International Civil Aviation Organization
North American, Central American and Caribbean Office (NACC)
First Eastern Caribbean Civil Aviation Technical Group Meeting (E/CAR/CATG/1)
Martinique, French Antilles, France, 19 to 21 June 2013

Agenda Item 4 **Air Navigation Matters**

4.2 Follow-up on the implementation of the NAM/CAR Regional Performance Based Air Navigation Plan (RPBANIP) in Eastern Caribbean

COMMUNICATION NEEDS WITH DAKAR, SAL, AND SANTA MARIA FLIGHT INFORMATION REGIONS

(Presented by Trinidad and Tobago)

SUMMARY	
This paper presents the operational requirements and possible solutions for communication between the FIRs of Piarco and Dakar, Sal and Santa Maria.	
References: • Final Report, Sixteenth Informal Coordination Meeting of Air Traffic Services Over the South Atlantic (SAT/16), Recife, Brazil 2-6 May 2011	
Strategic Objectives	*This working paper is related to Strategic Objectives:* *A. Safety – Enhance global civil aviation safety* *C. Environmental Protection and Sustainable Development of Air Transport*

1. Introduction

1.1 Trinidad and Tobago has an operational requirement to coordinate the movement of aircrafts with the Air Navigation Service Providers (ANSPs) of the adjacent FIRs of Dakar, Sal and Santa Maria. Presently such coordination is achieved via the Public Switched Telephone Network (PSTN). PSTN are unsecure and unreliable and are not recommended as the primary medium of voice communication for air navigation services.

2. Discussion

2.1 At a bilateral meeting with the DGAC, the French Civil Aviation Authority/ Service de la Navigation Aerienne -Antilles Guyane (SNA-AG) in Trinidad held on10th -11th April 2013, information was shared on the speech requirements to communicate with Dakar, Senegal. In French Guyane, they are also using PSTN lines to enact voice communications with Dakar ANSP. In addition to speech requirements there will soon be ATS Interfacility Data Communication (AIDC) requirements for both

SNA-AG and Trinidad and Tobago. The SNA/AG is analysing the possibility for the implementation of a Central Atlantic Flight Information Regions Communication Satellite Network (CAFSAT) node in French Guyane. CAFSAT is the satellite network that supports voice and data communication requirements in the FIRs of Las Palmas (Canary Islands, Spain), Santa Maria (Azores, Portugal), Lisbon (Portugal), Casablanca (Morocco), Sal (Cape Verde), Dakar (Senegal), Recife (Brazil), Johannesburg (South Africa), Buenos Aires (Argentina) and Nouakchott (Mauritania).

2.2 Several years ago Trinidad and Tobago initiated communication through International Civil Aviation Organization (ICAO) North American, Central American and Caribbean (NACC) Regional Office (RO), on a possible CAFSAT/REDDIG interconnection via Recife, Brazil. As a result, the 16th Meeting of the South Atlantic SAT/16 meeting (Recife Brazil 4 to 6 May 2011) analysed the possibility to make the interconnection of the ATS speech circuit from the CAR/SAM Region to the African (AFI) Region using the REDDIG and CAFSAT network with a double satellite hop communication and drafted the following Conclusion SAT/16/19: ATS voice circuits implementation via REDDIG and CAFSAT VSAT networks:

Conclusion SAT/16/19: ***ATS voice circuit implementation via REDDIG and CAFSAT VSAT networks***

That: Argentina, Brazil, French Guyana, Santa Maria, Senegal, South Africa, Trinidad &Tobago and Uruguay inform to the respective ICAO regional offices by the fifteen June 2011 their intention to implement ATS voice trials using a double hop satellite link through the REDDIG and CAFSAT networks following the draft Action Plan presented as Appendix to this report, in order to complete the pending direct circuit implementation between CAR /SAM and AFI region specified in their respective Air Navigation Plan (Doc 8733 & 7474).

2.3 Currently, Trinidad and Tobago needs three (3) voice circuits and three (3) AIDC. Cayenne (French Guyenne) would need one (1) voice circuit and one (1) AIDC.

2.4 The following are broadly defined solutions to be considered:

- Trinidad and Tobago joining the CAFSAT network. A proposal received from INSA (2008) estimated the capital cost of a node at US$250,000.00 – capital expenditure plus services.

- Sharing the CAFSAT node in French Guyane (if and when implemented) through an International Private Leased Circuit (IPLC) from Trinidad. Budgetary estimates were requested from telecommunications providers for the IPLC. Based on past experience with similar IPLC costs, this may not be an economical solution.

- Using REDDIG and then a REDDIG-CAFSAT ground interconnection in French Guyane, Brazil or Argentina. This would require agreement by the host State for the additional hardware and services and would introduce a ‘double hop’ delay in the voice communications. Apart from the agreements that would be required, the voice delay response may be unacceptable to ATS.

2.5 On behalf of Trinidad and Tobago, the ICAO NACC RO once again contacted the ICAO RO of Western & Central African (WACAF) Office and the CAFSAT Network Management Committee (NMC) and conveyed the operational requirements for Trinidad and Tobago and the French Civil Aviation in the interest in obtaining further information about the CAFSAT network. Subsequently, the CAFSAT NMC has extended an invitation to attend the Third Meeting of the CAFSAT Network Management Committee (CNMC/3) and Eight Meeting of the FANS1/A Interoperability Team (SAT/FIT/8), 15 to 16 July 2013 to be held in Dakar, Senegal to express the ATS requirements to the CAFSAT NMC, seek agreement from the administrations of Dakar, Sal and Santa Maria to share voice and data communications via the CAFSAT network and obtain additional information on the administration, operational costs and upgrade of CAFSAT.

2.6 Resulting from this initial coordination between Trinidad and Tobago and ICAO, the following information from the CAFSAT Network is known:

- Operating Satellite: INTELSAT IS-901 (342º E)
- Satellite Access: FDMA
- Operating Band: C band
- Coverage: Hemispheric Beam
- CAFSAT network providers are:
  - INSA (Spain) for the VSAT node facilities (Antenna, Radios, Modems, Multiplexers...)
  - INTELSAT for the satellite bandwidth service
- The Administration of CAFSAT is done under the Terms of Reference of CNMC whose deliberations and proposals are reported to the SAT meeting
- The maintenance operation is handled by each node operator.

2.7 Currently other information has been requested to the CAFSAT Network for collecting all the economic, technical and administrative information to proceed with a decision on the best cost-effective solution for the PIARCO FIR and Guyanne FIR.

3. Suggested action

3.1 The meeting is invited to:

a) Take note of the information contained in this working paper; and

b) Agree to any other actions as deemed appropriate.

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