworth Warner | elsworth.warner@scaspa.com |
| Saint Lucia | Michael Lee | Michael.Lee@slaspa.com |
| Saint Vincent | Corsel Robertson | crobbie63@gmail.com |
| Sint Maarten | Raul Van Heyningen | rvanheyningen@sxmairport.com |
| Trinidad and Tobago | Veronica Ramdath | vramdath@caa.gov.tt/vramdath@gmail.com (Rapporteur) |
| United States | Dulce Roses | dulce.roses@faa.gov |
| ECCAA | Rudyard Ashe | rashe@eccaa.aero |

Radar Data Sharing Implementation Schedule to be completed after teleconference on 27th June 2013. To be presented in Final E/CAR/NTG/4-E/CAR/RD/2 Report

RADAR DATA DISPLAY Specifications to be discussed at teleconference scheduled for 27th June 2013 and to be presented in the Final Report E/CAR/NTG/4-E/CAR/RD/2

Overall radar coverage

Report on observed RADAR coverage of St. Vincent and Grenada TMAs

This report is generated based on actual observation of RADAR targets both within the lateral limits of the Grenada and St. Vincent TMAs, and up to 30 NM outside of the lateral limits.

The study was conducted with the TTPP, TFFF and TFFR RADAR sources available.

Findings

1.0 TVSV

- 1.1 Analysis of the data basically showed that for approximately 7-10 NM around the SV, there is no radar coverage below 2000 feet. The area of no coverage below two thousand feet is more pronounced to the south of the SV.
- 1.2 There is an area approximately 20 NM around the SV, where the radar coverage between 1000 feet and 2500 feet is variable. (Targets were observed to be dropping and reappearing).
- 1.3 There is another area stretching from about 10 NM SE of SV to the SE of Canouan, where there is no RADAR coverage below 3000 feet.
- 1.4 Throughout the rest of the St. Vincent TMA (with the exception of the areas identified above), there is reliable RADAR coverage above 1500 feet.

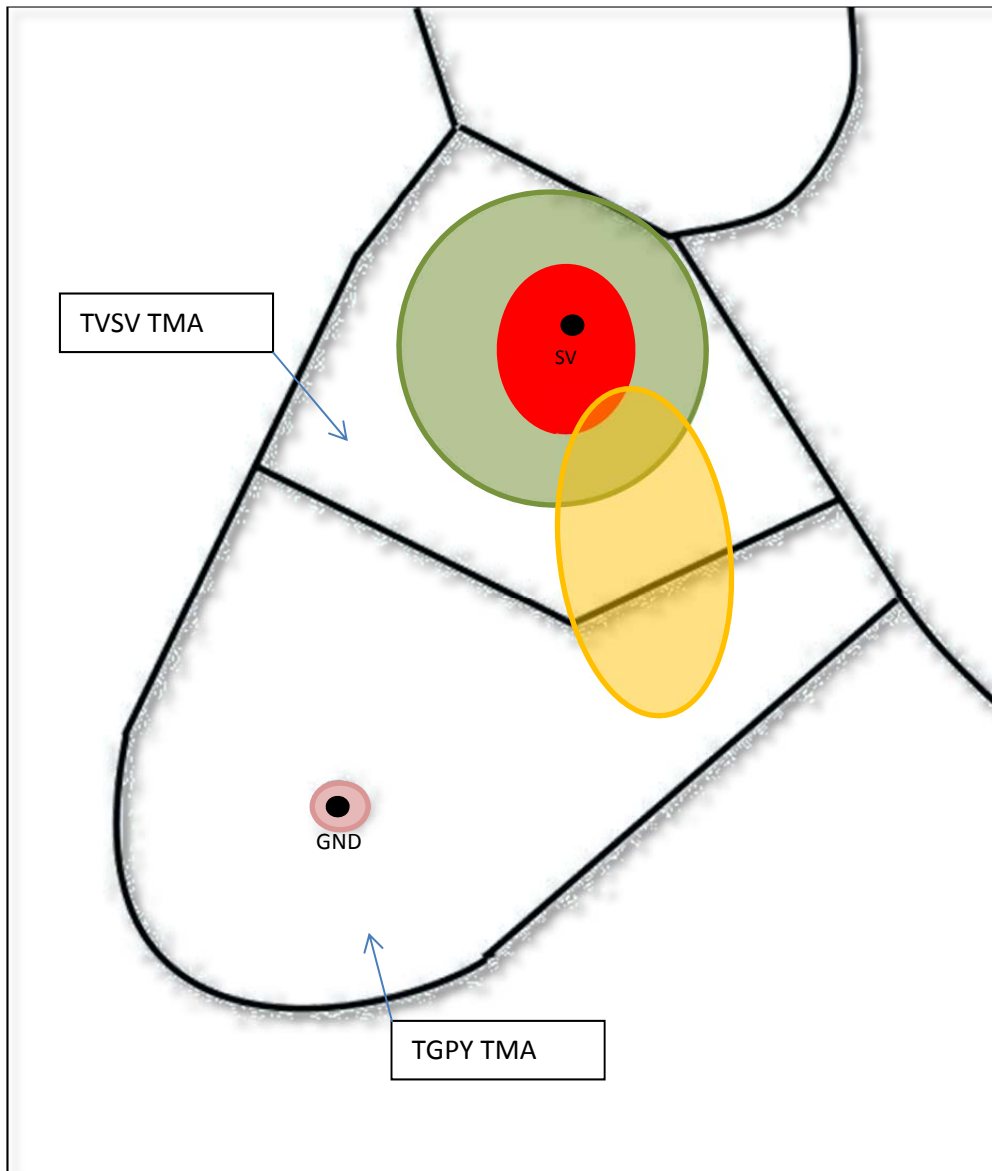
2.0 TGPY

- 2.1 The RADAR coverage observed around Grenada is significantly better than that around St. Vincent. The data showed that targets of arriving traffic were reliable up to approximately 500 feet within 0.5 NM of the GND. Departure targets were usually observed between 500 feet and 1000 feet within one (1) mile of the GND.
- 2.2 The area extending from within the St. Vincent TMA to the SE of Canouan also affects the Grenada TMA.
- 2.3 Apart from the two areas mentioned around the aerodrome, the RADAR coverage in the Grenada TMA appears to be reliable above 1000 feet.

3.0 30 NM outside of the two TMAs

- 3.1 There is reliable RADAR coverage above 2000 feet both south and west of the Grenada TMA. To the EAST, in the TBPB TMA, the coverage is reliable above 3000 feet.
- 3.2 There is reliable RADAR coverage above 2000 feet both north and west of the St. Vincent TMA. To the east, in the TBPB TMA, the coverage is reliable above 3000 feet.

The diagram below gives a visual representation of the observed data.



| | |
|--------|---|
| Red | 2000 feet and below – No coverage |
| Yellow | 3000 feet and below – No coverage |
| Green | 1000 feet – 2500 feet – Variable coverage |
| Orange | 500 feet and below – No coverage |

Agenda Item 4: Other Business

E/CAR/NTG Future Meetings

4.1 Under WP/11, the annual E/CAR/NTG meetings have proven to be very productive and effective, rapidly solving problems like the original E/CAR AFS Network issues, the implementation of the MPLS Network, the implementation of failure reporting features; facilitate coordination on new services implementation and to establish awareness and conscience on the network health, changes and expansion.

4.2 The Meeting recognized the challenges faced by States to fund participation at meetings, and recalled that the last two NTG meetings were combined with E/CAR/CATG-WG meetings same as the current NTG/4 meeting. The combination of meetings seems to be very cost-effective for participants to participate. However no E/CAR/CATG meeting scheduled for 2014 because a NACC/WG meeting is planned for 2014.

4.3 The Meeting recognized that for 2014 due to the expected improvements in the network performance, reporting and interconnection matters and the result on radar data sharing activities, a face-to-face meeting was needed after the teleconference coordination to be done in preparation for these improvements, so the meeting agreed that the next E/CAR/NTG meeting, E/CAR/NTG/5 shall be carried out with the radar data sharing Adhoc Group Meeting.

4.3 Notwithstanding the annual meetings, the E/CAR/NTG will hold periodic teleconferences hosted by the E/CAR AFS Network provider, Telecommunications Services of Trinidad and Tobago (TSTT) with the support of the ICAO NACC Regional Office.

4.4 In this regard, the Meeting agreed to request the E/CAR DCAs their support for looking for the hosting of the next E/CAR/NTG/05 and III Radar Data Sharing Adhoc Group Meetings, and agreed to formulated the following draft conclusion:

Draft Conclusion E/CAR/NTG/4/14

**Hosting of the next E/CARNTG/05 and III Radar
Data Sharing Adhoc Group Meetings**

In order to conduct the next E/CAR/NTG/05 and III Radar Data Sharing Adhoc Group Meetings together to discuss and agree on the matters related to the expected improvements in the network performance, reporting and interconnection, as well as the result on radar data sharing activities, that the E/CAR/NTG Rapporteur prepares the necessary dissertation for the DCAs in the coming E/CAR/DCA/25 for requesting the States support for a host country for these meetings

Update to E/CAR/NTG Terms of Reference (ToR)

4.5 The Meeting was recalled that the existing valid E/CAR/NTG's terms of reference were approved by the E/CAR/DCA/22 Meeting, Decision 22/6, to accomplish the following main objectives:

- a) Analysis and monitoring of the status of the current E/CAR AFS Network;
- b) Recommend measures to improve reliability of the E/CAR AFS Network for the immediate/near term; and
- c) Study, analyze and follow-up on the planning, documentation and implementation of the replacement of the existing E/CAR AFS Network.

4.6 Considering the progress and achievements of the E/CAR/NTG with the new MPLS network, the improvements in the reporting methodology, the changes to the E/CAR/NTG membership and other changes like the E/CAR/WG to E/CAR/CATG, a review and update of the Terms of Reference of the E/CAR/NTG was made for approval from the E/CAR DCAs. The revised ToR is presented in **Appendix A** to this part of the report.

**EASTERN CARIBBEAN NETWORK TECHNICAL GROUP (E/CAR/NTG)
TERMS OF REFERENCE**

1. Background

The Eastern Caribbean Network Technical Group (E/CAR/NTG) was established as a standing group in accordance with E/CAR/WG/31 Meeting, Conclusion 31/7, approved by the E/CAR/DCA/22 Meeting (Port of Spain, Trinidad and Tobago, 8-11 December 2009). The terms of reference of the E/CAR/NTG were approved by the E/CAR/DCA/22 Meeting, Decision 22/6, to accomplish the following main objectives:

- a) analysis and monitoring of the status of the current E/CAR AFS Network;
- b) recommend measures to improve reliability of the E/CAR AFS Network for the
- c) immediate/near term; and
- d) study, analyze and follow-up on the planning, documentation and
- e) implementation of the replacement of the existing E/CAR AFS Network.

2. Terms of Reference

To be updated and presented in the E/CAR/NTG/4-E/CAR/RD/2 Final Report