



Agenda Item 5

Air Navigation Matters

5.2 E/CAR Aeronautical Fixed Services (AFS) Network

Advances in E/CAR Network Activities by TTCAA

(Presented by Rapporteur of CNS Committee)

SUMMARY	
This paper provides information on the advances and activities conducted by the TTCAA and the current status of the E/CAR network.	
References:	
• Thirty-First Eastern Caribbean Working Group Meeting (E/CAR/WG/31), St. John's, Antigua and Barbuda, 5 to 8 October 2009. • Twenty First Meeting of Directors of Civil Aviation of the Eastern Caribbean (21st E/CAR DCA), Tortola, British Virgin Islands 11 to 14 February 2008. • Thirtieth E/CAR Working Group Meeting (E/CAR/WG/30), Saint Lucia, 7th – 11th August 2006 • Maintenance communications and quarterly report made by TTCAA to E/CAR AFS Network members (November 2009)	
STRATEGIC OBJECTIVES	<i>THIS WORKING PAPER IS RELATED TO STRATEGIC OBJECTIVES A AND D.</i>

1. Introduction

1.1 The backbone of the Eastern Caribbean Aeronautical Fixed Services (E/CAR AFS) network, a 256Kbps circuit, forms a triangle encompassing the islands of Trinidad, Barbados and Antigua which function as hubs. This configuration provides seamless alternate routing of circuits in the event of a major backbone link failure between any two hubs. The hubs in Barbados and Antigua provide connectivity to the other islands via 64 Kbps and 128Kbps branch circuits respectively. Redundant connectivity to San Juan is provided by a 128 Kbps circuit from Trinidad and another from Antigua. AFTN data passes through San Juan to the Federal Aviation Administration (FAA)'s network for onward transport to Atlanta.

1.2 The network is configured to handle direct and switched voice circuits and Aeronautical Fixed Telecommunications Network (AFTN) data. Voice circuits are digitally compressed 8 Kbps using Low Delay-Code Excited Linear Prediction (LD-CELP) protocol. AFTN traffic is carried at 9600 bps using X.25 interface protocol to Atlanta and 2400 bits per second (bps), X.25 protocol between the AFTN switch and Eastern Caribbean island end user workstations. The switched voice network provides connectivity among users via bandwidth utilization on demand.

2. Discussion

2.1 Trinidad and Tobago through the Trinidad and Tobago Civil Aviation Authority (TTCAA) signed a *Labour and Equipment Maintenance Agreement* for the existing E/CAR Aeronautical Fixed Services (AFS) and VHF Aeronautical Mobile Services (AMS) networks, with Telecommunications Services of Trinidad and Tobago (TSTT) for maintenance of the AMS, AFTN interface and voice equipment on the E/CAR islands. The Agreement commenced on 1st January 2006 for an initial period of twenty-four (24) months and to be thereafter automatically extended by successive twelve (12) month periods unless terminated.

2.2 TSTT signed an agreement with NET Federal Inc., the manufacturer of the PROMINA multiplexer equipment on 1st July 2009 for the maintenance of the AFS network. TSTT/NET recommended an upgrade of the PROMINA equipment in order to bring the network up to current versions of software and hardware modules. Pre-requisite to the upgrade TSTT/NET conducted Site visits to all of the points of the ECAR Network during the period November 2 - 13, 2009. The objectives of these visits were to carry out an assessment of all PROMINA Node equipment which included checking the physical condition of the equipment, confirmation of software version installed, verification of remote access facilities to access all nodes, provide an overview of the equipment for local civil aviation technical personnel and amendment as necessary to the existing network drawings for each point. The discussions for and the implementation of the upgrade which started in August 2009 and was expected to be completed by mid November 2009 is now rescheduled for within the first quarter of 2010.

2.3 In response to Draft Conclusion 31/5 - **URGENT ACTIONS TO IMPROVE E/CAR AFS NETWORK OPERATIONAL PERFORMANCE** of the Thirty-First Eastern Caribbean Working Group Meeting (E/CAR/WG/31) held in St. John, Antigua and Barbuda, from 5 to 8 October 2009, Trinidad and Tobago after soliciting verification of the information circulated an E/CAR Contact List (**Appendix A1**) to the States, Territories and International Organizations. The persons on the list will be updated at least weekly on the status of fault reports and resolution of the E/CAR network.

2.4 In response to Draft Conclusion 31/6 (E/CAR/WG/31) - **E/CAR AFS NETWORK IMMEDIATE RECOVERY ACTIONS**, TSTT proposed and implemented direct connections off the ports in the PROMINA MUX, bypassing the X.25 PADs to restore service to the Antigua node. To restore data service to Barbados, the RAD APD-8 PADs were replaced by TSTT engineers. The attached **Appendix A2** lists the timeframes for service restoration. The proposed upgrade of the PROMINA equipment throughout the network is anticipated to be completed within the first quarter of 2010. A list of recommended spares to be kept at each E/CAR network point is being compiled by TSTT in conjunction with NET based on the information obtained during the site visits and the planned upgrade. Discussions are to be held with States to work out the logistics of the proposal that Trinidad and Tobago study the possibility for first intervention actions to be performed by local maintenance teams no later than 31 January 2010.

2.5 In response to Draft Conclusion 31/7 (E/CAR/WG/31) - **REPLACEMENT OF THE E/CAR AFS NETWORK**, Trinidad and Tobago proposes the following solutions:

2.5.1 Near-Term Solution:

2.5.1.1 In October 2009 TSTT presented to the TTCAA a proposal for a new E/CAR terrestrial network. This new network based on CISCO routers would be capable of supporting ATN and AMHS in an IP environment. TSTT estimated that the network could be implemented within five months from contract award.

- The new network design will take advantage of modern IP network elements and protocols thereby providing one platform for both voice and data services. This network will be fully redundant with a simplified design that provides redundancy and scalability via the use of Metro Ethernet Links and CISCO routers.
- The new network elements will be easier to obtain and thus repair and replacement lead time are consistent with current industry standards.
- Simple network design with reduced number of elements and linkages reduces the number of points of failure in the new network.
- The new network will have the capacity to link to TSTT's IP network management diagnostics, providing manageability and 24 hour 365/7 day per week via TSTT's CSOC. Trouble ticket portal will be made available to provide full visibility to the customer of their network and trouble ticket management process.
- **Appendices A3 and A4** depict the proposed solution for the new network

2.5.2 Long-Term Solution:

2.5.2.1 At the Thirtieth E/CAR Working Group Meeting (E/CAR/WG/30), Saint Lucia, 7th – 11th August 2006 Trinidad and Tobago stated that it was researching possible solutions for the E/CAR network:

- Replacement of the present TSTT provided network with a modern network.
- Switch to the existing Frame Relay Network from Cable and Wireless.
- Design a Very Small Aperture Terminal (VSAT) system for the Region.

2.5.2.2 At the Twenty first Meeting of Directors of Civil Aviation of the Eastern Caribbean (21st E/CAR DCA), Tortola, British Virgin Islands 11 to 14 February 2008, the CNS Committee of the E/CAR/WG reported that after regional discussion it was agreed that the best solution would be the replacement of the existing terrestrial based E/CAR network with a VSAT network. In this regard Trinidad & Tobago utilized the information from a contracted survey design report and responses from States on a user requirement questionnaire and drafted a Request for Proposal (RFP) to provide a VSAT solution for the Eastern Caribbean. The first draft was sent to States for comments. Comments were received from the United States and the French Antilles.

2.5.2.3 Initially the RFP invited an outright purchase, own and maintain philosophy with Trinidad and Tobago as the System Administrator and owner of the network. This philosophy was revised for economical, logistical and managerial reasons and the RFP was being redrafted for a service provider type of network, that is, the successful bidder will own and maintain the hardware and software and provide network and bandwidth management facilities which will be maintained and verified by contractual arrangements.

2.5.2.4 At the E/CAR/WG/31 the CNS Committee reported that based on information received regarding bandwidth, satellite airtime and maintenance costs, the requirements for the replacement E/CAR network were being revised to have a partial VSAT network with some terrestrial and microwave links depending on the traffic movements derived from statistics and collaboration with States. This was one of the options initially proposed at the E/CAR/WG/30 by the CNS Committee. This revised document which was expected to be completed by the end of the first quarter of 2010 would then be distributed to States for further comments.

2.5.2.5 The E/CAR/WG/31 Meeting through Draft Conclusion 31/7 concluded that the new AFS Network should be a VSAT solution which should be operational by mid 2011 and that an E/CAR Network Technical Group (E/CAR/NTG) should be formed to study, analyze and follow-up on the planning, documentation and implementation of the replacement of this VSAT Network. Further to this recommendation Trinidad and Tobago issued letters to States (French Antilles, United States of America, Barbados, United Kingdom [Anguilla and Montserrat] and the Eastern Caribbean States [through the ECCAA]) inviting participation in the E/CAR/NTG in November 2009.

2.5.2.6 In addition to confirming, justifying and developing the technical user requirements per State, one of the tasks of the E/CAR/NTG will be to analyze the advantages and disadvantages of a full VSAT network, a partial VSAT network, purchase and own, and service provider leased network. In order to meet the deadline date for operability the RFP would need to be tendered no later than May 30th 2010. Work on the RFP is scheduled for the period January 2nd to March 31st 2010. It is anticipated that the work of the E/CAR/NTG will be progressed via email and teleconferences. If any face to face meetings are required, hosts for the meetings will be sought from the member States of the E/CAR/NTG and the costs incurred for members to attend meetings are expected to be borne by each member States.

2.6 Fault Reporting Procedure

2.6.1 The fault reporting procedure that was presented and accepted at the 29th ECWG Meeting continues to be implemented, i.e., States submit the fault report form to Trinidad and Tobago, the TTCAA then forwards the report to TSTT's (Telecommunication Services of Trinidad and Tobago – PSTN service provider) Customer Service Operations Center (CSOC) in Port of Spain, Trinidad. The CSOC contacts the TSTT E/CAR Network Team who would action the resolution. NET has the ability to remotely dial-in and diagnose/repair some faults. If a module change is required TSTT will either contact the sub-contractor on site (TSTT for Trinidad and Tobago, LIME for Eastern Caribbean States and OUTREAMER for the French Antilles) or dispatch one of their engineers from Trinidad depending on the fault. Presently the spares for the PROMINA multiplexers are kept in Trinidad. Due to lengthy delays in customs clearance of spares, this arrangement is being revisited to have some complement of spares at each site.

2.6.2 In keeping with the Summary of Discussions, Appendix F – Report of the CNS Ad-hoc Meeting – paragraph 3.2.6 of the 29th Eastern Caribbean Working Group Meeting held in Saint Vincent and the Grenadines, 9-13 May 2005, quarterly statistics of fault reports are compiled and distributed by the TTCAA. The reports detail the faults and resolution and also provide statistics of the failures.

3. Suggested action

3.1 The Meeting is invited to:

- a) take note of the information contained in this working paper;
- b) review the future planned activities for the recovery and replacement of the E/CAR AFS Network as described in section 2 and E/CAR NTG participation, and
- c) agree to any other actions as deemed appropriate.

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Appendix A1

STATE	NAME	ORGANIZATION	POSITION	EMAIL ADDRESS	OFFICE TELEPHONE	FAX NO.
ANGUILLA	Lindon Hodge	Civil Aviation	Deputy Airport Manager-Designate	hodgelindon@yahoo.com		
ANGUILLA	Helen Tonge	Civil Aviation	Supvr. ATC/MET/AIS	htungo@yahoo.co.uk	264-497-2526/497 3121	264-497-5928/8345
ANTIGUA AND BARBUDA	Ian Michael	V.C. Bird International Airport	Acting Chief of Air Traffic Services (CATS)	catsvcbird@yahoo.com	1-268-562-0302	1-268-562-3040
ANTIGUA AND BARBUDA	Shenneth Phillips	V.C. Bird International Airport	Acting Air Traffic Services Operations Officer (ATSOO)	shennethp@yahoo.com	1-268-462-4675	1-268-562-3040
ANTIGUA AND BARBUDA	Lorraine Davis	V.C. Bird International Airport	Acting Air Traffic Services Examining Office (ATSEO)	sivad@candw.ag	1-268-562-5231	1-268-562-3040
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BARBADOS	Cedric H. Murrell	Air Traffic Services, Civil Aviation Department	Chief Air Traffic Control Officer	catcobgi@sunbeach.net	+ 246 428 7377	
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DOMINICA	Benoit Bardouille	Dominica Air and Sea Ports Authority	Chief Executive Officer	daspa@cwdom.dm gmsecretary.daspa@cwdom.dm	+ 767 448 4009 / 235 4009	
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FRENCH WEST INDIES MARTINIQUE	Thierry Lezin	DGAC / SNA-Antilles Guyane	Chief of Maintenance	thierry.lezin@aviation-civile.gouv.fr	+596-596-42-25-01	+596 596 42 26 92
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GRENADA	Willard DeAllie	Grenada Airports Authority	Air Traffic Controller	willrose_rat@hotmail.com	+ 1 473 444 4114	
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TRINIDAD AND TOBAGO	Dayanand Rajnath	Trinidad and Tobago Civil Aviation	ATV IV – Unit Chief Piarco ACC	atciv@caa.gov.tt	+ 868 669 4806	

-A3-

STATE	NAME	ORGANIZATION	POSITION	EMAIL ADDRESS	OFFICE TELEPHONE	FAX NO.
		Authority (TTCAA)				
TRINIDAD AND TOBAGO	Veronica Ramdath	Trinidad and Tobago Civil Aviation Authority (TTCAA)	Manager Telecommunications & Engineering	vramdath@caa.gov.tt	+ 868 669 4706	868-669-5239
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TRINIDAD AND TOBAGO	Randy Gomez	Trinidad and Tobago Civil Aviation Authority (TTCAA)	Chief Technical Officer/AIS	rgomez@caa.gov.tt	+ 868 669 4128	1 868 669 1716
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UNITED KINGDOM	Margaret Wilson	Air Safety Support International (ASSI)	Manager Caribbean, Director of Civil Aviation for Anguilla, the British Virgin Islands and Montserrat	margaret.wilson@caribairsafety.aero	+ 284 495 7140 / 541 9410	1-284-495-7138
BRITISH VIRGIN ISLANDS	Coy Levons	BVI Airport Authority	Director of Operations	clevons@bviala.com		
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STATE	NAME	ORGANIZATION	POSITION	EMAIL ADDRESS	OFFICE TELEPHONE	FAX NO.
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ECCAA	Rosemond James	Eastern Caribbean Civil Aviation Authority	DGCA	oecs.dca@candw.ag (main office) and rjames@eccaa.aero (direct)		
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-A5-

STATE	NAME	ORGANIZATION	POSITION	EMAIL ADDRESS	OFFICE TELEPHONE	FAX NO.
TSTT	Dexter Atkins	Telecommunication Services of Trinidad and Tobago (TSTT)	Engineer	datkins@tstt.co.tt		
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Appendix A2

State	Type of fault Voice/ Data/ VHF	Fault	Date/Time Service Off (dd/mm/yyyy - UTC)	Resolution Activities	Date/Time Service Restored (dd/mm/yyyy - UTC)
Montserrat	Voice	No voice communication on AFS [Montserrat confirmed that the problem existed a long time but was never reported to the TTCAA]	05/08/2009-1630	TSTT: PABX in alarm. To have been checked on site visit carded for Nov 12 but due to cancellation of flights resulting from volcanic activity the visit has to be rescheduled.	
Martinique	Voice	13/07/2009 –Unserviceable 19/10/2009 - (reported by SNA/AG DESCHAMPS) - ECAR network is fully unserviceable since yesterday in Martinique. Network is unstable; sometimes OK, sometimes not. For many E/CAR correspondents, we hear them, but they don't hear us. AFTN is OK in Martinique. 20/10/2009 - SNA/AG (DESCHAMPS): Service is flapping. Martinique circuits both voice and AFTN erratic. TSTT (MARSHALL) notified on 21/10/2009.	13/07/2009 - 1215	SNA/AG to FT 20/10/2009: I take contact with you because we had identified you as contact point at the time when problems with leased line between Martinique and Trinidad were solved. We get a real problem: due to unserviceable equipment in Guadeloupe and problems on the line between Barbados and Martinique, our 2 airports (Martinique and Guadeloupe) are missing flight plans, with result if the situation were to last flow controls and other limitations. Trinidad (TSTT) in charge of the network seems to have identified the problem on the level of the link between Barbados and Martinique, and would like to carry out tests at the level of your MIC. The problem it is that the contacts which they have at FT do not understand them in English. The line is referenced BGI / MNP01. Could you carry out of coordination with Vanessa Lee from TSTT (her coordinates hereafter) the tests and loops allowing to solve the problem as fast as possible? The DGAC is not managing this link we try to connect the good people. Thank you for your assistance, and if necessary, please delegate to the right person. Thank you for writing in English. TSTT 20/10/2009: Correction - Circuit designation is: BGI-LMNP01 FT 21/10/2009: A Ticket 0910198907 is opened for this issue on the product 819A116L. The international support is FORT:FRA DCLIEU/CEX - WILDEY CDM/CDM 30N/1. On our supervision, we do not see any alarm: in FORT DE FRANCE , the traffic from MARTINIQUE to the international trunk is going through a cross connect on which we do not have the vision. Could TSTT provide me the contact of the engineer in BRIDGETOWN in order to perform some tests? We tested the local loop in MARTINIQUE and Some Error Seconds errors occurred on a remote loop on the customer's modem. We requested an engineer dispatching. However, the Error seen won't involve the line working. Could TSTT confirm alarm on the international 2M trunk: the kind of alarm?	03/09/2009 (Service restored but intermittent) 21/10/2009 (Service restored but intermittent)

-A7-

State	Type of fault Voice/ Data/ VHF	Fault	Date/Time Service Off (dd/mm/yyyy - UTC)	Resolution Activities	Date/Time Service Restored (dd/mm/yyyy - UTC)
				TSTT 21/10/2009: Contact: BAR ITMC 246 292 6056/7 BAR RNMC 246 292 7662. The CW ticket no 54779 FT 21/10/2009: I am unable to reach these 3 numbers below. The numbers do not exist. At that time, we are checking the local loop in MARTINIQUE. Could you tell us what kind of alarm are you seeing on the international trunk? FT 21/10/2009: Errors are seen on a section in MARTINIQUE. Some equipment and cards were changed: however the errors are still present. Note that this issue is on the national network and not on the international. Could TSTT confirm any alarm on the international trunk? Investigations are still in progress. 21/10/2009 -Complete and service restored. TSTT 26/10/2009: Checks with Barbados have indicated that the source of the problem is between Martinique Airport and Martinique ITMC. SNA/AG 29/10/2009: The problem with Martinique/Barbados is complex says FT and requires additional tests TSTT: 02/11/2009 – Intermittent failures are due to errors on link between Martinique Airport and Martinique ITMC. France Telecom is yet to resolve. It is required that problem be pushed with France telecom since errors are local to Martinique.	
Guadeloupe	Voice	Unserviceable - Initially due fire in Control tower	16/06/2008-	23/10/2009 -- PX 3 card (to restore voice) and cable (to restore data) sent by TSTT during the week of Oct 19 – 23 was received and cleared customs. 2th November 2009 - Email from Vanessa Lee: The following were shipped 30/10/2009 to OUTREMER TELECOM Attention de J-M BEAUGENDRE 6-8 FORUM DE JARRY 97122 BAIE-MAHAULT To restore AFTN service to Guadeloupe: 2 US Robotics Modems 2 Tainet Modems Diagrams showing installation method TSTT 02/11/2009- NET Engineers working at Node 1 in Piarco attempting to restore voice service to Guadeloupe by working on configuration from Piarco.	

State	Type of fault Voice/ Data/ VHF	Fault	Date/Time Service Off (dd/mm/yyyy - UTC)	Resolution Activities	Date/Time Service Restored (dd/mm/yyyy - UTC)
				TSTT 10/11/2009 (VL) - The PX-3 card that was sent was different relative to the existing node and as such this may be the challenge in the voice restoration via remote access. The voice issue with the PX-3 card will be addressed during visit on 12/11/2009.	
Trinidad	Voice	Piarco/San Juan voice circuit intermittent from 05-09/11/2009.	05/11/2009-2100	NET intervention	09/11/2009-1430
Trinidad	Voice	Piarco/New York – A9 unserviceable. Piarco calls NY and can hear phone ringing but NY not receiving ring.	05/11/2009-2100	09/11/2009 - NET confirms that ring signal reaching San Juan. Referred to FAA. 10/11/2009 Email from TSTT VL to FAA John Burke - Thanks for returning my call just now. As I indicated the subject service has been out of service since last Friday. Piarco contacts NY via ext 1848 on the link. The sequence of events has been as follows since last Friday: - Report of voice circuit failures to San Juan Puerto Rico and NY; unable to make and receive calls - Second report indicated dial tone on both ends but no ring back for NY - NY indicated no dial tone on their end - NET reset cards on PROMINA Bandwidth Managers; still unable to make and receive calls to San Juan and NY; NY still had no dial tone Monday Nov 9, 2009 - San Juan and Piarco confirmed that they could make and receive calls on exts 1845, 1846 and 1849 at 0700hrs - NY indicated no dial tone; still unable to make and receive calls - Contacted FAA San Juan spoke to Dave Carrerra at 1525 Hrs who tried his hardest to find the link designation and path on his equipment. - Attempting to find the PABX location, card and port and the link designation for the connection between San Juan and NY 12/11/2009 1:48 pm FAA Tim Tomlinson [timothy.ctr.tomlinson@faa.gov 202-863-7315] - I just spoke with ZNY SOC... we got Piarco Voice circuit to ZNY operational! I'm in the process of putting together a call/meeting with Roger, Tuan Tran and Rich Lackey with the intent to upgrade the PX3 card's firmware (ISDN cards) from version 1.x to 3.x. From talking to Roger, Tuan and Rich, this should address a lot of the reset/stability	12/11/2009

-A9-

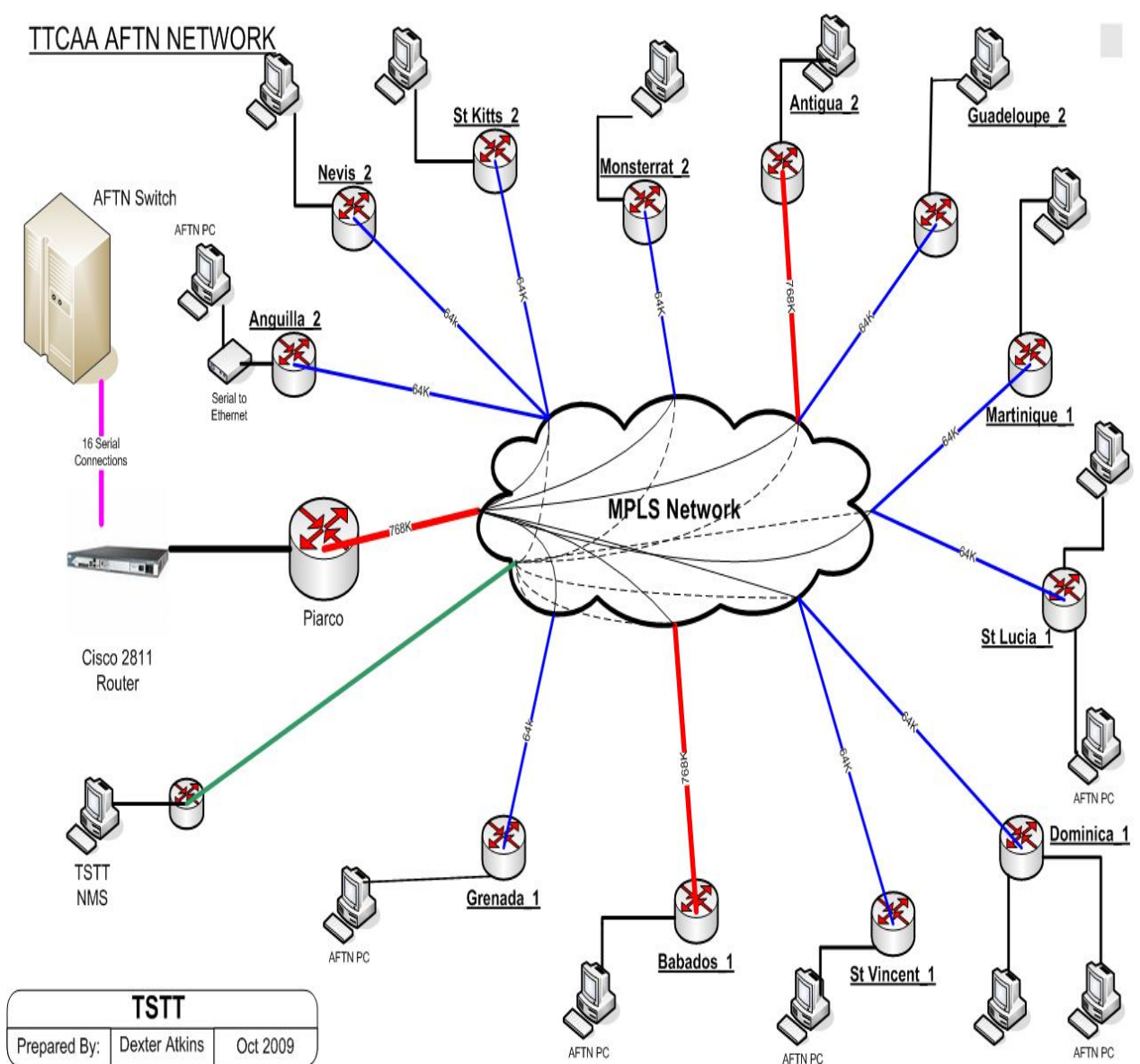
State	Type of fault Voice/ Data/ VHF	Fault	Date/Time Service Off (dd/mm/yyyy - UTC)	Resolution Activities	Date/Time Service Restored (dd/mm/yyyy - UTC)
				issues with the FXS/FXO PROMINA circuit. 12/11/2009 12:55 pm TSTT VL - Sorry to rain on the parade but Piarco ATC says that they are unable to get New York ATC via ext 1848. Not sure if it is possible the other way around. 12/11/2009 2:28 pm FAA John Burke - The ZNY SOC went to the area and had ATC do a call test in both directions. Its 5X5 and rings. 12/11/2009 2:45 pm TSTT VL - Please be advised that the subject has been restored. A conference call is to be set up next week with relevant parties (I would advise when confirmed) for a solution to stabilize its operation.	
Antigua	Data	All States off the Antigua node are unserviceable (Anguilla, Nevis, St. Kitts, Antigua, Guadeloupe, Montserrat). [Note: This does not affect voice]	12/08/2009-1225	Option 1:- Connect directly the ports in PROMINA MUX, bypassing the X.25 PADS 20/10/2009 – i. Piarco started yesterday and TSTT Techs (DA) will continue working on it today. ii. Antigua and Anguilla - TSTT Tech Ferdinand Job dispatched today to work on all activities physically at these sites iii. St. Kitts, Nevis, Montserrat- TSTT Tech Kevin Davis dispatched today to work on all activities physically at these sites. iv. Guadeloupe - PX 3 card (for voice) and cable (for data) shipped to the attention of Guadeloupe Civil Aviation (SNA/AG) for testing and implementation in accordance with schedule. Both Kevin and Ferdinand will be returning home on Friday evening with all site work, testing and implementation completed. 21/10/2009 – i. Piarco- Completed ii. Antigua and Anguilla - Antigua Complete. Tech to complete works on Anguilla iii. St. Kitts, Nevis, Montserrat- St Kitts Complete. Tech to complete works on Nevis and Montserrat. iv. Guadeloupe - PX 3 card and cables shipped to the attention to Guadeloupe Civil Aviation (SNA/AG) for testing and implementation in accordance with schedule.	23/10/2009 – St Kitts, Nevis, Antigua, Anguilla and Montserrat AFTN service restored as at Oct 23, 2009. 28/10/2009 – (Direct) Guadeloupe AFTN service restored as of 28/10/2009-1653.

State	Type of fault Voice/ Data/ VHF	Fault	Date/Time Service Off (dd/mm/yyyy - UTC)	Resolution Activities	Date/Time Service Restored (dd/mm/yyyy - UTC)
				23/10/2009 – St Kitts, Nevis, Antigua, Anguilla and Montserrat AFTN service restored as at Oct 23, 2009. Outstanding: Guadeloupe AFTN 23/10/2009 – i. Piarco- Completed ii. Antigua and Anguilla - Antigua complete however Antigua 256k has frame slips. Ticket opened by CSOC and CSOC checking. Anguilla complete. iii. St. Kitts, Nevis, Montserrat- St Kitts Complete. Nevis complete. Montserrat complete but there is an occasional garble being caused by errors on main link. TSTT Tech working on this additional problem. iv. Guadeloupe - PX 3 card and cable received and cleared customs 28/10/2009 TSTT (VL) - We walked through the process of the cable installation and equipment configuration with our contractor but were initially unsuccessful mainly due to the language barrier. Thereafter we sent written instructions but as a back-up we sent the two sets of modems and additional instructions should they not be successful. The civil aviation technicians were however successful at reconfiguring allowing for service restoration on 28/10/2009. 05/11/2009 SNA/AG (JJ) - AFTN is OK in Guadeloupe since one week. In fact, when a failure is detected, we manually switch to Martinique node. And we can stay switched quite a long as we are not aware the AFTN is back again. 05/11/2009 TSTT (VL) - I spoke this afternoon to Mr. Ary Convery of the French Civil Aviation who confirmed that they have service on the AFTN via the solution we sent with the direct cabling. He confirmed that messages could be sent and received to Piarco. They have not received the modems that were sent last week which were sent as a fail-safe if they could not get the proposed connection back to Antigua working. 10/11/2009 TSTT (VL) - The Civil Aviation in Guadeloupe confirmed that AFTN is serviceable. I spoke to Outremer on 06/11/2009 and they had not yet received the US Robotics and Tainet modems. Nonetheless, the service is operational without it. When the	

-A11-

State	Type of fault Voice/ Data/ VHF	Fault	Date/Time Service Off (dd/mm/yyyy - UTC)	Resolution Activities	Date/Time Service Restored (dd/mm/yyyy - UTC)
				assessment is made on the site visit of Nov 12, 2009 the NET engineer and my technician will determine whether the modems indeed have to be installed for the service.	
St. Vincent	Voice	Unserviceable	21/05/2009- 1530	04/08/2009 – e from VL - PABX cleaned and powered up - SSC card daughterboard replaced Challenges: - some delays occurred in clearing spares and equipment through customs - daughterboard software of later release than existing system software Strategies: - technicians are currently downloading from vendor website old software release compatible with system to re-install on system - when completed PABX could then be re-configured	05/08/2009 - 1330
Barbados	Data	intermittent garble, dropping characters	08/01/2009 - 2339	RAD APD-8 PAD replaced TSTT Engineers Kurt Howard and Dexter Atkins travelled to Barbados with the replacement RAD APD-8 PADs over the period 26-28/08/09. The AFTN service was restored on 28/08/2009. Garble was reported on 30/08/2009 and was resolved on 02/09/2009.	02/09/2009

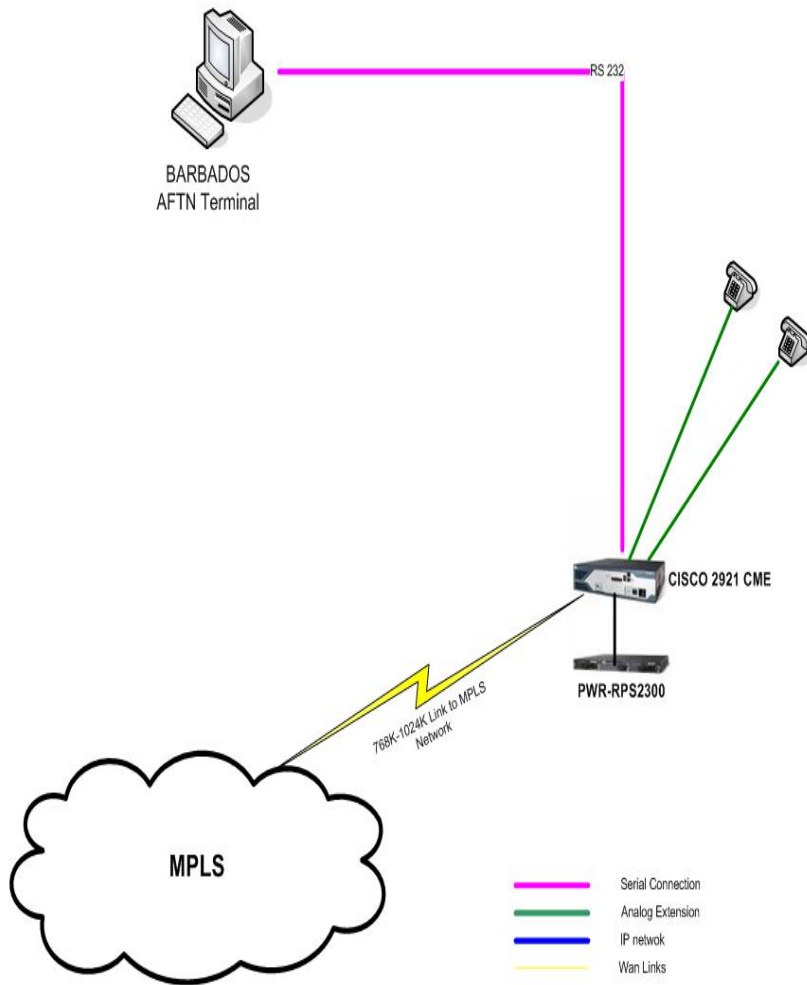
Appendix A3



-A13-

Appendix A4

TTCAA BABADOS



TSTT		
Prepared By:	Dexter Atkins	Oct 2009

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