Organización de Aviación Civil Internacional
Oficina para Norteamérica, Centroamérica y Caribe

NOTA DE ESTUDIO

Octava Reunión del Grupo de Trabajo de Norteamérica, Centroamérica y Caribe (NACC/WG/8)
Ciudad de México, México, 29 de agosto al 1 de septiembre 2023

**Cuestión 3 del
Orden del Día:**   **Seguimiento al plan de acción 2022-2023 del NACC/WG**

3.7   Avances en CANSNET y la interconexión con la Red ECAR, el Grupo Técnico sobre Aviación Civil para el Caribe Oriental (E/CAR/CATG) y el Grupo Técnico de Redes de Servicio Fijo Aeronáutico del Caribe Oriental (E/CAR AFS NTG)

INFORME DE LOS GRUPOS AD-HOC DE LAS REUNIONES E/CAR/NTG/12 E E/CAR/RD/10

(Presentada por Relator de E/CAR/NTG)

RESUMEN EJECUTIVO	
Este documento presenta el informe de las reuniones E/CAR/NTG/12 y E/CAR/RD/10.	
Acción:	Las acciones sugeridas se presentan en la Sección 3.
Objetivos Estratégicos:	• Seguridad Operacional • Capacidad y eficiencia de la navegación aérea • Desarrollo económico del transporte aéreo • Protección del medio ambiente
Referencias:	• Reuniones E/CAR/NTG/12 y E/CAR/RD/10, Miami, Estados Unidos, 24 al 25 de julio de 2023

1.   Introducción

1.1   La Duodécimo Reunión del Grupo Técnico para la Red del Caribe Oriental (E/CAR/NTG/12) y la Décima Reunión del Grupo Ad hoc de Intercambio de Datos Radar del Caribe Oriental (E/CAR/RD/10) se celebraron en la Oficina Regional de las Américas de la IATA en Miami, Estados Unidos, los días 24 y 25 de julio de 2023. Asistieron a las reuniones siete (7) Estados/Territorios, tres (3) organizaciones internacionales y la Secretaría de la OACI, con una participación total de veintiún (21) delegados.

2.   Discusión

2.1   La reunión revisó las conclusiones de las reuniones E/CAR/NTG/12 y E/CAR/RD/10 y proporcionó información actualizada sobre la mejora de la red E/CAR/AFS y los proyectos ADS_B/MLAT de Piarco. De las catorce (14) conclusiones revisadas, nueve (9) se han completado y cinco (5) siguen siendo válidas con actividades en curso. El informe de las reuniones se presenta en el **Apéndice** (únicamente en inglés) de la presente nota de estudio.

2.2 Los Términos de Referencia (TdR) así como la Información de los Puntos de Contacto para la coordinación de las actividades de mantenimiento para la Red AFS E/CAR y los Estados/Territorios Miembros del Grupo Técnico de la Red E/CAR (E/CAR/NTG) fueron actualizados durante la Reunión ECAR NTG 12 & ECAR RD 10 ya que los Estados indicaron que no reciben información sobre los eventos, documentos y reuniones importantes de la OACI para poder participar en dichas reuniones.

3. **Acciones sugeridas**

3.1 Se invita a la Reunión a:

a) tomar nota de las actividades y avances de los grupos E/CAR/NTG y E/CAR/RD; y b) acordar cualquier otra acción que se considere oportuna.

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Twelfth Eastern Caribbean Network Technical Group (E/CAR/NTG/12)
and Tenth Eastern Caribbean Radar Data Sharing Ad hoc Group
(E/CAR/RD/10) Meetings

Draft Report

Miami, United States
24-25 July 2023

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HISTORICAL

ii.1 **Place and Date of the Meeting**

The Twelfth Eastern Caribbean Network Technical Group (E/CAR/NTG/12) and Tenth Eastern Caribbean Radar Data Sharing Ad hoc Group (E/CAR/RD/10) meetings were held at the IATA Americas Regional Office in Miami, United States on the 24 – 25th July 2023.

ii.2 **Officers of the Meeting**

The E/CAR/NTG/12 and E/CAR/RD/10 meetings were chaired as plenary by Mr. Steve Saroop as the interim E/CAR/NTG Rapporteur and Mrs. Mayda Avila, ICAO NACC Office.

ii.3 **Working Languages**

The working language of the meetings was English.

ii.4 **Agenda**

1.0   Review of Valid Conclusions from E/CAR/NTG/11 & E/CAR/RD9 Meetings.
2.0   Operation and Performance of the E/CAR Aeronautical Fixed Services (AFS) Network.
3.0   Next Meetings.

ii.5 **Attendance**

The Meetings were attended by seven (7) States/Territories, three (3) International Organization and ICAO Secretariat with total participation of twenty-one (21) delegates as indicated in the list of participants.

ii.6 **Status of ECARNTG10–ECARRD8 Reviewed Conclusions**

Number	Status
ECARNTG11–ECARRD9/01	Completed
ECARNTG11–ECARRD9/02	Completed
ECARNTG11–ECARRD9/03	Completed
ECARNTG11–ECARRD9/04	Completed
ECARNTG11–ECARRD9/05	Valid
ECARNTG11–ECARRD9/06	Completed
ECARNTG11–ECARRD9/07	Completed
ECARNTG11–ECARRD9/08	Completed
ECARNTG11–ECARRD9/09	Completed
ECARNTG12–ECARRD10/01	Valid
ECARNTG12–ECARRD10/02	Valid
ECARNTG12–ECARRD10/03	Valid
ECARNTG12–ECARRD10/04	Completed
ECARNTG12–ECARRD10/05	Valid

LIST OF PARTICIPANTS

ANTIGUA AND BARBUDA.
1. Natasha Mussington
2. Audrey Lorraine Davis
3. Shennette Phillips

ECCAA
4. Trevor Davis
5. Denise Silston
6. Luana Issac

FRANCE - FRENCH WEST INDIES
7. Frederic Danloux

MARTINIQUE
8. Harry Asselin de Beauville

SAINT LUCIA
9. Kendell Peter
10. Lynden Heath Leonce

TRINIDAD AND TOBAGO
11. Rupnarine Baboolal
12. Steve Saroop

UNITED STATES
13. Nigel Simmons
14. Al O'Neill
15. Rudolph Lawrence
16. Linda McCray
17. Jorge Chades

ADACEL INC.
18. Marcelo del Valle Hiayes

COLLINS
19. Manny Gongora

MORCOM INTERNATIONAL INC.
20. Alejandra Bertrand

ICAO / OACI
21. Mayda Avila

1.0   **Discussions**

1 . 1   The Meeting reviewed the valid conclusions from the E/CAR/NTG 11 and E/CAR/RD 9 meetings.

1.1.1   **Conclusion**
        ECARNTG11–ECARRD9/01   *REVIEW OF THE CAR/SAM REGIONAL AIR NAVIGATION PLAN*
        (ANP) TO ENSURE UPDATED INFORMATION ON
        INFRASTRUCTURE

That, in order to review and update the electronic Air Navigation Plan Volumes I and II, Eastern Caribbean States/Territories, in coordination with the ICAO NACC Regional Office, review the eANP CAR/SAM Volume I and Volume II to ensure updated information on CNS infrastructure and services indicated in these documents by 15 March 2022.

Conclusion	States	Progress/Update
ECARNTG12–ECARRD10/01	E/CAR/AFS Members	Completed

1.1.2   **Conclusion**
        ECARNTG11–ECARRD9/02   *EVALUATION OF NEEDS FOR BACKUP COMMUNICATION FOR*
        EASTERN CARIBBEAN STATES

That, taking into account the process of developing the technical specifications of the MEVA regional communications network is under development and within the document all the technical requirements and communications needs of the Caribbean States will be specified, and since the communications network of the Eastern Caribbean States has interconnections with the MEVA network, E/CAR States:

a) *evaluate their back-up communication needs by December 2021*
b) *share the technical and operational information with the MEVA/TMG and coordinate their needs to be integrate in the new MEVA phase by December 2021.*

Conclusion	States	Progress/Update
ECARNTG12–ECARRD10/02	E/CAR/AFS Members	Completed

1.1.3 **Conclusion**

ECARNTG11–ECARRD9/03 *REGIONAL AVIATION CAPACITY AND INFRASTRUCTURE INTEGRATION*

That, in order to promote the aviation development of the Eastern Caribbean States and to integrate the regional aviation capacity and infrastructure, the E/CAR States and Territories update:
   a) *the CNS capacity of their air aviation system; and*
   b) *their air navigation plan in accordance with the new requirements of the Global Air Navigation Plan (GANP) by 15 March 2022.*

Conclusion	States	Progress/Update
ECARNTG12–ECARRD10/03	E/CAR/AFS Members	Completed

1.1.4 **Conclusion**

ECARNTG11–ECARRD9/04 *SUPPORT TO DOMINICA, SAINT KITTS AND NEVIS AND SAINT VINCENT AND THE GRENADINES IN THEIR SURVEILLANCE INFRASTRUCTURE*

That, Dominica, Saint Kitts and Nevis, and Saint Vincent and the Grenadines is not interested in the procurement processes of an ATM surveillance system for situational awareness.

Conclusion	States	Progress/Update
ECARNTG12–ECARRD10/04	E/CAR/AFS Members	Completed

1.1.5 **Conclusion**

ECARNTG11–ECARRD9/05 *REVISION OF E/CAR ATFM LETTER OF AGREEMENT FOR RADAR DATA SHARING*

That, in order to formalize the radar data sharing activities and foster the regional E/CAR ATFM initiative, Barbados review its existing LOAs by 31 January 2022 to include the authorization to Trinidad and Tobago to exchange the Multi Radar Tracker (MRT), including any surveillance type feeds with Eastern Caribbean and Caribbean States under the intent of the E/CAR/RD project with the FAA as part of the ATFM initiative.

Conclusion	States	Progress/Update
ECARNTG12–ECARRD10/05	Barbados	Amendments to LOA to be completed by 31 January 2024. After which it will submitted to the regulatory section for review.
	Trinidad and Tobago	Ratification of revised LOA upon receipt.

1.1.6 **Conclusion**
ECARNTG11–ECARRD9/06   *ANTIGUA PLANNING FOR RADAR DATA*

That, in order to ensure the appropriate planning and coordination for testing and integrating the radar data from the Antigua Radar into the E/CAR MRT data, that Antigua and Barbuda share the planning details (timelines and actions), technical information (radar data format, circuit speed, etc.) for the new radar in Antigua by 30 June 2022.

Conclusion	States	Progress/Update
ECARNTG12–ECARRD10/06	E/CAR/AFS Members	Completed

1.1.7 **Conclusion**
ECARNTG11–ECARRD9/07   *SURVEILLANCE DATA REQUIREMENTS FOR ANGUILLA ND MONTSERRAT*

That,
  a) *ICAO send a reminder letter by 31 December 2021, to the authorities in Anguilla and Montserrat regarding their surveillance requirements in terms of situational awareness and their plans to move forward with this implementation before 2023; and*

  b) *ECCAA provide the NTG Rapporteur by 31 December 2021, the contact details of the local persons in Anguilla and Montserrat to engage discussions on the situational awareness.*

Conclusion	States	Progress/Update
ECARNTG12–ECARRD10/07	E/CAR/AFS Members	Completed

1.1.8 **Conclusion**
ECARNTG11–ECARRD9/08   *INCREASE THE RELIABILITY OF THE E/CAR NETWORK AND ITS NODES*

That, due to the increased number of cyberattacks on aeronautical systems like the E/CAR Network, and in order to increase the reliability of the E/CAR network and its nodes, Eastern Caribbean States/ Territories:
  a) *join the activities and action plan led by the ICAO NACC Regional Office on cybersecurity assessment in the E/CAR States; and*
  b) *designate a point of contact to coordinate the different State activities for this action Plan by 31 December 2021*

Conclusion	States	Progress/Update
ECARNTG12–ECARRD10/08	E/CAR/AFS Members	Completed

1.1.9   **Conclusion**
         ECARNTG11–ECARRD9/09   *CYBER SECURITY VULNERABILITY ASSESSMENT*

That, due to the increased number of cyberattacks on systems, in order to increase the reliability of the nodes and the network, ECCAA, Barbados, France, Trinidad and Tobago and the United States conduct a cybersecurity vulnerability assessment on the E/CAR AFS Network by the E/CAR/NTG/11 Meeting.

   a) *join the activities and action plan led by the ICAO NACC Regional Office on cybersecurity assessment in the E/CAR States; and*
   b) *designate a point of contact to coordinate the different State activities for this action Plan by 31 December 2021.*

Conclusion	States	Progress/Update
ECARNTG12–ECARRD10/09	E/CAR/AFS Members	Completed

1.1.10   **Conclusion**
         ECARNTG12–ECARRD10/01   **NEED TO IMPROVE COMMUNICATION MECHANIC TO SEND ICAO EVENT INFORMATION AND DOCUMENTATION TO THE PoC OF THE ECAR STATES**

That, the Technical and operational points of contact do not receive information about ICAO events, documents, and Important meetings which the Eastern Caribbean States need to participate in. In that sense, after an evaluation was done, it was found that there is a need to improve communication with the Eastern Caribbean States. The following actions are recommended:

   a) *Each Eastern Caribbean States updated their information of the Official Point of Contacts (PoC) and the updated PoC document was sent to the ICAO NACC office on August 4ᵗʰ, 2023*
   b) *ICAO NACC will update the distribution list for ECAR States communication before the next meeting.*

1.1.11   **Conclusion**
         ECARNTG12–ECARRD10/02   **IMPROVE MAINTENANCE and PERFORMANCE PROCESS IN THE ECAR COMMUNICATION NETWORK**

That, the quality of service provided to network users has decreased, causing a degradation of service that directly contributes to operational safety. In this regard, the States have informed Trinidad and Tobago of this issue, and that State undertakes to:

   a) *Report all faults on TopDesk/CNS Email/ECAR Phone and communicate them to the TTCAA for resolution*
   b) *coordinate with the network provider to improve service to users*
   c) *implement improved fault monitoring and troubleshooting*
   d) *to perform a better control of the service provided by the supplier by January 31ˢᵗ, 2024*

1.1.12   **Conclusion**
  ECARNTG12–ECARRD10/03   **CREATE AN AD-HOC GROUP RESPONSIBLE TO DEVELOPMENT A PPROJECT PROPOSE FOR A REGIONAL COVERAGE OF SURVEILLANCE DATA**

That, a regional AD-HOC Group project, within the ECAR NTG and RD group, be created to assess the elements in the implementation plan of the ADS-B/CNS initiatives in Air Navigation in the ECAR Region. This will help provide information on the current and future systems with technical and operational recommendations for states implementation development a regional ADS-B project propose for ECAR Region.

  a) *An ad-hoc group, composing of the members of states and organizations, be created,*
  b) *That the ad-hoc group be part of the ECAR NTG/RD meeting, and*
  c) *That the DCAs in the region be made aware of the concept of a regional project for future implementation by June 30th, 2024.*

1.1.13   **Conclusion**
  ECARNTG12–ECARRD10/04   ***NEW ECAR/NTG, ECAR/RD RAPPORTEUR***

That, due to the retirement of Mrs. Veronica Ramdath, it is necessary to have a person responsible for the Task Groups in the CNS area. In this sense, the meeting approved that Mr. Steve Saroop, as the new rapporteur of the CNS Groups of ECAR/ NTG and ECAR/RD.

Conclusion	States	Progress/Update
ECARNTG12–ECARRD10/08	E/CAR/AFS Members	Completed

1.1.14   **Conclusion**
  ECARNTG12–ECARRD10/05   **CREATE AN AD-HOC GROUP TO DEVELOP AN ADS-B IMPLEMETATION PROJECT FOR ECAR STATES**
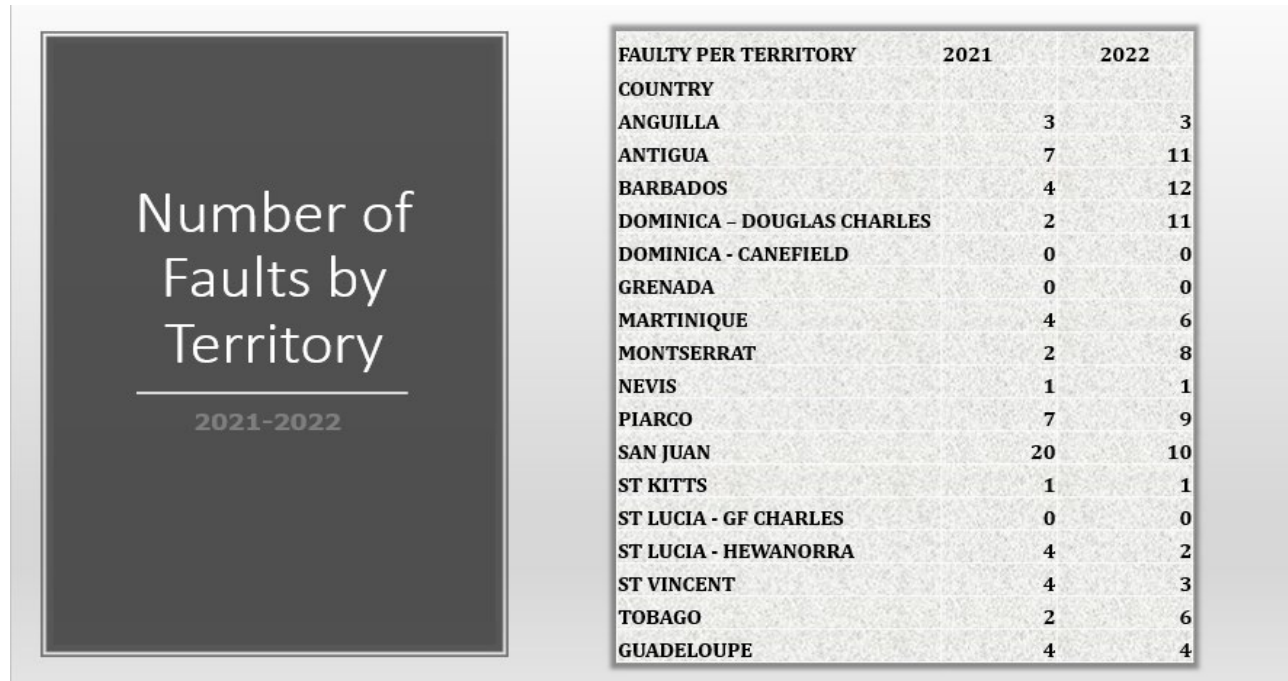
That, a regional ADS-B ad-hoc task force be created to developed an ADS-B implementation projects Team to provide information and to collaborate ADS-B information among all ECAR States.

  a) *An ad-hoc group, composing of the members of states and organizations, be created,*
  b) *Emails sent out to nominate persons to join the team, and*
  c) *The team to be established by November 2023.*

2.0 Operation and Performance of the E/CAR Aeronautical Fixed Services (AFS) Network

2.1 The Meeting presented the report on the network performance normally provided by the Service Provider, TSTT. The information contained in the report included the ECAR network features, the managed service capabilities, network performance analysis and upgrade and recommendations for the new AFS Upgrade which were share with the member states of the AFS Network. The statistics showed the number of faults by territory and the percentage availability of the ECAR year to year comparison (2021 – 2022) and are included below in this report:

Number of Faults by Territory

FAULTY PER TERRITORY COUNTRY	2021	2022
ANGUILLA	3	3
ANTIGUA	7	11
BARBADOS	4	12
DOMINICA – DOUGLAS CHARLES	2	11
DOMINICA - CANEFIELD	0	0
GRENADA	0	0
MARTINIQUE	4	6
MONTSERRAT	2	8
NEVIS	1	1
PIARCO	7	9
SAN JUAN	20	10
ST KITTS	1	1
ST LUCIA - GF CHARLES	0	0
ST LUCIA - HEWANORRA	4	2
ST VINCENT	4	3
TOBAGO	2	6
GUADELOUPE	4	4

Number of Faults by Territory 2021-2022

Percentage Availability ECAR Year to Year Comparison

AVAILABILITY	2020	2021	2022
Column1	Column2	Column3	Column4
COUNTRY			
ANGUILLA	99.56%	99.14%	99.21%
ANTIGUA	99.77%	99.96%	99.45%
BARBADOS	99.85%	99.96%	99.89%
DOMINICA – DOUGLAS CHARLES	94.52%	97.05%	99.58%
DOMINICA - CANEFIELD	0.00%	0.00%	0.00%
GRENADA	99.82%	99.49%	99.96%
MARTINIQUE	99.85%	99.97%	99.73%
MONTSERRAT	97.78%	95.23%	99.94%
NEVIS	99.43%	99.88%	99.19%
PIARCO	99.94%	99.97%	99.96%
SAN JUAN	99.59%	99.73%	99.64%
ST KITTS	99.29%	99.84%	99.97%
ST LUCIA - GF CHARLES	99.91%		
ST LUCIA - HEWANORRA	95.84%	99.96%	98.73%
ST VINCENT	99.65%	99.75%	99.91%
TOBAGO	92.67%	98.51%	99.98%
GUADELOUPE	99.85%	99.95%	99.75%

% Availability ECAR YOY Comparison 2020-2022

2.2 France (FWI) informed the E/CAR/NTG/12-E/CAR/RD/10 meeting that there are plans for the modernization of the overseas ATM systems. These heterogeneous systems (IRMA and SIGMA) will be replaced by a single system. The change is being managed through the project called SEAFLIGHT. ADACEL's Aurora Air Traffic Management is the heard of our new system. It integrates approach and tower control capabilities.

Each controller position will include 3 screens: airspace situation, electronic flight strip, general information (weather, ATIS, etc.). The new features of the system includes:
  a) Electronic flight strips,
  b) Automatic coordination: between Martinique and Guadeloupe and opportunity to do AIDC with other ANSP, and
  c) a second MRT DACOTA is installed in Guadeloupe and will be in operation in 2025

Martinique will be in operation in 2024, Guadeloupe in 2025. As a result:
  a) From 2025:
    i. IRMA will not be used anymore by FWI. Any Assistance on IRMA will not be possible.
    ii. MAC LLC radar data format will be discontinued
    iii. The FWI MRTs, DACOTA, will use format UDP/IP
  b) All IRMA installed in the East Caribbean islands use the MAC LLC format. From 2025, these IRMA will not be able to display DACOTA and French radar data.
  c) Automatic coordination, AIDC, with other ANSP (Trinidad & Tobago, Barbados, St Lucia, etc.) could be used from 2024.

2.3   The upgrade of the AFS MPLS Network is in the final stages for its implementation. The routers and switches has been configured by TSTT, the Proof of Concept (PoC) completed and shipped to the various ECAR States installation sites. The Proof of Concept (PoC) was successfully completed between TSTT and the TTCAA.

The first installation of equipment at the Piarco ACC and Tobago Node to commence in September 2023. Once the Piarco and Tobago Nodes are tested and fully functional then the cut over off all the ECAR State Nodes will be implemented on a node by node basis. The installation and cut over of the equipment in the project is scheduled to be completed within this last quarter of 2023 .

All efforts are being made to push through with the implementation since failures of the Cisco 2921 routers are being reported. Notwithstanding the setbacks, the new network is expected to be completed within calendar year 2023.

2.4   The Automatic Dependent Surveillance – Broadcast (ADS-B) Multilateration (MLAT) System for the Piarco FIR started in August 2018. Through the tendering process by the ICAO TCB, a successful vendor was selected to provide the contract.

Due to the Covid-19 pandemic, the contract, although negotiated, was on hold. The project initially envisaged to be completed in 2019 in two (2) phases. It's now rescheduled to start in the last quarter of 2023 with the first phase, ADS-B/WAM System, being implemented in Trinidad, Tobago and Barbados with the installation, testing, validation and integration. The second phase, ADS-B Sub System composed of two (2) ADS-B Ground Stations, should be completed by the second quarter of 2024 with the installation, testing, validation and integration of the sites in Antigua & Barbuda and Saint Lucia. This schedule is tentative pending any unforeseen circumstances that may adversely affect shipment of equipment, travel and weather related matters.

2.5   The Thirty-third MEVA Technical Management Group Meeting (MEVA/TMG/33) created an Ad-Hoc Group composed of COCESNA, Cuba, Dominican Republic, and United States to address the requirements for a replacement network for MEVA III. Projections suggested that apart from increased bandwidth, the infrastructure needed better availability through redundancy. The group issued a Request for Information (RFI) in 2020 and the results found that a core telco-grade terrestrial Multi-Protocol Label-Switched (MPLS) network would provide for the bandwidth needs.

In creating the technical requirements for the new network, the Ad-Hoc group recognized the need to connect to other regional networks at the telecommunications provider level. A requirement to connect to the E/CAR network at San Juan, Puerto Rico remain as they are for MEVA III. Other E/CAR connection methods can be explored in the future.

At the Thirty-Eighth MEVA Technical Management Group Meeting (MEVA/TMG/38) in Mexico City, 11-14 July 2023, the technical requirements and evaluation criteria were approved for the ICAO bidding process that will commence shortly. The new network is intended to be operation before the expiration of the MEVA III contract in March 2025.

3.0   Next Meetings

3.1   The Meeting will be held in Antigua and Barbuda in 2024 as indicated by the ECAR CATG Rapporteur and the E/CAR/NTG-E/CAR/RD and the E/CAR/CATG meetings were held consecutively within the same week. The Meeting agreed that the maintenance activities for the E/CAR/AFS Network be adhered to due to the failure of the current routers and provide timely information on the upgrade of the new network and that the regional surveillance activities be progressed and monitored through the establishment of an Ad-hoc task force.