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

FIFTH EASTERN CARIBBEAN NETWORK TECHNICAL GROUP AND THIRD EASTERN CARIBBEAN RADAR DATA SHARING AD HOC GROUP MEETINGS

E/CAR/NTG/5 & E/CAR/RD/3

FINAL REPORT

GUADELOUPE, FRENCH ANTILLES, 22 TO 24 OCTOBER 2014

Prepared by the Secretariat

October 2014

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HISTORICAL

ii.1 Place and Date of the Meeting

The Fifth Eastern Caribbean Network Technical Group (E/CAR/NTG/5) and Third Eastern Caribbean Radar Data Sharing Ad hoc Group (E/CAR/RD/3) Meetings were held at the Canella Hotel in Guadeloupe, French Antilles, France, from 22 to 24 October 2014.

ii.2 Opening Ceremony

Mr. Julio Siu, Regional Officer, Communications, Navigation and Surveillance of the North American, Central American and Caribbean (NACC) Office of the International Civil Aviation Organization (ICAO) provided opening remarks and thanked the French Air Navigation Services Administration for hosting the meetings. He highlighted the work to be accomplished: the E/CAR Aeronautical Fixed Service (AFS) Network performance review and the progress on the radar data sharing activities, particularly, the Request for Information (RFI) Process for the E/CAR Radar Data Displays. Ms. Veronica Ramdath, E/CAR/NTG Rapporteur, welcomed the participants and emphasized the activities to be discussed on the ECAR AFS Network and the Radar Data Sharing tasks. Finally, Mr. Gilbert Babijon, Head of Guadeloupe Air Traffic Control Center, French Air Navigation services, welcomed the participants, inviting them to also enjoy their stay in Guadeloupe and officially opened both meetings.

ii.3 Officers of the Meeting

The E/CAR/NTG/5 and E/CAR/RD/3 Meetings were chaired as plenary by Ms. Veronica Ramdath as the E/CAR/NTG Rapporteur and Mr. Julio Siu, Regional Officer, Communications, Navigation and Surveillance of the ICAO NACC Regional Office acted as Secretary of the Meetings.

ii.4 Working Languages

The working language of the Meetings was English and working papers, information papers, presentations and report of the meetings were available to participants in said language.

ii.5 Schedule and Working Arrangements

It was agreed that the working hours for the sessions of the meetings would be from 09:00 to 16:00 hours daily with adequate breaks. Ad hoc Groups were created during the Meetings to further work on specific agenda items.

ii.6 Agenda

Agenda Item 1 Review of Valid Conclusions from E/CAR/CATG/01 and ECAR/DCA/25 Meetings Related to the Work of the NTG and RDS

1.1 Follow-up on previous E/CAR/NTG Conclusions and Decisions
1.2 Review of actions concerning the First Eastern Caribbean Civil Aviation Technical Group (E/CAR/CATG/01) Meeting and the Twenty-fifth Meeting of Directors of Civil Aviation of the Eastern Caribbean (E/CAR/DCA/25) related to the E/CAR Aeronautical Fixed Service (AFS) Network
1.3 Air Navigation Implementation Working Group (ANI/WG) and North America, Central American Working Group (NACC/WG) conclusions

Agenda Item 2: E/CAR AFS Network

2.1 Network performance analysis and general aspects
2.2 Implementation of Aeronautical Message Handling System (AMHS) and Aeronautical Information Services System (AISS)/Central Flight Data Processing System (FDPS)
2.3 E/CAR AFS Network Interconnection to the MEVA Network
2.4 E/CAR/NTG future meetings

Agenda Item 3: Overview of Radar Data Sharing Activities

3.1 Follow-up on radar data agreements and teleconferences
3.2 Implementation of radar data sharing tasks

Agenda Item 4: Radar Data Display Request for Information (RFI) Process

4.1 Presentations of RDS proposals

Agenda Item 5: Other Business

ii.7 Attendance

The Meeting was attended by ten States/Territories, one International Organizations, and five industry representatives totalling thirty five (35) delegates as indicated in the list of participants. The E/CAR/AFS Network service provider, Telecommunications Services of Trinidad and Tobago (TSTT) and an industry representative participated via web teleconference.

ii.8 Draft Conclusions and Decisions

The Meeting recorded its activities as Draft Conclusions and Decisions as follows:

DRAFT CONCLUSIONS: Activities requiring endorsement by the by the Directors of Civil Aviation of the Eastern Caribbean (E/CAR/DCA).

DECISIONS: Internal activities of the E/CAR Network Technical Group (E/CAR/NTG)/Radar Data Sharing (RDS) Ad hoc Group.

ii.9 List of Working and Information Papers and Presentations

Refer to the Meeting web page:
http://www.icao.int/NACC/Pages/meetings-2014-ecarntg5.aspx

WORKING PAPERS

Number	Agenda Item	Title	Date	Prepared and Presented by
WP/01	---	Review and Approval of the Draft Agenda and Schedule	26/09/14	E/CAR/NTG Rapporteur

WORKING PAPERS

Number	Agenda Item	Title	Date	Prepared and Presented by
WP/02	1.1	Follow-up on previous E/CAR/NTG Conclusions and Decisions	08/10/14	E/CAR/NTG Rapporteur
WP/03	1.2	Review of actions concerning the First Eastern Caribbean Civil Aviation Technical Group (E/CAR/CATG/01) Meeting and the Twenty-fifth Meeting of Directors of Civil Aviation of the Eastern Caribbean (E/CAR/DCA/25) related to the E/CAR Aeronautical Fixed Service (AFS) Network	11/10/14	Secretariat
WP/04	1.3	Review of actions concerning the Air Navigation Implementation Working Group (ANI/WG), North America, Central American Working Group (NACC/WG) and NACC/DCA/05 Meeting conclusions	11/10/14	Secretariat
WP/05	2.1	MPLS Network Performance	20/10/14	Barbados
WP/06	2.1	E/CAR AFS Network Performance as reported by the OECS States	09/10/14	ECCAA
WP/07	2.1	Network Performance Analysis and general Feedback French West Indies	23/09/14	France
WP/08	2.1	Network Performance Analysis and General Aspects	13/10/14	Trinidad and Tobago
WP/09	2.2	Implementation of Aeronautical Message Handling System (AMHS) and Aeronautical Information Services System (AISS)/Central Flight Data Processing System (FDPS)	13/10/14	Trinidad and Tobago
WP/10	2.3	MEVA II-E/CAR AFS Network Interconnection Activities	25/09/14	MEVA TMG Coordinator
WP/11	2.4	E/CAR/NTG future meetings	09/10/14	E/CAR/NTG Rapporteur
WP/12	3.1	Follow-up on radar data agreements and teleconferences	13/10/14	E/CAR/NTG Rapporteur
WP/13	3.2	Implementation of Radar Data Sharing Activities	11/10/14	Secretariat
WP/14	4	E/CAR Radar Data Display Request for Information (RFI) Process	11/10/14	Secretariat
WP/15	5	The ICAO Position for the International Telecommunication Union (ITU) World Radiocommunication Conference (2015) (WRC-15) and State Support requested	11/10/14	Secretariat
WP/16	5	ADS-B Implementation as new task: Radar Data Sharing Activities	11/10/14	Secretariat
WP/17	5	ASBU considerations for inclusion in E/CAR/NTG and RDS activities	11/10/14	Secretariat
WP/18	---	Cancelled	----	----

WORKING PAPERS

Number	Agenda Item	Title	Date	Prepared and Presented by
WP/19	3.2	Antigua Radar rehabilitation activities	20/11/14	Antigua and Barbuda
WP/20	3.1	Action Plan for FWI to support the Radar Display installation	20/11/14	France

INFORMATION PAPERS

Number	Agenda Item	Title	Date	Prepared and Presented by
IP/01	---	List of Working, Information Papers and Presentations	16/10/14	Secretariat
IP/02	3.2	Information, limitations, procedures, phraseology and AIC-format governing the implementation of Radar-Assisted Situational Awareness (RASA) in the OECS	29/09/14	ECCAA
IP/03	2.2	Implementation of AMHS Circuit PIARCO- ATLANTA	22/09/14	United States
IP/04	4.1	PRISMA – COMSOFT's Modular ATM Solution	03/10/14	COMSOFT
IP/05	5	Multilateration Considerations in E/CAR Region: Hidden Costs & Coverage Limitation Factors.	22/10/14	Barbados

PRESENTATIONS

Number	Agenda Item	Title	Presented by
1	2.1	Fifth Eastern Caribbean Network Technical Group Meeting – E/CAR/NTG5	Trinidad and Tobago
2	4.1	Request for Information for Eastern Caribbean Radar Data Displays	Selex
3	4.1	Request for Information for Eastern Caribbean Radar Data Displays	Adacel
4	4.1	Request for Information for Eastern Caribbean Radar Data Displays	Indra
5	4.1	Request for Information for Eastern Caribbean Radar Data Displays	Comsoft

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Agenda Item 1 Review of Valid Conclusions from E/CAR/CATG/01 and ECAR/DCA/25 Meetings Related to the Work of the NTG and RDS

1.1 Follow-up on Previous E/CAR/NTG Conclusions and Decisions

1.1 Under WP/02, the Meeting reviewed the conclusions and decisions from the previous E/CAR/NTG meetings, concluding that were completed or superseded as detailed in **Appendix A** to the report. The new conclusions/decisions that replaced the ones superseded are included in Agenda Items 2.1, 3.1 and 3.2.

1.2 Review of Actions Concerning the First Eastern Caribbean Civil Aviation Technical Group (E/CAR/CATG/01) Meeting and the Twenty-fifth Meeting of Directors of Civil Aviation of the Eastern Caribbean (E/CAR/DCA/25) Related to the E/CAR Aeronautical Fixed Service (AFS) Network

1.2 Under WP/03 and WP/04, the Meeting reviewed the valid conclusions related to the E/CAR AFS Network formulated by the First Eastern Caribbean Civil Aviation Technical Group Meeting (E/CAR/CATG/1), Twenty-fifth Meeting of Directors of Civil Aviation of the Eastern Caribbean (E/CAR/DCA/25), First NAM/CAR Air Navigation Implementation Working Group Meeting (ANI/WG/1) and North American, Central American and Caribbean Working Group Meeting (NACC/WG) meetings.

1.3 Air Navigation Implementation Working Group (ANI/WG) and North America, Central American Working Group (NACC/WG) conclusions

1.3 The Meeting recognized the technical role of the E/CAR/NTG and the Eastern Caribbean Radar Data Sharing Ad-hoc Group **(**E/CAR/RD) and expected contributions on the aforementioned conclusions, as for example: training needs identification, E/CAR Natural Disaster Emergency Plan telecom needs, monitoring/reporting activities etc., to be reported to the E/CAR/CATG and E/CAR/DCAs. In this regard, an Ad hoc agreed by the meeting group was established to work on the proposed actions for these contributions, which formulated the following decision:

DECISION
E/CAR/NTG/05/01 **EVALUATION OF CONCLUSIONS AND IDENTIFICATION OF CONTRIBUTIONS FOR E/CAR/CATG AND E/CAR/DCA MEETINGS**

That, in order to provide the timely support from the E/CAR/NTG and the E/CAR/RD on the valid conclusions related to the E/CAR AFS Network formulated by the E/CAR/CATG/01, E/CAR/DCA/25, ANI/WG/1 and NACC/WG meetings, France, United States and the E/CAR/NTG Rapporteur evaluate these conclusions and identify the possible contributions from the E/CAR/NTG and the E/CAR/RD to be reported to the 2015 E/CAR/CATG and E/CAR/DCA Meetings.

Agenda Item 2 E/CAR AFS Network

2.1 Network Performance Analysis and General Aspects

2.1.1 Trinidad and Tobago reported that a catastrophic failure in Anguilla occurred on 14 October 2014:

a) total failure of the AFS equipment in Anguilla following a storm passage, considering that one of the Cisco routers for the E/CAR/AFS Network failed in January 2013. The Meeting recalled that the E/CAR AFS Network Service Provider, Telecommunication Services of Trinidad and Tobago (TSTT) visited Anguilla and filed a report stating that the damage to the equipment was as a result of adverse environmental conditions and would not be covered under the maintenance agreement in effect with Cisco for the routers. Anguilla and the Eastern Caribbean Civil Aviation Authority (ECCAA) were notified of TSTT investigation results. A proposal for the replacement of the router was obtained from TSTT and sent to Anguilla; and

b) Trinidad and Tobago informed that, further to a teleconference between TTCAA and ECCAA, and subsequent correspondence on the failure severity and the risk analysis of not having voice communications with corresponding E/CAR States, the following points were noted:

- Aeronautical Message Handling System (AMHS) services in Anguilla are currently provided via the Internet (SPATIA) as the agreed fail safe for the E/CAR/AFS Network
- TSTT/TTCAA to conduct a site visit to determine the damage extent. TSTT would then provide a quotation to restore the E/CAR/AFS in Anguilla. Meanwhile, the previous quotation for one router can be extended and used as an estimate.
- ECCAA to engage the government of Anguilla to have the appropriate equipment rooms environmental conditions improved and to seek funding to replace the damaged equipment

2.1.2 Due to this critical situation, the Meeting formulated the following conclusion:

DRAFT CONCLUSION
E/CAR/NTG/5/2 **IMMEDIATE SOLUTION TO ANGUILLA AFS EQUIPMENT FAILURE**

That, in order to implement the immediate actions to solve the catastrophic failure in Anguilla:

a) ASSI, ECCAA, TTCAA and Anguilla to conduct technical evaluation visits of the Anguilla's facilities housing the E/CAR AFS equipment in order to identify improvements; and

b) Anguilla take the necessary actions to restore the E/CAR AFS equipment functionality by **December 2014**.

2.1.3 The Meeting recalled that one of the routers in Saint Kitts and Nevis had failed, and was also identified by TSTT as a result of environmental damage as stated in Conclusion E/CAR/NTG/4/01 - *Immediate restoration of E/CAR AFS Network node redundancy in Saint: Kitts and Nevis and Anguilla*. The Meeting agreed on the following conclusion:

DRAFT CONCLUSION
E/CAR/NTG/5/3 **IMMEDIATE RESTORATION OF THE E/CAR AFS NETWORK NODE REDUNDANCY IN SAINT KITTS AND NEVIS**

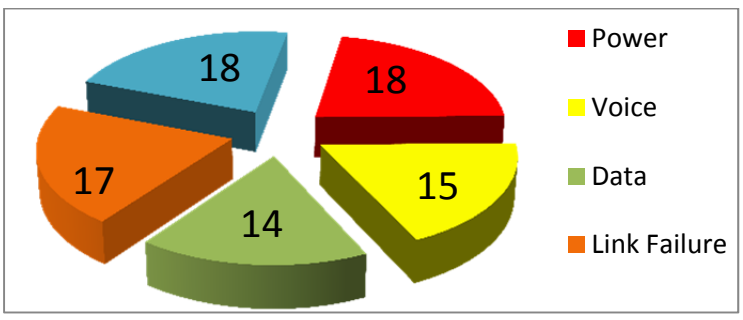
That, in order to restore the node redundancy for the replacement of the failed equipment in Saint Kitts and Nevis:

a) Trinidad and Tobago submit by **30 October 2014** a letter to ECCAA on the risk and critical situation due to the lack of the router replacement;

b) ICAO submit a letter to Saint Kitts and Nevis after TTCAA´s letter; and

c) Saint Kitts and Nevis report by **30 November 2014**, on the actions taken to conduct this replacement.

2.1.4 Under P/01, TSTT provided an overview of the E/CAR Network performance since the last E/CAR/NTG/3 Meeting, (July 2013 to September 2014) showing consistently good performance and availability of the network. The failure reporting tickets registered highlighted that a total of eighty two tickets were reported. As of September 2014, seventy two have been closed. Of the eighty two failures, seventeen were identified as link failures. The breakout of faults is illustrated as follows:



2.1.5 Similarly, TSTT presented the improvement on the availability statistics as shown in the table below:

State	% Availability 2013	% Availability 2014
Anguilla	96.0	98.9
Antigua and Barbuda	93.6	99.9
Barbados	99.4	99.9
Dominica - Canefield	93.4	97.4
Dominica - Melville Hall	99.1	99.6
Grenada	97.9	99.9
Guadeloupe	99.1	99.7
Martinique	99.3	99.5
Montserrat	99.0	99.9
Nevis	98.9	98.4
Saint Kitts and Nevis	91.3	99.3
Saint Lucia -George F Charles	99.1	99.9
Saint Lucia- Hewanorra	97.8	98.7
Saint Vincent and the Grenadines	99.0	98.1
Tobago	99.6	99.7
Trinidad	99.7	99.8
United States (San Juan)	93.2*	99.7

2.1.6 The Meeting reviewed the network maintenance matters with TSTT, commenting on:

- the arrangement being made to move one of the San Juan fractional T1s to a copper solution
- following discussion with Dominica, ECCAA informed that commercial power has improved. No power failures have been experienced for a while. Proof of performance tests are regularly conducted by the airport. The UPS does not accept input from the generator, as a result, SPATIA and CADAS were transferred to a UPS supplied by the airport
- next maintenance visits are scheduled for November-December 2014

2.1.7 Under WP/05, Barbados reported that the voice system remained reliable and provided details of the faults reported and operational errors evident in Barbados since the last E/CAR/NTG meeting in Martinique. There were a total of eleven reported faults, of which were voice-related. These however, only affected one out of the four telephone circuits/numbers in use in Barbados in the first instance, and in the second instance affected connection to only one Territory using the 6400 number assignment. Nine of the eleven faults were related to the data circuits or equipment.

2.1.8 Under WP/06, ECCAA informed the Meeting that there were minimal outages during the review period. Most of the outages that did occur were related to hardware issues at the user end. Feedbacks on fault resolutions were still not posted on TopDesk in a timely manner. In spite of the outages, the Network performance has been reasonably good. The majority of noted failures were attributed to end equipment problems caused by power glitches, environmental issues and located circuit failures within the State. In some instances, problems were solved by resetting the modems. Fault reporting is being done at all sites and documented on TopDesk; however, feedback and the nature of the problems after resolution are not clearly stated.

2.1.9 Under WP/07, France informed the Meeting that the network is fully compliant with operational requirements, but some improvements may be needed, both on technical and procedural aspects. The web portal and the email address are working correctly. Feedback on solutions to faults and determination of its causes should be improved and communicated via the portal. It is noted that communication in reporting has improved. TSTT commented that the Guadeloupe back-up router is to be provided during the maintenance visit, as well as solution for the automatic back-up for Martinique. The Meeting formulated the following decision:

DECISION
E/CAR/NTG/5/4 PENDING MAINTENANCE ACTIONS BY TSTT

That, in order to carry out the pending maintenance actions related with the E/CAR AFS Equipment, TSTT:

a) provide the Guadeloupe and Antigua back-up routers during the maintenance visit scheduled for Nov-Dec 2014; and

b) during the maintenance visit, resolve the back-up routing table to allow automatic backup for Martinique.

2.1.10 Concerning the E/CAR AFS Network Contingency Procedures (Conclusion E/CAR/NTG/4/05 - *E/CAR AFS Network Contingency Procedures)*, France and United States developed network contingency procedures for the E/CAR AFS Network, and the following was proposed as network contingency procedures:

Case of full ECAR/Network failure or case of failure of one State node:

For voice communications, use of:

- Public Switched Telephone Network (PSTN) backup numbers (that are programmed on Voice Communication Switching System (VCSS) and on backup telephones/Radio System for Mobile Communication (GSM)), in accordance with Letters of Agreements

- Direct lines when existing (i.e.: Saint Lucia-Martinique, Trinidad and Tobago-Martinique, Guadeloupe-Martinique, etc.)

For AFTN/AMHS:

- use of SPATIA web
- for those States that use local Flight Data Processing (FDP), manual input from SPATIA web into the local FDP. Several aeronautical messages may not be possible

Case of partial failure of the network (one of the services provided through the network is OFF):

- AMHS OFF: use of SPATIA web
- Voice OFF: use back-up PSTN numbers or direct lines when existing
- AFTN OFF: use of SPATIA/CADAS, local manual input into the States FDP

2.1.11 The Meeting also formulated the following Draft Conclusion:

DRAFT CONCLUSION
E/CAR/NTG/5/5 E/CAR AFS NETWORK CONTINGENCY PROCEDURES

That, in order to make official and homogeneously apply the E/CAR AFS Network contingency procedures, E/CAR AFS Members implement by the E/CAR/DCA/26 Meeting, the network contingency procedures, incorporating them into their operational procedures.

2.1.12 Similarly, France proposed to develop a System Network Management Protocol (SNMP) tool to support local equipment status. The Meeting supported the initiative and agreed on the following decision:

DECISION
E/CAR/NTG/5/6 SIMPLE NETWORK MANAGEMENT PROTOCOL (SNMP) TOOL FOR LOCAL EQUIPMENT SUPERVISION

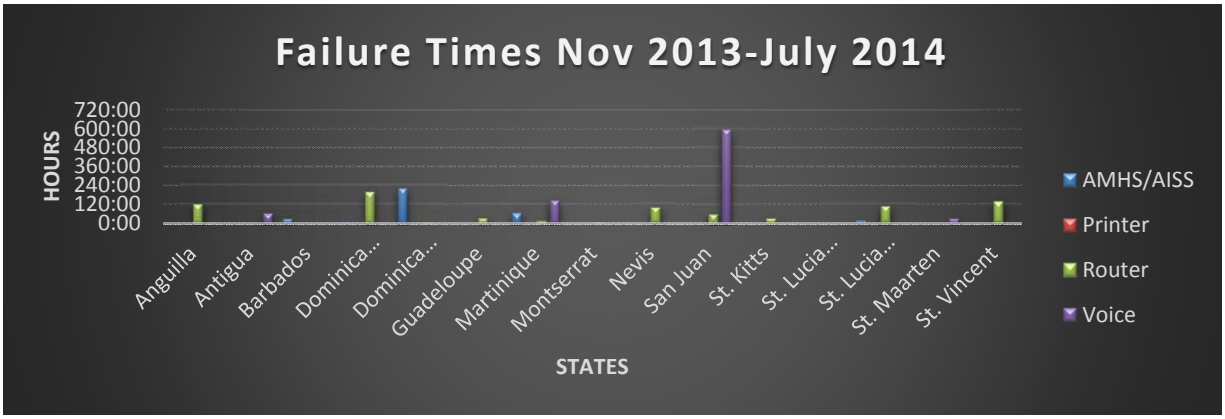
That in order to improve local supervision of the equipment:

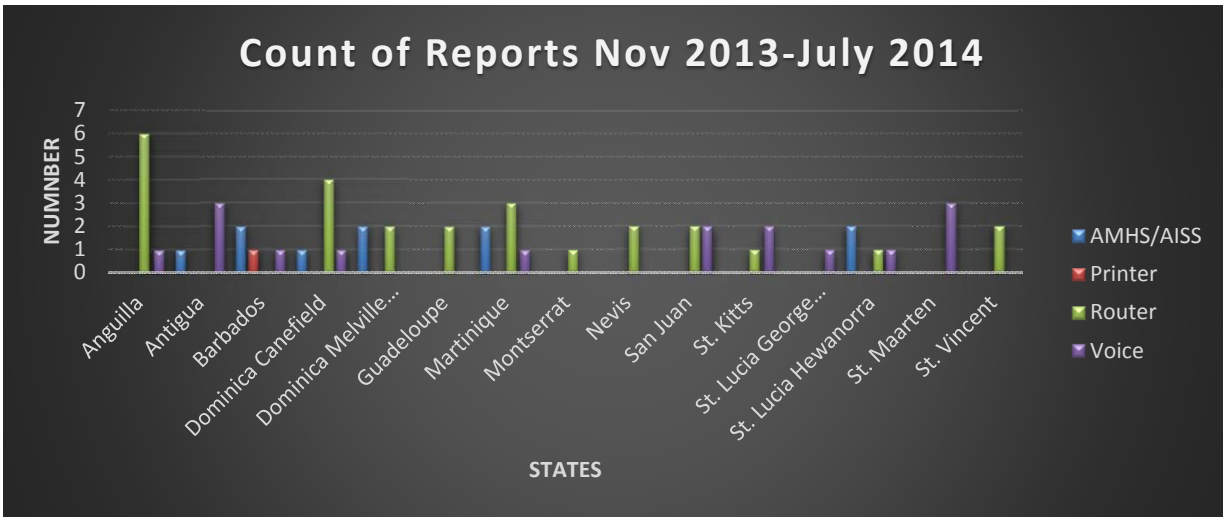
a) France conduct a feasibility study on the development of the supervision tool;

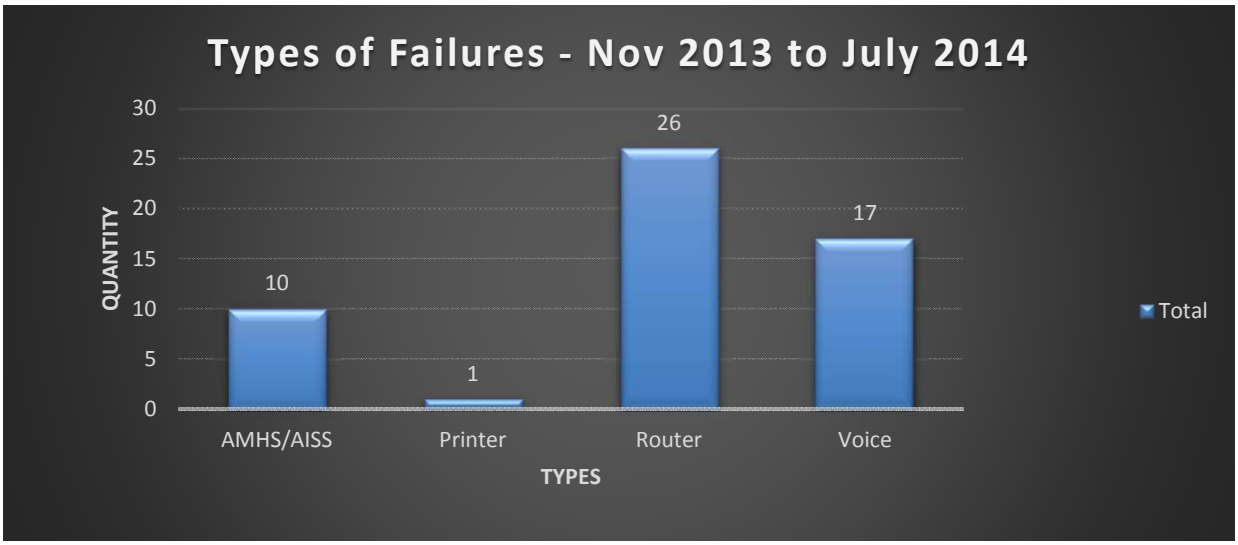
b) Trinidad and Tobago provide the applicable Management Information Bases (MIBs) as required for the tool development; and

c) France report on the progress of the SNMP Tool by the next ECAR/NTG Meeting

2.1.13 Under WP/08, Trinidad and Tobago reported that most of the States have been utilizing the TopDesk reporting tool for documenting faults. In the Organization of Eastern Caribbean States (OECS), Air Traffic Control (ATC)/Aeronautical Information Services (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 TopDesk or reports directly via telephone to AIS/TTCAA. The following breakout of reported faults over a nine month period is illustrated as follows:







2.1.14 Further to the discussion regarding faults and statistics the following decision was formulated:

DECISION
E/CAR/NTG/5/7 ECAR AFS NETWORK MAINTENANCE ACTIONS

That, in order to conduct the appropriate maintenance actions of the E/CAR AFS Network:

a) Trinidad and Tobago (TTCAA):

- inform at least with a two-week in advance notice of the maintenance dates; and
- provide more detailed feedback to all failure reports in the TopDesk application; and

b) TSTT provide:

- breakout of faults regarding power failures;
- availability statistics; and
- a report after the next maintenance visit in November 2014 on the condition of the batteries and UPSs at each site.

2.1.15 The Meeting was reminded of the E/CAR AFS Network Standard Operations Procedures (SOPs) and Maintenance Procedure and Service Level of Agreement (MPLS). The SOP from the FAA was received and reviewed by TSTT and TTCAA. Comments were received from France on SOP. The SOP, including the FAA and E/CAR documents, is still being drafted. In this regard, the following decision was adopted:

DECISION
E/CAR/NTG/5/8 COMPLETION OF E/CAR AFS NETWORK STANDARD OPERATIONS PROCEDURES (SOPS)

That, in order to complete the SOP and start its application, the E/CAR/NTG Rapporteur finalize the compilation of the E/CAR AFS Network Standard Operations Procedures (SOPs): MPLS maintenance procedure and Service Level of Agreement, including the inputs from France, United States, ECCAA and TSTT, and present this final draft document at the follow-up teleconference in February 2015.

2.2 Implementation of Aeronautical Message Handling System (AMHS) and Aeronautical Information Services System (AISS)/Central Flight Data Processing System (FDPS)

2.2.1 Under WP/09, Trinidad and Tobago presented an update of the AMHS implementation and the functionalities of the system as follows:

- AIDA-NG (Aeronautical Integrated Data Exchange Agent – Next Generation)
  - Advanced and fully integrated AFTN/AMHS message switching system product, including a universal gateway for all types of aeronautical messages

- CADAS ATS (COMSOFT Aeronautical Data Access System – Air Traffic Services)
  - Client/Server system, providing full ATS end user services
  - Supports the operation of AFTN client terminals and AMHS User Agent client terminals in parallel, allowing a smooth transition from AFTN to AMHS

- CADIR (COMSOFT Directory)
  - X.500 directory service, which provides access to the AMHS addressing scheme

- CISECA (COMSOFT Internet Security Appliance)
  - Provides reverse proxy functionality for external clients

- EFG (Email/FAX Gateway)
  - In combination with AIDA-NG, allows sending of ATS messages to fax and email recipients

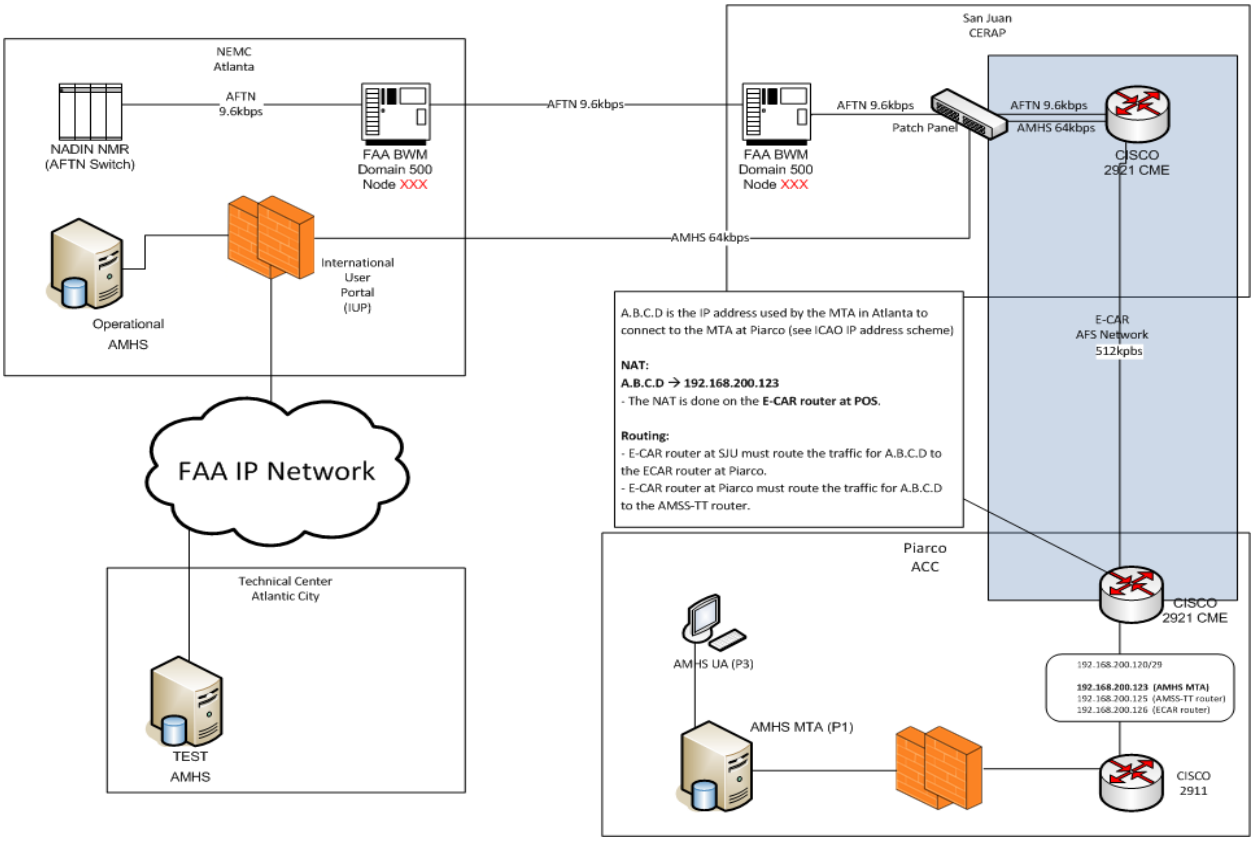
- CCMS (COMSOFT Configuration Management Suite)
  - Provides configuration management features for the different hardware and software components of the AMSS-TT System)

2.2.2 Installation and training of the CADAS-ATS commenced on 4 January 2013, and was completed on 1 March 2013, in the following States:

- Anguilla
- Antigua and Barbuda
- Barbados
- Dominica/Canefield
- Dominica/Melville Hall
- Grenada
- Guadeloupe
- Martinique
- Montserrat
- St. Kitts and Nevis
- Saint Lucia/George F. Charles
- Saint Lucia/ Hewanorra
- Saint Vincent and the Grenadines

2.2.3 The AMSS-TT system is currently functioning in AFTN mode. Cutover of the CADAS-ATS in the Eastern Caribbean States to AMHS is scheduled to begin by the middle of January 2015 and be completed by the end of the 2015 first quarter. TTCAA will continue providing AFTN connectivity with ATS systems in States that are not AMHS ready, for example: Venezuela.

2.2.4 The TTCAA has completed the Technical Letter of Agreement for the Interconnection of AMHS Systems with the FAA. Testing with the FAA began in February 2014 and cutover is expected to be completed by the end of December 2014. The transition to AMHS will be seamless to the network. The work that is required involves only configuration changes to the AMHS equipment.



2.2.5 Under IP/03, United States informed the Meeting that on 18 September 2013, after successfully completing the Interoperability Testing, Dominican Republic AMHS system was cutover. It operated in a dual-feed mode until 18 October 2013 without problem, and on that date, the single feed mode phase was initiated. The AMHS System ran successfully in that mode until the 26 November 2013. On that date, The *Instituto Dominicano de Aviación Civil* (IDAC) and FAA agreed to decommission the AFTN link, and that task was completed in mid-January 2014. Since then, Dominican Republic AMHS system has been performing flawlessly.

2.2.6 Currently, the FAA is working with the CAA's of Canada, Cayman Islands, Cuba, Portugal, Sint Maarten and Trinidad and Tobago, to migrate their AFTN connections to AMHS. The status of the various AMHS Implementation Projects is as follows:

- Canada: Interoperability Testing is on-going over a MPLS circuit between FAA's Technical Center and NavCanada testbed in Toronto
- Cayman Islands: Initial conversations to migrate the existing AFTN System to a new AFTN-AMHS System have been held. The AFTN capabilities of the new system will be tested and cutover first, while in parallel, the longer AMHS implementation process will start in early October 2014
- Cuba: Interoperability Testing is on-going over a MEVA II 64kbps IP circuit. Both AMHS Systems have exchanged messages but configuration issues need to be addressed
- Portugal: The initial phase of the Interoperability Testing will be performed through a VPN over the Internet that has already been set up

- Trinidad and Tobago: A 64kbps IP circuit between the E/CAR AIFSS router in San Juan CERAP and Atlanta NEMC was implemented and tested. Extension of the circuit to the FAA's Technical Center was performed, but testing is pending a configuration change in Piarco

2.2.7 The next ICAO/FAA Workshop on the Follow-up to the Implementation of the ATS Message Handling System (AMHS) in the NAM/CAR Regions (AMHS-IMP) is tentatively scheduled as part of the ATN Application Workshop in October 2015 in Saint Maarten. The Meeting was encouraged to attend, as the lessons learned will be presented in more detail, and an update of the Regional AMHS Regional Plan will be conducted.

2.3 E/CAR AFS Network Interconnection to the MEVA Network

2.3.1 Under WP/10, the MEVA TMG Coordinator recalled the Twenty Second MEVA Technical Management Group (MEVA/TMG/22), and the importance to exchange information for the interoperation of the MEVA II and the E/CAR AFS Network, which resulted in Conclusion TMG/22/09 – *Regional Interconnection/ Integration with the E/CAR Network*. 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 Sint 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 Sint Maarten and San Juan. Conclusion TMG/25/09 - *MEVA II-E/CAR AFS Network Interconnection* was mentioned.

2.3.2 The following table depicts the up-to-date list of telecommunication requirements for the MEVA II – E/CAR Network interconnection agreed from previous teleconferences:

	ATS Units	**MEVA II- E/CAR AFS Network (San Juan) Interconnection**		**Technical details**
SINT MAARTEN/ JULIANA APP	Anguilla (Clayton J. Lloyd International)	√		2 PBX service from E/CAR-analog voice line
	Antigua (V. C. Bird APP)	√	√	Serial line RS232-V.35
	Saint Kitts (Robert L. Bradshaw TWR)	√		
	PIARCO ACC		√	3 available serial lines RS232-V.35

2.3.3 An update was provided on the new dedicated data serial circuit required for the radar exchange between San Juan and Sint Maarten:

- The MEVA II equipment for the circuit was installed in Sint Maarten
- The FAA did not order the MEVA II equipment because the Radar Sharing Memorandum of Agreement (MoA) between the FAA and Sint Maarten is not yet signed

- It was agreed that the FAA will send the radar data from San Juan in the Common Digitizer-2 (CD2) format and Sint Maarten will provide its radar feed in ASTERIX format
- Sint Maarten ordered the equipment to support 4 voices lines and the MEVA II Service Provider installed the needed equipment
- The purchase order for the San Juan equipment and services was not issued because financial responsibility was not determined before the 7th teleconference. It was agreed that Sint Maartin will be financially responsible for the NRC and MRC for the 4 voice lines
- Trinidad and Tobago indicated the need for an additional card in the E/CAR AFS router in San Juan. In this regard, Trinidad and Tobago implemented the necessary equipment in the San Juan E/CAR AFS node (equipment and site visit) to support the 4 voice lines on the E/CAR router in San Juan
- The ANS and Radar Data Sharing Agreement have been prepared. However, the FAA has been unable to sign it without funding for implementation. No other arrangements have been made in the meantime as the radar circuit is not yet in place

2.3.4 Sint Maarten, Trinidad and Tobago, United States, and ICAO joined to discuss these matters (DP/02) and a minute of this discussion was made (8th MEVA-E/CAR AFS Network interconnection meeting) as shown on **Appendix B.** The relevant agreements are:

- 4 Voice circuit implementation planned for MEVA III Network operation
- Sint Maarten has agreed to cover the full cost of the MEVA voice circuits and the data circuit for radar data from San Juan to Sint Maarten and the radar data from Sint Maarten to San Juan through the MEVA node in San Juan
- United States agreed to absorb the cost for the necessary electronic card in the San Juan MEVA III node for the radar data sharing between Sint Maarten radar to Trinidad and Tobago
- Exchange of a letter on radar data provision to the E/CAR area.

2.4 E/CAR/NTG Future Meetings

2.4.1 In accordance with the E/CAR/CATG rotation of meetings scheme, the next E/CAR/CATG/2 meeting is to be hosted by the United States in 2015. As agreed in the meeting mechanism of the E/CAR/NTG and the E/CAR/CATG, for 2015 both the E/CAR/CATG and E/CAR/NTG meetings will be held consecutively, holding the next meeting of the E/CAR/NTG prior to the E/CAR/CATG/2 meeting.

2.4.2 ICAO has coordinated with United States, and has received the affirmative response for hosting these events (E/CAR/CATG/2, E/CAR/NTG/6 and E/CAR/RDS/4 meetings) June-July 2015. In this regard, the corresponding joint coordination of all these meetings shall be included in the work of each group.

Agenda Item 3 Overview of Radar Data Sharing Activities

3.1 Follow-up on Radar Data Agreements and Teleconferences

3.1.1 Under WP/12, the E/CAR/NTG Rapporteur informed that the E/CAR/DCA/25 Meeting was briefed on the Radar Data sharing project, the infrastructure needed for radar data exchange and the offer made by France for their monoradar data (Dakota radar data) to E/CAR States/Territories. Further to the review of the operational requirements by the ECCAA for providing situational awareness and the information exchange on operational experiences on situational awareness conducted between France, Saint Lucia and ECCAA, several members of the Radar Data Sharing Ad hoc 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 the Dakota radar data. These members committed to the acquisition of the necessary monitor for the CPU, local environmental conditions and wiring infrastructure for interconnectivity with the E/CAR AFS equipment.

3.1.2 It was also informed that, in order to follow-up the E/CAR/DCA Radar Data Sharing conclusions and mandate, eight teleconferences were conducted with ICAO assistance. It was commented that France, with ICAO support, submitted the Procedure for Donation of CPUs for Radar Display (Ref. State letter EMX0827), particularly addressed to those E/CAR States that committed to implement the CPUs donated by France. A following update of these requests was made during the meeting:

State/Territory	Responded to Donation State Letter	Comments
Dominica	1 unit Melville Hall	2014-03-05 Letter from Dominica
Montserrat	1 unit, information provided	2014-04-22 Letter Monserrat
Antigua and Barbuda	2 units required	2014-05-22 Letter 7/298 II from Antigua
Barbados	1 unit	2014-05-27 Letter 2105/3/1 from Barbados
Grenada	1 unit	2014-06-23 Letter from Grenada
Saint Vincent and the Grenadines	1 unit	2014-09-26 Letter AD/AB 37 from Saint Vincent and the Grenadines
Trinidad and Tobago	For interoperability trials only	
Anguilla	No information	
Saint Kitts and Nevis	No information	

3.1.3 Following-up to the previous teleconference valid action items (ACT 03/02, ACT 06/01, ACT 06/02, ACT 07/02 and ACT 07/03), it was concluded that these action items were completed.

3.1.4 To continue the installation of IRMA2000 radar displays in States that made official requests, France presented a tentative action plan under WP/20. France strongly recommends limiting the use of this system to non-operational experimentation, as there is no operational support, no warranties on availability nor other performances, no operational training for Air Traffic Controllers (ATCOs) and no letter of agreement for the radar data delivery. The delivered systems are supposed to be used only for familiarization and to start defining local procedures and safety cases.

3.1.5 France commented that the IRMA2000 radar displays will be delivered for eighteen (18) months with minimum support. After that period, France/*Service de la Navigation Aérienne Antilles Guyane* (SNA/AG) will transfer the IRMA2000 CPU property to the State and the SNA/AG support will end. The system does not have any cost for the State, excepting identified prerequisites (screen, power…).

3.1.6 The following table shows the tentative implementation schedule:

Order	State/Territory	Date
1	Dominica	T1 + 1 month
2	Montserrat	T1 + 2 months
3	Saint Vincent and the Grenadines	T1 + 2 months
4	Grenada	T1 + 3 months
5	Antigua and Barbuda	T1 + 3 months
6	Barbados	T1 + 4 months
7	Trinidad and Tobago	T1 + 4 months
	Anguilla	T1 + 1 month
	Saint Kitts and Nevis	T1 + 1 month

NOTES:
T0: starting time - Dakota radar data (Asterix cat 30 MacLLC) available on E/CAR network, in Guadeloupe or in Martinique.
T1: T0+2 weeks - time to configure the router and test the radar data sent via E/CAR on IRMA2000 Radar display.

3.1.7 For this installation, France/SNA/AG informed on the consideration to be followed by the State/Territory as presented in **Appendix C** to the report. It was also informed that the Dakota radar data was available in the E/CAR AFS Network. France recommended that displays be used by the State Air Navigation Services Provider (ANSP) for situational awareness familiarization. In this regard the following decision was adopted:

DECISION
E/CAR/NTG/5/9 IMPLEMENTATION CONSIDERATIONS FOR RADAR DATA DISPLAYS WITH CPUS PROVIDED BY FRANCE

That, to facilitate the implementation of the Radar Data Displays based on the France provided CPUs, Antigua and Barbuda, Dominica, Barbados, Montserrat and Saint Kitts and Nevis ensure the timely availability of the monitor and comply with the installation considerations proposed by France.

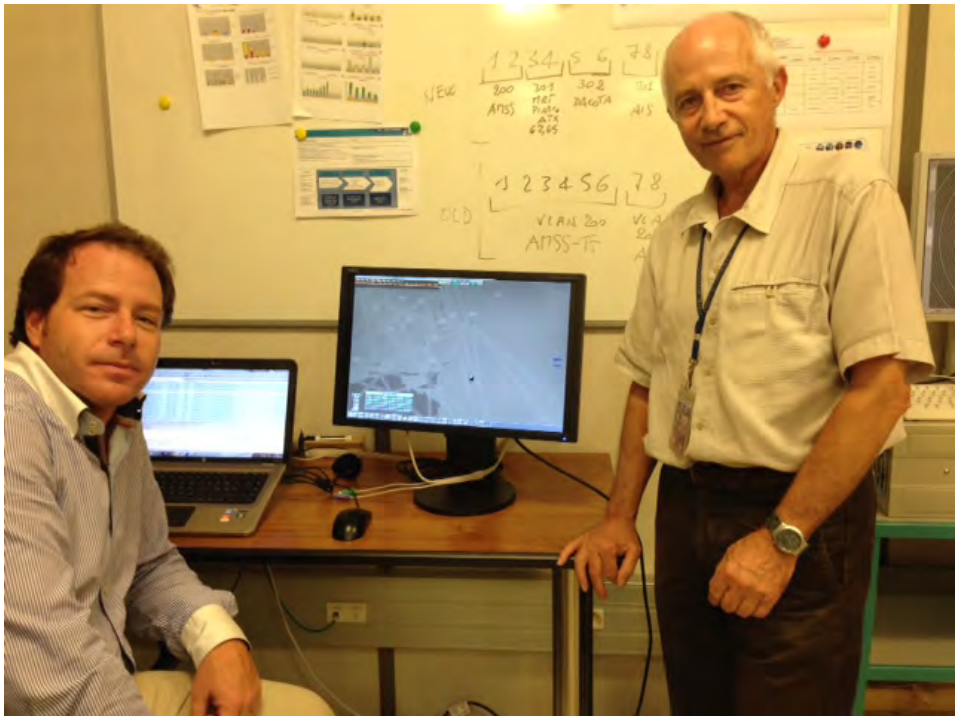
3.1.8 The Meeting emphasized that the final place of installation of the display is a local decision by State/Territory.

3.1.9 Trinidad and Tobago commented that the existing Letter of Agreement between Trinidad and Tobago and France on the availability of the French radar data in which data is limited only to the use by Trinidad and Tobago. In this regard, France indicated that a formal letter will be submitted to Trinidad and Tobago allowing the French radar data to be used by any E/CAR State/Territory as being broadcast in the E/CAR AFS Network for use of the donated CPUs. The following conclusion was formulated:

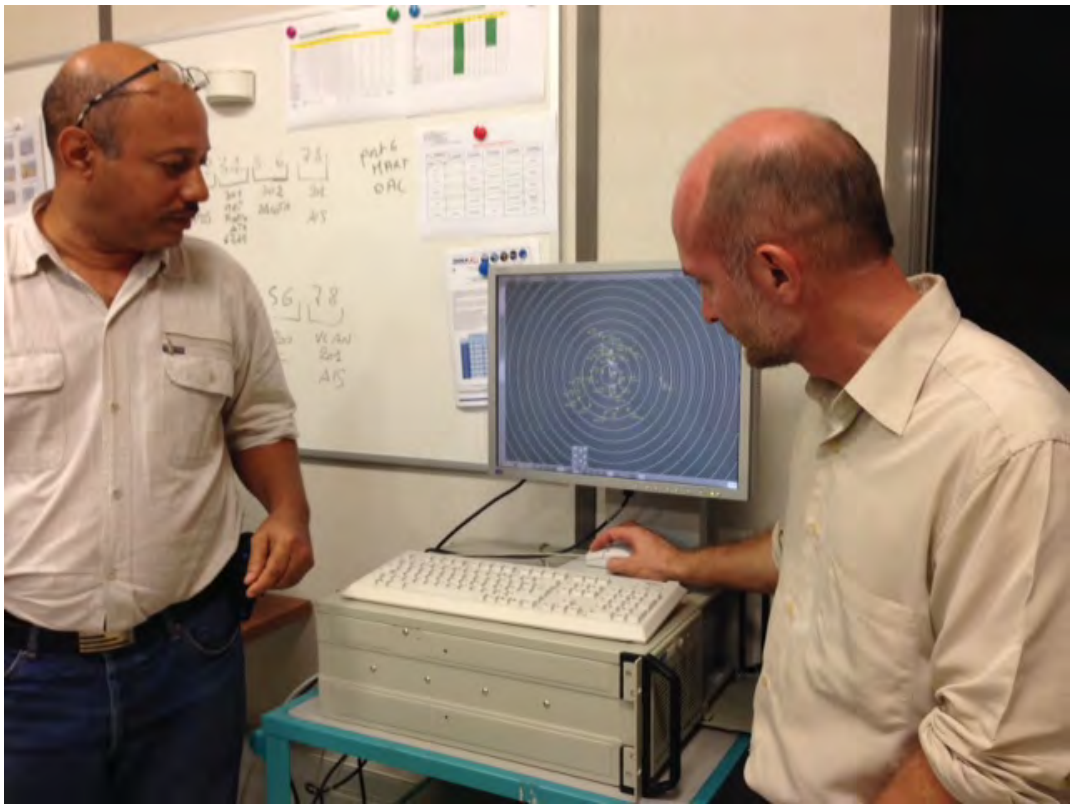
DRAFT CONCLUSION
E/CAR/NTG/5/10 AVAILABILITY OF FRENCH RADAR DATA BY E/CAR STATES/ TERRITORIES

That, to make the French radar data available to any E/CAR State/Territories through the E/CAR AFS Network, France submit a letter with this allowance to Trinidad and Tobago by 30 October 2014

3.1.10 A demonstration of the Multi Radar Tracking (MRT) data (Piarco, Guadeloupe and Martinique) and the French radars (on a similar computer to those to be donated to States by France) was made during the tour of the new Control Tower in Guadeloupe.



Piarco MRT being shown by the Piarco ATM provider, Selex, Mr. Andrea Grimaldi to Mr. Gilbert Babijon, Head of Guadeloupe ATC Centre



Dakota radar exported from Trinidad over the E/CAR/AFS Network and displayed at Guadeloupe for demonstration

3.2 Implementation of Radar Data Sharing Tasks

3.2.1 Under IP/02, ECCAA presented the full text of the information, limitations, procedures, phraseology and Aeronautical Information Circular (AIC)-format governing the implementation of Radar-Assisted Situational Awareness (RASA) in the OECS, as approved by the Director General of the ECCAA on 26 August 2014, which was promulgated to the OECS States on 27 August 2014, and notified to the ICAO NACC Regional Office on 29 August 2014.

3.2.2 Antigua and Barbuda under WP/19, and following E/CAR/NTG Conclusion 4/7 - *Antigua and Barbuda Radar Restoration*, informed on the ongoing activities by Antigua and Barbuda to restore/rehabilitate the Antigua Radar System:

- The radar data sharing with Sint Maarten is planned to be included in the E/CAR AFS-MEVA Interconnection as a future activity when the radar of Antigua becomes available
- An Aeronautical Passenger Communication (APC) Smart-UPS was installed at the Radar site in February 2014. The UPS was checked and turned on
- The Radar system needs to be commissioned and a number of modules still need to be repaired or replaced to fulfil accuracy and redundancy requirements
- V.C. Bird ATS management and staff have completed initial radar training, which will allow them to be more proficient when the situational awareness implementation takes place, while Antigua and Barbuda works towards certification and full implementation of radar control

3.2.3 In this regard Antigua and Barbuda indicated that the restoration action and planning will be available by the end of November 2014. In this regard the following decision was formulated:

DECISION
E/CAR/NTG/5/11 ANTIGUA AND BARBUDA RADAR RESTORATION ACTIVITIES

That Antigua and Barbuda report the E/CAR Radar Data Sharing (RDS) the activities and planning for the restoration of its radar system by **30 November 2014**.

3.2.4 The Meeting was informed that United States submitted to the RDS Ad hoc Group their radar data coverage information of the radars in San Juan, Pico del Este and Saint Thomas on 10 October 2014 (as shown in **Appendix D** to this report). United States indicated that the radar data feeds are available for sharing with the E/CAR States/Territories and Sint Maarten and noted that internal coordination within the FAA will be required prior to final implementation. The Meeting thanked United States for this availability and agreed to include the activities for analysing the actions and agreements necessary to achieve such data sharing in the Radar Action Plan.

3.2.5 Under WP/13, ICAO presented an overview of the radar data sharing activities achieved and the need for the update of the implementation plan on these matters to encompass all the radar data related actions to inform the E/CAR Directors as mandated. The Implementation Plan shall be updated based on the recent events in radar data sharing matters, such as:

- The Request for Information (RFI) Process for collecting data shall provide more ideas for planning and guiding the region´s works toward achieving improvements in the situational awareness benefits
- The French donated CPUs should provide a hands-on experience and practical view for using radar data displays
- Availability of the radar data within the E/CAR AFS Network
- Availability of the MRT data in each user site, including local availability
- Availability of RASA guidance on OECS States
- Review of radar data coverage in the area (Antigua, Barbados, Guadeloupe, Martinique, Sint Maarten and Trinidad and Tobago)
- Radar Data from United States sites
- Analysis of real radar coverage in States as done for Grenada and Saint Vincent and the Grenadines

3.2.6 With DP/01, the Meeting agreed that the following milestones would be included in the update to the Radar Data implementation Plan:

- RFI E/CAR Radar Display process completion: 24 October
- Radar Data sharing- Data integration
    - Integration of Barbados Radar: Jan.-March 2015
    - Integration of Antigua Radar: June-Dec. 2015
    - Integration of Sint Maarten Radar: Apr.- Oct. 2015
    - Evaluation of integrating United States radars: Jan.-Aug. 2015
    - Other radar integration (Venezuela): March 2015-Dec. 2015
- Installation of French donated CPUs: Dec.-April 2015

- Configuration of switches for donated CPU installation: Nov.- Dec. 2014 (Maintenance visits)
- E/CAR radar display acquisition
    - ECAR Radar Display Tender- preparation of RFP: June-Oct. 2015
    - ECAR RD Tender- process: Jan.-March 2016
    - ECAR RD Selection: April 2016
    - ECAR RD Implementation: July-Dec. 2016
- Preparation for ADS-B trials: Oct. 2015-Nov. 2016

3.2.7 The Meeting noted that the RDS Task Force shall conduct the recollection of the users requirements and the development of the RFP document. Barbados and United States joined the RDS TF. Finally the Meeting also agreed that the "Radar Data Sharing Action Plan", should be renamed "Surveillance Data Sharing Action Plan" to expand the scope of this plan to other surveillance techniques. In this regard the following decision was formulated:

DECISION
E/CAR/NTG/5/12 SURVEILLANCE DATA SHARING IMPLEMENTATION ACTION PLAN

That, to show the latest progress and future action on surveillance matters, France, Trinidad and Tobago, United States, and ECCAA develop an update for the Surveillance Data Sharing Action Plan including the agreed milestones by:

a) drafting this update for the next Radar Data Sharing teleconference of January 2015; and

b) complete this update for its presentation to the E/CAR/DCA/26 Meeting.

Agenda Item 4 Radar Data Display Request for Information (RFI) Process

4.1 Under WP/14, the Meeting was recalled on the E/CAR Radar Data Display Request for Information (RFI) Process preparation and execution as planned by the E/CAR States and Territories under the Surveillance Radar Data Implementation Plan:

a) the Radar Data Sharing Implementation Plan involves two phases:

- **Phase 1** - donation of surplus used computer CPUs by France that are already programmed to receive the data per the systems installed in Saint Lucia, which are intended to test the system on a relatively short-term basis
- **Phase 2** - State acquisition of permanent display systems for either medium-term continuation of situational awareness (as decided by the States), or in the case of Antigua and Barbuda, in conjunction with the intended implementation of its own radar control service;

b) for Phase 2, a RFI Process was agreed in order to search market potential radar data display for a medium-long term solution;

c) ICAO, in coordination with the Eastern Caribbean Radar Data Sharing Group (E/CAR RDS), prepared the E/CAR Radar data Display RFI Process, including:

i. Completion of technical specifications
ii. Development of instructions for RFI Process
iii. Creation of RFI Process website under the ICAO NACC website: http://www.icao.int/NACC/Pages/nacc-regionalgroups-ecarcatg.aspx

d) the E/CAR Radar Data Display RFI Process was addressed to equipment providers. Companies interested in responding to this RFI were to inform ICAO by issuing a formal letter of acceptance by 18 July 2014 on such intent to be considered. For those vendors expressing such interest, the E/CAR RDS provided answers to questions submitted by e-mail or any other communication mean during the allowed time frame;

e) a hard copy response with its corresponding electronic version was requested;

f) the question/answer period regarding the RDS RFI was conducted with three sets of questions/answers. All questions were to be addressed to the following email: rds@icao.int;

g) the interested providers were requested to provide a presentation of their proposal to the E/CAR Radar data Sharing Meeting in Guadeloupe, French Antilles in October, 2014 prior notification to ICAO and the Eastern Caribbean Radar Data Sharing Group (E/CAR RDS); and

h) the details on the RFI process requirements and instructions were available at the RFI website as follows:

E/CAR Rardar Data Displays Request for Information (RFI)

Extension of RDS RFI Process	en
Invitation to Request for Information (RFI) for the E/CAR Radar Data Displays	en
Instructions to Prospective Providers For Response to Request for Information (RFI)	en
Statement of Work for the Provision of Radar Data Displays for the Eastern Caribbean States/Territories E/CAR Radar Data Displays-RDS	en
E/CAR Radar Data Sharing RFI – Questions and Answers Set 01	en
E/CAR Radar Data Sharing RFI – Questions and Answers Set 02	en
E/CAR Radar Data Sharing RFI – Questions and Answers Set 03	en

4.2 For the E/CAR Radar Data Display RFI Process, 4 vendors responded providing a hard copy and soft copies of their proposal:

- ADACEL
- COMSOFT
- INDRA
- SELEX

4.3 Each vendor provided a presentation to the Meeting and answered questions from the participants as follows:

4.3.1. SELEX

- The "E/CAR Radar Data Display Project" proposed solution is for the design, provision, installation and successful operation of radar data displays to support ATC controllers to acquire and maintain traffic situation information. The proposed Standard Air Traffic Control Automatic System (SATCAS) is based on the modular ATC system philosophy. The modularity is mandatory to support any capability to be expanded in the future in order to migrate to full radar control through the integration of flight data processing functionality and advanced ATC Tools into the system.

- SATCAS is able to manage different surveillance data sources, with different data update rates, such as conventional primary and secondary surveillance radars, surface movement radars, and Automatic Dependent Surveillance – Broadcast (ADS-B)/ Automatic Dependent Surveillance - Contract (ADS-C) reports, in order to create a complete, consistent and seamless traffic scenario covering from the airport gates to the en-route pathways and vice versa. Even if the proposed system integrates Mode S Secondary Surveillance Radar (SSR) only, it can be easily upgraded in the future in order to process additional surveillance sources (such as ADS-B, multilateration, and Surface Movement Radar (SMR) data). Furthermore, the surveillance data processing can also include (if requested) the Flight Plan Track (FPT) function, that provides FPTs in areas outside the radar coverage, emulating a radar source with its own updating rate.

- The FPTs contains the estimated aircrafts position based on planning performed by FDP system

- The system is ready to integrate:

  a) Airport and Wide-Area Multilateration
  b) ADS-B
  c) Enhanced and Elementary Mode-S Radars.

- The system, with the proposed Software baseline, is ready to be expanded with the main following functionalities:

  a) FDP subsystem
  b) RPB subsystem
  c) Simulator subsystem
  d) Electronic and/or paper strip
  e) AIDC functionalities
  f) Additional suites and/or additional sectors

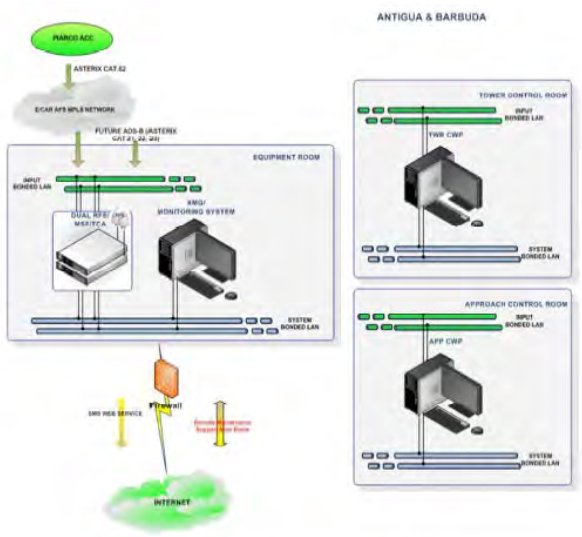


Figure 1. – ANTIGUA & BARBUDA BLOCK DIAGRAM

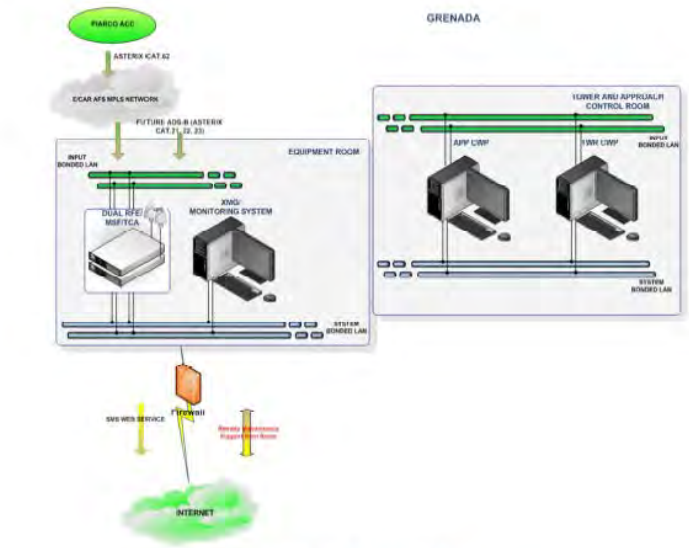
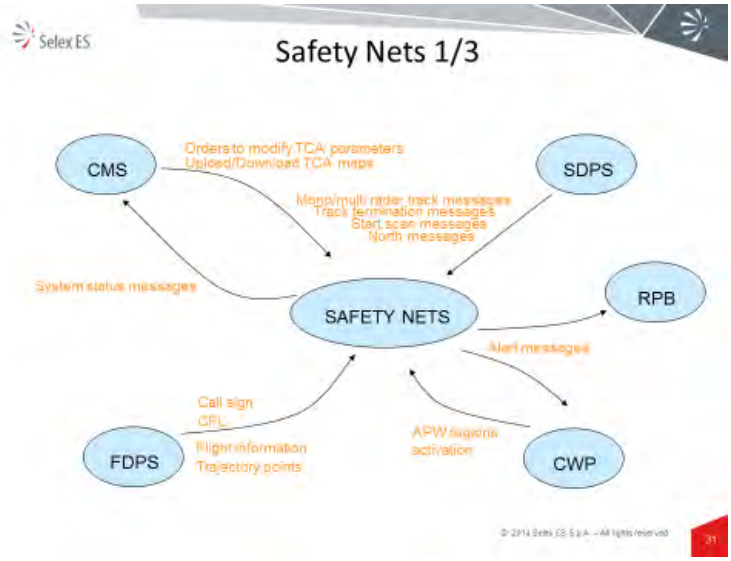


Figure 2. – GRENADA BLOCK DIAGRAM

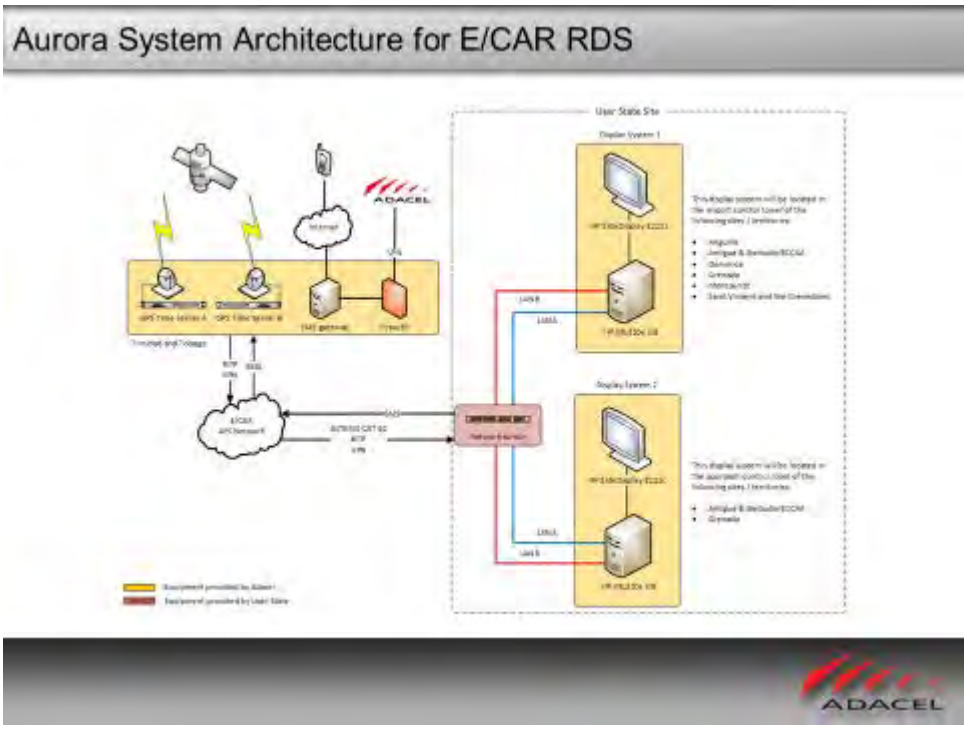


- The total price for SELEX proposal was 1,350,000 EUROs (one million three hundred and fifty thousand Euros)

4.3.2 **ADACEL**

- The Aurora Air Situation Display proposed as the radar data display for the E/CAR radar data sharing project is a fully developed and proven operational system. It is a modular, open architecture system that can be scaled and adapted to meet E/CAR ANSP future requirements. Aurora is fully compliant with E/CAR RDS initial requirements for radar monitoring/situational awareness and for potential future upgrade requirements of E/CAR States and Territories

- Additional capabilities available regarding surveillance and flight data processing, clearance processing, conflict detection, electronic flight strips etc. ADACEL proposal can be expandable to other automated applications



- The following price breakdown in Canadian dollars was provided:

Pricing Breakdown

The following tables breaks down Adacel's budgetary offering:

Item No	Budgetary Item Description	Price (CAD)
1	Main System: Includes any necessary development for the RDS, as well as, FAT, SAT, all Travel & Labour, Installation, Training, Program Management, Documentation, Hardware, Freight, Site Surveys, and one (1) year Warranty.	$ 435, 126
2	Two (2) Year Maintenance: The cost of supporting a two (2) year maintenance program.	$ 82, 783
3	Spares: The cost of the recommended spares (detailed in the Technical Section).	$ 67, 018
	TOTAL	**$ 584, 927**

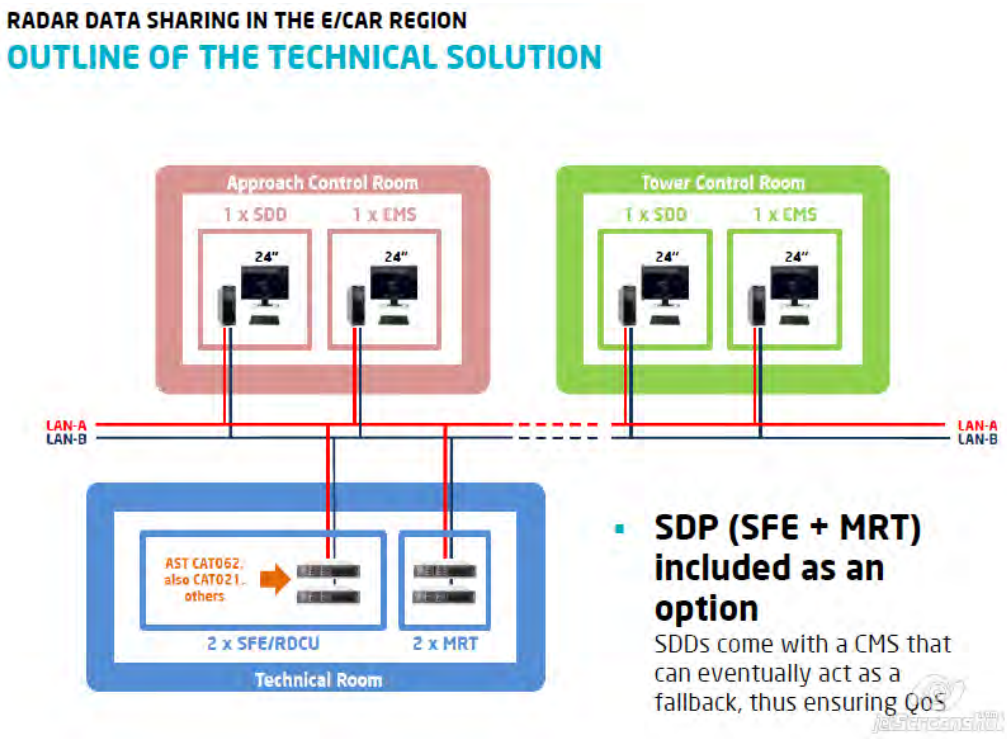
4.3.3. **INDRA**

- Indra's proposal includes their AIRCON product. Indra’s (SDD) and Surveillance Data Display (SDP) can serve as a first step towards E/CAR States to deploy a full-blown Air Traffic Management (ATM) automation system

- Flight Data Processing (FDP) systems can be immediately installed in any of the E/CAR States that requests so. This brings with it a number of functional features – 4D trajectory profiles, ATC Tools (MTCD and others), AMAN, etc.

- The supplied system is not only CAT062-capable, Indra’s licence also includes the capability of the SDD to display surveillance information in their native formats (CAT001/002/034/048 for Primary Surveillance Radar (PSR)/ Monopulse Secondary Surveillance Radar (MSSR), CAT010/020 for surface surveillance info, CAT021 for ADS-B)

- Cost-effectiveness: Scalability is guaranteed in SDDs, functions and the surveillance front-end.



- The proposed supply is as follows:

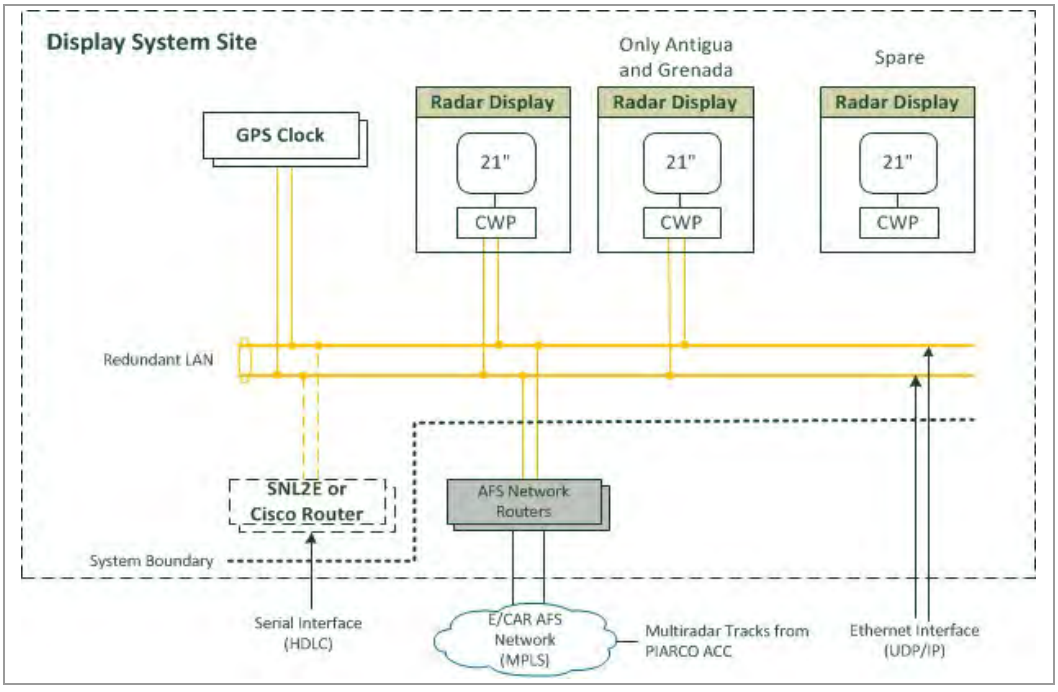
#	Description	Quantity	Manufacturer	Model
Radar Data Displays				
1	Anguilla airport TWR, Antigua airport TWR and APP room (Antigua and Barbuda), Melville Hall airport TWR (Dominica), Maurice Bishop airport TWR and APP room (Grenada), Montserrat airport TWR and Saint Vincent and the Grenadines airport TWR	8		
1.1	**Surveillance Data Display (SDD)**	1		
1.1.1	Workstation with 1x Quad-Core Intel Xeon E5-1620 v2 (3.70GHz, 10MB Cache, 1866MHz) Processor, 8GB (2x4GB, DDR3-1866 ECC) Memory, 2 x 500GB SATA 7200	1	HP	Z420 E5-1620v2-8GB-QK600
	Hard Disk (RAID 1), NVIDIA Quadro K600 1GB PCIe Graphics Card, 1 x Integrated Gigabit Port, 2 x PCIe Quad Port Gigabit LAN Server Adapter, 16X DVD+/-RW Supermulti SATA, USB Standard Keyboard, USB Optical 3 Button Mouse, Red Hat Linux 6 64-bit OS.			
1.1.2	HP Z24i 24-inch IPS Display	1	HP	Z24i
1.1.3	NC375T PCIe 4Pt Gigabit Server Adapter	1	HP	NC375T
1.1.4	Situation Data Display (SDD) Application Software	1	Indra	SDD-SW
1.2	**Control and Monitoring System (CMS)**	1		
1.2.1	Workstation with 1x Quad-Core Intel Xeon E5-1620 v2 (3.70GHz, 10MB Cache, 1866MHz) Processor, 8GB (2x4GB, DDR3-1866 ECC) Memory, 2 x 500GB SATA 7200 Hard Disk (RAID 1), NVIDIA Quadro K600 1GB PCIe Graphics Card, 1 x Integrated Gigabit Port, 2 x PCIe Quad Port Gigabit LAN Server Adapter, 16X DVD+/-RW Supermulti SATA, USB Standard Keyboard, USB Optical 3 Button Mouse, Red Hat Linux 6 64-bit OS.	1	HP	Z420 E5-1620v2-8GB-QK600
1.2.2	HP Z24i 24-inch IPS Display	1	HP	Z24i
1.2.3	NC375T PCIe 4Pt Gigabit Server Adapter	1	HP	NC375T
1.2.4	Control and Monitoring System (CMS) Application Software	1	Indra	CMS-SW

- The prices of INDRA´s proposal are in EUROs as follows:

OPTIONS	DESCRIPTION	QTY	PRICE
1	**Redundant Time Server for each one site (2 x 1 site)**	2	**11.428,00 €**
2	**Additional Redundant Surveillance Data Processing (to support AST CAT021 and others, and to handle serial interfaces) for each one site (2 x 1 site)**	2	**39.261,00 €**
2	**Spares for Additional Surveillance Data Processing (for 6 sites)**	1 lot	**6.585,00 €**

4.3.4 COMSOFT

- PRISMA is a compact solution that allows customers to use a combination of different modules to meet the operational needs. The proposed radar display system uses the PRISMA SDD application as radar data display to provide situational awareness. The PRISMA SDD is part of COMSOFT's ATM automation product line *PRISMA*. The PRISMA SDD is the most visible element of the PRISMA family. As the Air Traffic Controller's user interface, the PRISMA SDD is the main interface of the executive operation of air traffic control. The Figure below shows the building blocks of the basic system configuration for the display system at one site. The system components are interconnected using a redundant LAN. The Data Display consists of a workstation computer and a 21 inch LCD monitor and runs the PRISMA SDD application as radar display. In order to allow a cost effective solution the basic system configuration does not include a serial interface for serial data input
- The proposed system is able to receive and display data from different type of surveillance sources (CAT001/002, CAT020, CAT021, CAT034/048 and CAT062/063/065)
- The surveillance data could be received from the E/CAR AFS Network via the AFS routers. If a local surveillance sensor, like an ADS-B sensor is available and it provides an Ethernet (UDP/IP) interface, it could be integrated directly into the display system. If a surveillance source that only provides a serial HDLC interface has to be integrated, a SNL2E or respective Cisco Router could be added.
- Its modular design allows PRISMA to incorporate the PRISMA Flight Data Processing System (FDPS) into the system at a later stage (requires additional hardware and licenses) without the need for major software changes of the data display application. This allows the migration of the display system from a situational awareness display to full radar control.



- The prices for COMSOFT´s proposal are in EUROs as follows:

Item	Description	Unit Price (EUR)
System (basic)		
1	Basic PRISMA system including 2 controller positions, NTP clocks, network equipment and spares e.g. for Antigua & Barbuda or Grenada	82.000,00
2	Basic PRISMA system including 1 controller position, NTP clocks, network equipment and spares e.g. for Anquilla, Dominica, Montserrat or Saint Vincent and the Grenadines	54.000,00
System (options for each site)		
3	Surveillance Data Processing System	120.000,00
4	Flight Data Processing	125.000,00
5	Safety Net Functions	115.000,00
6	Billing System	175.000,00
7	Recording & Replay	55.000,00
8	Control & Monitoring	45.000,00
Services		
9	Common System Engineering for all systems (Design, Production, Configuration, Tuning)	69.000,00
10	FAT for all systems	26.000,00
11	Delivery to all 6 sites	40.000,00
12	On-site Integration & SAT for each site	26.000,00
13	One set of Factory Training	11.000,00
14	One set of On-site Training	21.000,00
15	Management of the common project	81.000,00

4.4 Having seen the presentations and the questions and answers made with the RFI presentations, the following conclusions were agreed by the Group:

a) maintain a scalable solution from single display to more automated functions (tracker, FDP, etc);

b) data Quality of Service (QoS) or Questions and Answers (QA) to be incorporated; and

c) each State/Territory needs to clearly define the way forward regarding automation.

Agenda Item 5 Other Business

The ICAO Position for the International Telecommunication Union (ITU) World Radiocommunication Conference (2015) (WRC-15) and State Support Requested

5.1 ICAO presented WP/15 on the ICAO position for WRC-2015, including the support for the C-band aeronautical telecommunications, recalling the ICAO Twelfth Air Navigation Conference Recommendation 1/12 – *Development of the aeronautical frequency spectrum resource* and the Assembly Resolution A38-6 – *Support of the ICAO policy on radio frequency spectrum matters*, urging Member States, International Organizations and other civil aviation stakeholders to firmly support the ICAO frequency spectrum strategy and the ICAO position at WRCs and in regional and other international activities conducted in preparation for WRCs. ICAO submitted the ICAO position as approved by the ICAO Council through Electronic Bulletin E 3/5. 15-13/57, dated 2 July 2013.

5.2 The Meeting was recalled that the CAR region has expressed its support to this position through several meetings, such as the ANI/WG, E/CAR/CATG and NACC/WG meetings.

5.3 ICAO recalled the Meeting on several activities undertaken to assist the States on this support:

a) Regional Preparatory Workshop for ITU WRC-15 conducted to support States in the appropriate management of the frequency spectrum and preparing to support the ICAO position at ITU WRC-15: http://www.lima.icao.int/MeetProg/mt_MeetingDocumentation.asp?wShortTitle=PREPITUWRC15&wLanguage=S&wYear=2013
b) introduce this topic in all the working group meetings such as the ANI/WG, the E/CAR/CATG, and in GREPECAS; and
c) maintain a list of State Points of Contact (PoCs) in support of the ICAO WRC-15 Position for coordination and mutual support.

5.4 The Meeting emphasized that even though the E/CAR AFS Network is a ground-based closed network, whose affectation to its service due to the spectrum may be very low; most of its end user connections and services are spectrum-based, such as Air-Ground Vey High Frequency (VHF) communications, radar and communication services with adjacent networks. The E/CAR AFS Network is interconnected with the MEVA Network (C-band Very Small Aperture Terminal (VSAT) Network) through San Juan, Puerto Rico. The E/CAR area is connected to the South America Regional Network, the REDDIG Network (C-band VSAT Network).

5.5 Finally the Meeting was informed of the Interamerican Commission of Telecommunication, CITEL support. CITEL may receive all the States positions, individually or as a group, as for example the Caribbean Telecommunication Union (CTU). Currently, the States are still providing their decision for the different positions to present at the WRC-2015 (November 2015). The last CITEL meeting in Merida, Mexico, the XXIV Meeting of the Permanent Consultative Commission: Radio communications (XXIV PCC.II) (September 2014) expressed support to ICAO position; however, no Caribbean support was presented. The next two meetings for States to express their support to these positions are in February 2015 (Medellin, Colombia: (XXV PCC.II) and August 2015 (Ottawa, Canada: (XXVI PCC.II). In this regard the Meeting adopted the following Decision:

DECISION
E/CAR/NTG/5/13 E/CAR/NTG SUPPORT TO ICAO WORLD RADIOCOMMUNICATION CONFERENCE (WRC-2015) POSITION

That, in order to support the ICAO position for WRC-2015, the ECAR/NTG members:

a) contact their National Spectrum Manager Authorities for communicating the ICAO WRC-2015 position including the support on the C-Band protection for aviation;

b) coordinate with corresponding State WRC-2015 PoC, their State support to CITEL proposals in line with ICAO WRC-2015 position; and

c) report progress on items a) and b) in advance to the last two CITEL meetings.

ADS-B and Multilateration Implementation

5.6 Under WP/16, ICAO presented an overview of the ADS-B implementation and the considerations for the support of the Radar Data Sharing Ad hoc Group in the achievement of the regional ADS-B implementation target. ICAO commented on the several activities and mechanisms for the streamlining ADS-B implementation as follows:

- The ANI/WG ADS-B Implementation Task Force is preparing a guide to support the implementation of ADS-B in the CAR Region
- ICAO-FAA have conducted two workshops on ADS-B implementation in 2011 and 2014
- ICAO has implemented an ADS-B activities webpage for State´s common reference on this implementation: http://www.icao.int/NACC/Pages/edocs-cns.aspx
- Through Project CAR RLA/09/801, it is planned to acquire ADS-B receivers for lending between Project members and in order to promote the use and understanding of this service

5.7 The Meeting was recalled that within the E/CAR Radar Data Display Request for Information (RFI) Process, a display has been required to include the capability of processing ADS-B data (ASTERIX CAT 21). France informed the plans to use ADS-B in the French West Indies (FWI) in two phases in 2017 and 2019. The Meeting agreed to support the implementation of ADS-B activities as part of the Radar Data Sharing Ad hoc Group activities and agreed on the following draft conclusion:

DRAFT CONCLUSION
E/CAR/NTG/5/14 INCLUSION OF ADS-B IMPLEMENTATION ACTIVITIES AND RENAMING OF THE RADAR DATA SHARING GROUP

That, in order to support the implementation of ADS-B, the Radar Data Sharing Group:

a) include the necessary tasks in its work programme to assist the ADS-B implementation (trial conduction, etc.);

b) exchange the State ADS-B plans for regional coordination;

c) change the group name to Surveillance Data Sharing Group; and

d) update the Group´s terms of reference and implementation plan as needed.

5.8 Under IP/05, Barbados commented on the costs associated with Wide Area Multilateration (WAM) that need to be factored into cost analysis when comparing it to a SSR solution, suggesting to make agreements between States for allowing sensor spread to be increased by placing some sensors in neighbouring Territories as a means of overcoming this coverage limitation. ICAO Doc 9924 was suggested for reference when using Multilateration (MLAT) systems. Barbados also informed of their MLAT project activities with MLAT for the airport (5 sensors) and tentatively Wide Area Multilateration (WMLAT) (7 sensors to improve the NW sector of Barbados Terminal Control Area (TMA)). MLAT data may be shared eventually to the E/CAR surveillance data pool once progress is made with the Project. Project has a target date of September 2015.

ASBU Considerations for Inclusion in E/CAR/NTG and RDS

5.9 Under WP/17, the Meeting was briefed on the Aviation System Block Upgrade (ASBUs) implementation methodology and the ongoing efforts by ICAO and States for air navigation implementation under this strategy. ASBUs are organized in five-year increment working programmes starting in 2013 and continuing through 2028 and beyond. The ASBU methodology serves as a comprehensive framework encompassing a set of modules, which are organized in flexible and scalable blocks and can be implemented in a State or region depending on the operational needs and preparation level.

5.10 Similarly, the alignment of the NAM/CAR Regional Performance-Based Air Navigation Implementation Plan (NAM/CAR RPBANIP) and the Regional Performance Objectives (RPOs) with the ICAO ASBU modules was noted. Eventually in 2015, the RPBANIP content will migrate to Volume III of the electronic Regional Air Navigation Plan (eANP). The RPBANIP is available at the following link: http://www.icao.int/NACC/Pages/namcar-RPBANIP.aspx

5.11 Considering that the E/CAR AFS communication network and RDS tasks will be key components of the ASBU implementation, the existing work programme and terms of reference need to be reviewed and updated accordantly. In this regard, the following decision was agreed upon:

DECISION
E/CAR/NTG/5/15 **UPDATE THE E/CAR/NTG AND RDS WORK PROGRAMME AND TERMS OF REFERENCE ALIGNING THEM TO THE RPBANIP AND ASBU METHODOLOGY**

That, in order to align the E/CAR/NTG and RDS activities with the ICAO ASBU methodology, the ECAR/NTG and RDS update by the E/CAR/DCA/26 Meeting, the E/CAR/NTG and RDS work programme and terms of reference, aligning them to the RPBANIP and ASBU methodology.

Argyle (Saint Vincent and the Grenadines) AFS requirements

5.12 ECCAA informed that the new Argyle airport was well into construction. A cooperation meeting between Saint Vincent and the Grenadines, Trinidad and Tobago and ECCAA is scheduled for 28 October 2014. ECCAA will timely report the results of this meeting to inform on the AFS requirements that may impact the E/CAR AFS network and radar data activities.

APPENDIX A

FOLLOW-UP TO THE E/CAR/NTG VALID CONCLUSIONS/DECISIONS

Conclusion/Decision	Description	Status
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.	**Superseded** Replaced by two separate draft conclusions: (1) Regarding Anguilla; (2) Regarding St. Kitts
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/CARNTG 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 December2013**.	**Superseded**
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.	**Completed**

Conclusion/Decision	Description	Status
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.	**Completed**
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.	**Completed**
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	**Completed**
Decision E/CAR/NTG/4/07 ANTIGUA AND BARBUDA RADAR RESTORATION	That Antigua and Barbuda reports no later than 30 September 2013, the final status and planning for the restoration of their radar system including the necessary actions to start radar data sharing with Sint Maarten.	**Superseded**
Conclusion E/CAR/NTG/4/08: 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	**Superseded**

Conclusion/Decision	Description	Status
Conclusion E/CAR/NTG/4/09: 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 TopDesk application.	**Completed**
Decision E/CAR/NTG/4/10: 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.	**Completed**
Decision E/CAR/NTG/4/11: 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.	**Completed**
Conclusion E/CAR/NTG/4/12: 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, 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.	(a) **Completed** **(b) Superseded** **(c) Completed**

Conclusion/Decision	Description	Status
Decision E/CAR/NTG/4/13 RADAR TECHNICAL SPECIFICATION REQUEST FOR INFORMATION	In order to provide an accurate scenario for the implementation of the radar display for the medium-long term solution that France and Trinidad and Tobago: a) Complete the update of the radar technical specifications; b) assisted by ICAO, conduct a Request for information for the radar technical specifications for best technical solution for radar data display for situational awareness considering the current radar requests; and c) inform by the E/CAR/DCA/25 Meeting the progress and results of these actions.	**Completed**
Decision E/CAR/NTG/4/14: 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.	**Completed**
Conclusion E/CAR/NTG/4/15: 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.	**Superseded**

Conclusion/Decision	Description	Status
Conclusion E/CAR/NTG/4/16: 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	**Completed**

APPENDIX B

TELECONFERENCE
8th MEVA – E/CAR AFS Network interconnection Meeting at E/CAR/NTG/5-RDS/3
(23 October 2014, 1900 UTC)

References: 7th MEVA II – E/CAR AFS Network interconnection Teleconference

Objective: Discussion of MEVA II – E/CAR AFS Network interconnection implementation.

Agenda:

1. Review Voice circuit configuration and previous valid action items
2. Review Radar data exchange activities and previous valid action items

Participants:

- Sint Maarten: Lloyds Hinds
- United States: Dulce Roses, Dan Eaves, Raul Chong
- Trinidad and Tobago: Veronica Ramdath
- ICAO: Julio C. Siu

Discussions:

Review Voice circuit configuration and previous valid action items

1. Sint Maarten commented the current status of implementation in MEVA II of the 4 voices circuits to be crossover in San Juan to the E/CAR AFS Network, where these circuits are being fully paid by Sint Maarten; however they are not operative at the San Juan node due to the need for additional cards. The participants indicated that the payment should not be made if the circuit was not operative. ACT 01/08: ICAO and the MEVA TMG Coordinator to coordinate with SES of resolving the payment issue of these non-operative voice circuits.

2. Due to the closeness of the transition to MEVA III, it was agreed that the 4 voice circuits be implemented thru MEVA III and not MEVA II, so Trinidad and Tobago confirm the availability of the existing OPX circuits until this implementation. Sint Maarten reconfirmed that the total cost of the implementation of these 4 voice circuits through MEVA III will be covered by Saint Maarten.

3. The valid action Items were reviewed and concluded as follows:

- ACT 01/07: Sint Maarten to send order for total circuit bill for voice circuits by 11 July 2014. Superseded by ACT01/08
- ACT 01/06 Trinidad and Tobago will provide the 4 extension numbers (dialing scheme) for the configuration of the MEMOTEC ports at San Juan: 30 November 2014. Valid
- ACT 03/06 FAA will coordinate will Sint Maarten and Miami to conduct some trials using the existing voice dialed circuits to evaluate the convenience and availability of these circuits to satisfy the AIFSS Service, trials to be conducted in June and to report by 4 July. Completed

Review Radar data exchange activities and previous valid action items

3. ICAO recalled the participants the radar data Y connector pin layout for implementing the two radar feeds in a single circuit.

4. The Participants recalled the information provided by United States on the radar coverage of the three existing radars in San Juan, Pico del Este and Sint Thomas. In this regard the participants identified that the radar feed of Pico del Este will be the required radar feed to be exchanged with Saint Maarten.

5. United States confirmed their commitment to exchange radar data, but also recognized that currently their can not process external radar data feed into San Juan. In this regard United States indicated that they can provide the Pico del Este radar feed to Sint Maarten only. Saint Maarten will then pay for the total data circuit for the radar data feed from Pico del Este radar. The United States has agreed to absorb the cost for the necessary electronic card in the San Juan MEVA III node for the Sint Maarten radar to Trinidad and Tobago. In this regard the following actions we agreed:

- ACT 02/08: Sint Maarten will analyze the conversion of the Pico del Este Radar feed (Common Digitizer-2 -CD2 format) for integrating it in their ATC System. Results to be presented by next teleconference.
- ACT 03/08: FAA will work the necessary arrangements for signing the agreement between United States and Sint Maarten and the necessary technical work for the provision of the radar data to Sint Maarten (San Juan MEVA node), informing by next teleconference.

6. Trinidad and Tobago commented the operational need for sharing this same Pico del Este radar feed for benefit of the PIARCO FIR- San Juan FIR coordination and Antigua APP- San Juan ACC. Trinidad and Tobago will be responsible for the format conversion to integrate it into their Multiradar data processor. ACT 04/08: Trinidad and Tobago will send United States a letter with the request for the Pico del Este Radar feed explaining the operation benefits foreseen for the PIARCO FIR and Antigua APP: 30 November 2014. ACT 05/08 Trinidad and Tobago to will analyze the conversion of the Pico del Este Radar feed (Common Digitizer-2 -CD2 format) for integrating it in their ATC System. Results to be presented by next teleconference.

7. The valid action Items were reviewed and concluded as follows:

- ACT 04/06 FAA (Olivier) will draft a configuration document for the data and voice circuits to be implemented for the MEVA-ECAR interconnection with the agreements made in these teleconferences, first draft by 30 November. Valid
- . ACT 02/07 FAA will send enquiry to Sint Maarten for the San Juan Radar feed no later than 11 July 2014. Superseded by ACT 03/08
- ACT 01/06: United States will submit their radar theoretical coverage (FL 10, 30, 50, 100, 150, 200 and 300) and radar technical information of San Juan and Virgin Island radars to the rest of participants and ICAO for further evaluation on the effective coverage available for the users (30 April 2013). Completed

Next Teleconference: Tentatively January 2015.

APPENDIX C

CONSIDERATION FOR THE INSTALLATION OF CPUS DONATED BY FRANCE

1. Mode of operation for each State

1.1 Preparation

- Initiation of exchanges by email
- Definition of the radar configuration: maps, display centre and validation of the radar display picture by mail (jpeg of the display with maps)
- Preparation of the installation (technical prerequisites: cables, screen, power, etc.)
- Definition of a date for installation and basic training

1.2 Installation

- SNA/AG comes on site with CPU, install it, switch it on, and test it. Estimated time: 3 hours, depending on technical difficulties. It is recommended that technician(s) that are to be train are participating to the installation

1.3 Basic Training

- SNA/AG will let basic user documentation, and will train technicians then ATC users
- Technical presentation will be proposed to local technical staff: the processes, how to restart the system, points of contacts in SNA/AG in case of problem. Estimated time: 1 hour, 3 persons max.
- Simple demonstration of the capacity of the tool will be presented for ATCO(s) / trainer (using the IRMA2000 User Manual. That presentation will indicate how to use the system and its menus. Estimated time: 2 hours, 3 persons max.

1.4 Facilities

a) The State will be responsible for organizing that day and inviting ATCO and technicians who should attend the installation and the presentations.

b) The State will be responsible for customs facilities and transportation to the room where the system will be installed.

c) The State is responsible for the delivery of needed prerequisites as defined in the document “2013-09-09 Template for requesting IRMA French radar display”.

1.5 Upgrade of IRMA2000 systems

a) No upgrade will be provided on these systems, as within following 5 years, French West Indies ATM will be replaced (surveillance systems, flight plan processing systems).

b) This replacement is part of a French program called Overseas Modernization Plan. In this plan, Cayenne (French Guyana) is the first site to be installed, with an integrated system providing surveillance with Radar, ADS-B, ADS-C, safety nets, CPDLC, electronic stripping, for tower, approach, and oceanic control.

APPENDIX D
RADAR DATA COVERAGE INFORMATION OF THE RADARS IN SAN JUAN, PICO DEL ESTE AND SAINT THOMAS

MSSR NAME: Pico del Este, Puerto Rico

Radar Head Name	Pico Del Este, Puerto Rico
Name code	QJQ
Manufacturer and Model	Raytheon
Radar model	ATCBI-6
Radar Format (and SIC for Asterix)	CD
SAC in hexa	
SIC in hexa	
Radar revolution period in seconds	12
Site Latitude (WGS84)	18.16.07.260 N
Site Longitude (WGS84)	065.45.31.430 W
Site Altitude ***in meters (AMSL)***	162
Test Transponder Code	
SSR Range coverage (nm)	200
Time Stamping	No time stamping
Cone of silence	

PSR NAME: Pico del Este, Puerto Rico

Radar Head Name	Pico Del Este, Puerto Rico
Name code	QJQ
Manufacturer and Model	Raytheon
Radar model	CARSR
Radar Format (and SIC for Asterix)	CD
SAC in hexa	
SIC in hexa	
Radar revolution period in seconds	12
Site Latitude (WGS84)	18.16.07.260 N
Site Longitude (WGS84)	065.45.31.430 W
Site Altitude ***in meters (AMSL)***	162
Test Transponder Code	
SSR Range coverage (nm)	200
Time Stamping	No time stamping
Cone of silence	

MSSR NAME: San Juan, Puerto Rico

Radar Head Name	San Juan, Puerto Rico
Name code	SJU
Manufacturer and Model	Bendix
Radar model	ATCBI-5
Radar Format (and SIC for Asterix)	Modified CD
SAC in hexa	
SIC in hexa	
Radar revolution period in seconds	4.7
Site Latitude (WGS84)	18.27.06.710 N
Site Longitude (WGS84)	065.01.28.530 W
Site Altitude ***in meters (AMSL)***	3
Test Transponder Code	
SSR Range coverage (nm)	150
Time Stamping	No time stamping
Cone of silence	

PSR NAME: San Juan, Puerto Rico

Radar Head Name	San Juan, Puerto Rico
Name code	SJU
Manufacturer and Model	Texas Instruments ASR-8
Radar model	ASR-8
Radar Format (and SIC for Asterix)	Modified CD
SAC in hexa	
SIC in hexa	
Radar revolution period in seconds	4.7
Site Latitude (WGS84)	18.27.06.710 N
Site Longitude (WGS84)	065.01.28.530 W
Site Altitude ***in meters (AMSL)***	3
Test Transponder Code	
SSR Range coverage (nm)	60
Time Stamping	No time stamping
Cone of silence	

MSSR NAME: Saint Thomas, U.S. Virgin Islands

Radar Head Name	Saint Thomas, U.S. Virgin Islands
Name code	STT
Manufacturer and Model	Bendix
Radar model	ATCBI-5
Radar Format (and SIC for Asterix)	CD
SAC in hexa	
SIC in hexa	
Radar revolution period in seconds	4.7
Site Latitude (WGS84)	18.20.49.800 N
Site Longitude (WGS84)	065.01.33.500 W
Site Altitude ***in meters (AMSL)***	130
Test Transponder Code	
SSR Range coverage (nm)	150
Time Stamping	No time stamping
Cone of silence	

PSR NAME: Saint Thomas, U.S. Virgin Islands

Radar Head Name	Saint Thomas, U.S. Virgin Islands
Name code	STT
Manufacturer and Model	Texas Instruments ASR-8
Radar model	ASR-8
Radar Format (and SIC for Asterix)	CD
SAC in hexa	
SIC in hexa	
Radar revolution period in seconds	4.7
Site Latitude (WGS84)	18.20.49.800 N
Site Longitude (WGS84)	065.01.33.500 W
Site Altitude ***in meters (AMSL)***	130
Test Transponder Code	
SSR Range coverage (nm)	60
Time Stamping	No time stamping

Cone of silence	

Theoretical Coverage for
St. Thomas, San Juan and Pico del Este radars

Action: ***ICAO ACT 04/06 Submit theoretical coverage of FL 10, 30, 50, 100, 150, 200, and 300.***

St. Thomas

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Flight level	**Distance (NM)**
10	29
30	60
50	82
100	118
150	148
200	172
300	Beyond Range of System

San Juan

Flight level	**Distance (NM)**
10	41
30	66
50	86
100	123
150	149
200	173
300	Beyond Range of System

Pico del Este

Flight level	**Distance (NM)**
10	Below horizon
30	Below horizon
50	51
100	98
150	131
200	158
300	200