International Civil Aviation Organization
North American, Central American and Caribbean Office

INFORMATION PAPER

AO/TF/5/ATFM/TF/7/CIIFRA/9 — IP/03
14/02/25

Fifth Meeting of the North American, Central American and Caribbean Working Group (NACC/WG) Airspace Optimization Task Force, Seventh Meeting of the Air Traffic Flow Management Implementation Task Force and Ninth Meeting of the CANSO IATA ICAO Free Route Airspace Team (AO/TF/5/ATFM/TF/7/CIIFRA/9)

Orlando, United States, 03 to 07 March 2025

Agenda Item 3: **ICAO NACC/WG Air Traffic Flow Management Implementation Task Force (ATFM/TF) Updates**

UPDATE ON TRINIDAD AND TOBAGO'S AIR TRAFFIC FLOW MANAGEMENT/COLLABORATIVE DECISION MAKING (ATFM/CDM) PROCESS

(Presented by Trinidad and Tobago)

EXECUTIVE SUMMARY	
This information paper provides an update on Trinidad and Tobago's ATFM/CDM progress and summarizes the important role that ATFM and CDM plays in the management of: • The increasing demand within the Piarco FIR, • Severe weather phenomena within the Piarco FIR, • Contingencies and disruptive or potentially disruptive events within the Piarco FIR. The paper also provides a brief update on the ATFM tools used by Trinidad and Tobago in the discharge of its ATFM/CDM duties.	
Strategic Objectives:	• Safety • Air Navigation Capacity and Efficiency • Security & Facilitation • Economic Development of Air Transport • Environmental Protection
References:	• Ninth North American, Central American and Caribbean Working Group Meeting (NACC/WG/9), *IP/06 Trinidad and Tobago update on ATFM initiative* • CADENA Regional Implementation Group Monthly Webex January 29, 2025 Minutes.

1. Introduction

1.1 This Information Paper provides an update on Trinidad and Tobago's Air Traffic Flow Management and Collaborative Decision Making (ATFM/CDM) process, as stated in the executive summary.

2 Discussion

2.1 ***Steady increase in Traffic Movements within the Piarco FIR.***

2.1.1 Trinidad and Tobago continues to recognise the importance of a collaborative Air Traffic Flow Management (ATFM) Process as an integral enabler to the safe and efficient flow of traffic through the Piarco Flight Information Region (FIR).

2.1.2 ATFM plays a critical role in the Air Traffic Services (ATS) operations, as Trinidad and Tobago continues to experience significant increases in air traffic movements within Piarco FIR, since the recovery from the pandemic period.

2.1.3 In the year 2024, Trinidad and Tobago provided air navigation services, within the Piarco FIR, to approximately one hundred twelve thousand, (112,000) flights. This amounted to an overall increase of thirteen percent (13%) from the year 2023. The year 2023 was still considered a recovery year following the pandemic period. The analysis also showed a four percent (4%) increase from the year 2019 (pre-pandemic period). Please see **Figure 1**. The year 2019 was previously the highest recorded traffic within the Piarco FIR.

2.1.4 Although the yearly air traffic movements for the 2024 increased by an average of four percent (4%) from the yearly air traffic movements of 2019, the traffic movements during the months of November and December 2024 (high volume period); increased by an average of fifteen and a half percent **(15.5%)** from the similar period during 2019. Please see **Figure 1**.

Month	2019	2023	2024	% increase from 2019 to 2024
JAN	10304	8928	10544	2
FEB	8955	8116	9329	4
MAR	10383	8715	9968	-4
APR	9027	8001	9067	0
MAY	8339	7529	8668	4
JUN	8373	7146	8520	2
JUL	9166	8255	9159	0
AUG	9123	8515	9302	2
SEP	7726	7376	7930	3
OCT	8223	7856	8700	6
NOV	8440	8550	9820	16
DEC	9830	10363	11280	15
Total	107889	99350	112287	4% increase from 2019

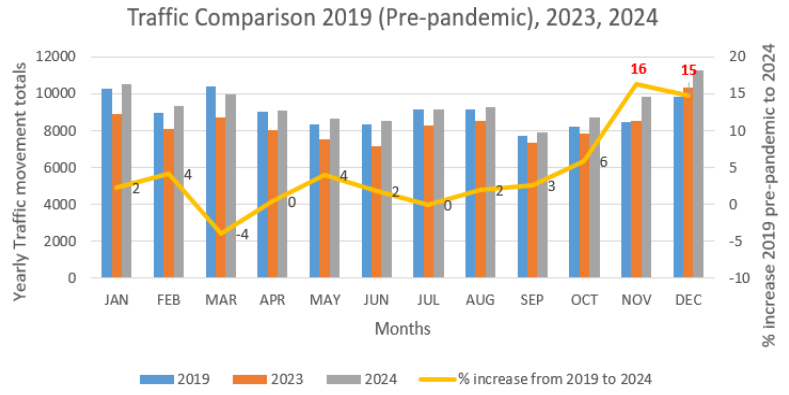

Figure 1 Traffic Comparison 2019 (Pre-pandemic), 2023, 2024
Source: *Piarco FIR Flight Movements Data*

2.1.5 Additionally, it is noted that the traffic movements for the month of January 2025 is thirteen percent (13%) higher than January of the year 2019 and nine percent higher (9%) than January of the year 2023. Trinidad and Tobago notes this significant increase in traffic demand, and continually seeks to ensure that this demand is adequately balanced with operational capacity.

2.1.6 ATFM and Collaborative Decision Making (CDM), along with other airspace optimization processes, foster safety, promotes efficiency, and plays a vital role in managing demand and capacity balancing.

2.2 ***Severe Weather Events.***

2.2.1 The ATFM and CDM processes are also vital to the management of air traffic during periods of disruptions to operations caused by severe weather.

2.2.2 The Piarco FIR is located within an area that is impacted by the passage of tropical cyclones, on a yearly basis, typically between the months of June to November.

2.2.3 Based on its location, the Piarco FIR is usually the first airspace, within the Caribbean and North American (NAMCAR) Region, to be affected by tropical cyclone activity that forms off the West Coast of Africa, Cape Verdean islands; and/or near the tropics in the Caribbean.

2.2.4 In the year 2024, the Piarco FIR was affected by several tropical cyclones. Some of these cyclones may not have made landfall, but would have caused some level of disruption to the normal flow of air traffic through flight deviations and re-routes to avoid them, e.g. Hurricane Leslie and Tropical Storm Kirk, which were confined mostly to the oceanic sector of the Piarco FIR.

2.2.5 Hurricane Beryl, the first major tropical cyclone to affect the Piarco FIR during the 2024 season, started within the Oceanic Sector, then caused major disruption as its trajectory passed close to several of the States within the Eastern Caribbean, resulting in the temporary closure of many airports, and the general disruption to the flow of air traffic.

2.2.6 The image in **Figure 2** below depicts the trajectories of some these cyclones. The Piarco FIR was inserted into the image for reference.

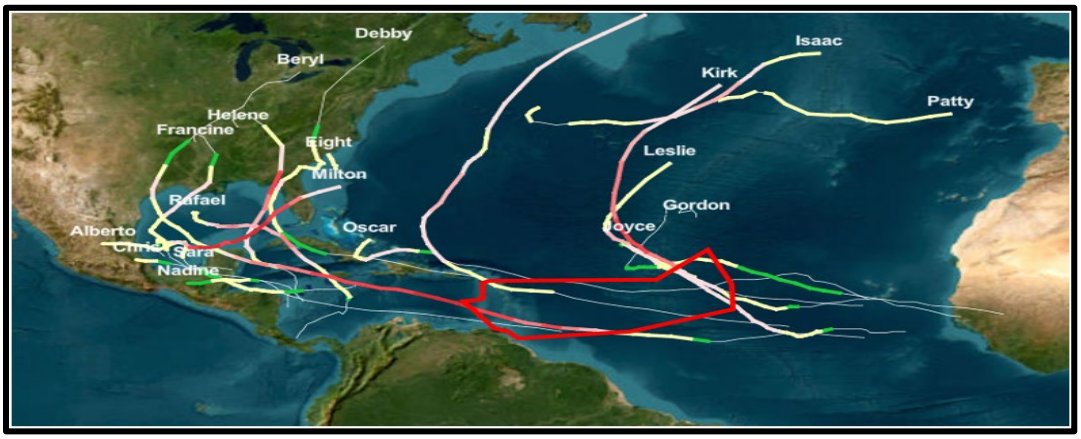

Figure 2 Tropical Cyclone Track Archive for North Atlantic in 2024 (Piarco FIR not drawn to scale)

Source: https://tropicalatlantic.com/models/models.cgi?basin=al&archive=2024

2.2.7 Through Trinidad and Tobago's active participation in the various platforms within the CANSO ATFM Data Exchange Network for the Americas (CADENA), Piarco was able to relay, vital information as they related to the impact of the Hurricane Beryl, such as:

- Affected Routes,
- Procedures for planning alternate routes,
- Airport closing and opening time,
- Airport Status and ATC status at impacted aerodromes at the associated Terminal Control Areas (TMAs), and
- Other Constraints.

2.2.8 Trinidad and Tobago also shared pertinent operational information with the States and Territories with TMAs, located within the Piarco FIR, via an established Eastern Contingency WhatsApp Group chat.

2.3 ***Contingencies Events***

2.3.1 For major events, that may lead to major disruption in Air Traffic Services, the Caribbean Contingency Emergency Response Team (CAR CERT) would convene ad-hoc planning meetings to collaboratively mitigate and manage the constraints.

2.3.2 The CAR CERT is led by the NACC ICAO Regional Officer for Air Traffic Management (ATM), Search and Rescue (SAR), and comprises of the Eastern Caribbean States and Territories, and, other States, territories and Organizations.

2.3.3 Trinidad and Tobago also utilizes the CADENA processes to share information and plan for major disruptive events. Such processes include

- Ad-Hoc Planning Conferences,
- Posting of Urgent Advisories on the CADENA OIS,
- Posting of preliminary information on the CADENA Operational WhatsApp chat,
- Emails.

2.3.4 Trinidad and Tobago is in the processes of formalizing its contingency procedures for the FIR to manage major events that cause partial disruption of the Air Traffic Service (ATS), and to manage events that may lead to the planned or unplanned transition to an ATS Zero situation.

2.3.5 Trinidad and Tobago has completed a Draft Contingency Procedures Guide for the Piarco FIR, titled, ***"Air Traffic Management Contingency Procedures Guide, Piarco Flight Information Region (ATM/CPG/PFIR) Draft version 1.0,"*** that deals with those events described in paragraph 2.3.4. The document can be view in the **Appendix** to this IP.

2.3.6 The document is being submitted to the meeting for stakeholders' comments and feedback. Based on the feedback, the document will be finalized and submitted to the Tenth North American, Central American and Caribbean Working Group Meeting (NACC/WG/10) for final approval, and subsequent publication on the NACC website, the

Trinidad and Tobago's Civil Aviation Authority's (TTCAA's) website; and distribution to industry partners.

2.4 ***CDM process during the Blue Origin Blue Ring Pathfinder Rocket Launch Mission***

2.4.1 The Blue Origin Blue Ring Pathfinder successfully launched on 16 January 2025, after several delays and one failed attempt.

2.4.2 The Aircraft Hazard Areas (AHA) associated with the launch were quite extensive, extending from the Miami FIR, through the New York Oceanic Airspace, and into the eastern portion of the Piarco FIR, see **Figure 3**. As a result, prior to the launch, CADENA, in collaboration with the Federal Aviation Administration (FAA) Space Operations, facilitated planning web conferences, which were attended by several States' ANSPs, Airlines, International Air Transport Association (IATA), and other Organizations.

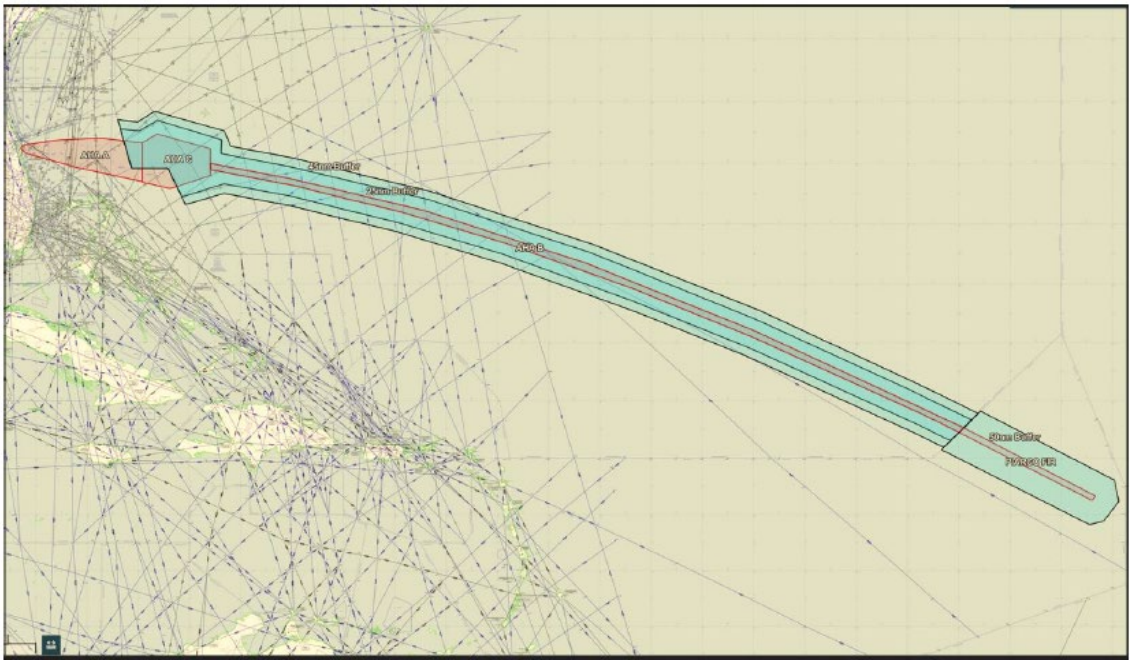

Figure 3 Aircraft Hazard Areas
Source: Federal Aviation Administration

2.4.3 Trinidad and Tobago participated on these web conferences.

2.4.4 The purpose of these meetings was to bring all stakeholders together to develop plans to mitigate any potential constraints that may have affected/impacted aircraft operations, during the activation of the Aircraft Hazard Areas (AHAs) associated with the launch.

2.4.5 In addition to these conferences, CADENA and a representative of the FAA Space operation continually kept Trinidad and Tobago, and other stakeholders, informed of pertinent information, such as:

- Changes in primary and back-up launch dates,
- Changes in the dimensions of the associated AHAs,
- Any other pertinent information.

2.4.6 Trinidad and Tobago attended and participated in two (2) tactical support ad-hoc web conferences, facilitated by CADENA. The first ad-hoc CADENA web-conference was on 13 January 2025, during which the launch was eventually annulled. The second web conference was on the 16 January 2025, in which the launch was successful.

2.4.7 These ad-hoc conferences served to foster quick and immediate communication and action, in case any issues developed prior to, during and/or after the AHAs activation associated with the launch.

2.5 ***Trinidad and Tobago's ATFM Tools***

2.5.1 Trinidad and Tobago is currently working with its service provider to conduct a hardware refresh and software upgrade to its existing ATFM tools.

2.5.2 Some of the expected software improvement are, but not limited to:

- Demand information will be depicted as both Entry Count and Occupational Count, *(demand is currently displayed only as entry count, adjusted to 10, 15, 20, 30, 60 minutes intervals);*
- The addition of a Traffic Complexity Tool (TCT) that calculates complexity based on the interaction between flights;
- The calculation of workload, connected to complexity factor; and
- Performance of "what-if" simulation on sector configuration.

2.5.3 The service provider has already submitted a work plan for installation, configuration, testing of, and the operational and technical training on, the upgraded ATFM system.

2.5.4 The full implementation of the upgraded system, and associated training, is expected to be completed by August 2025.

3 Conclusion

3.1 Given the notable increases in air traffic demand and the occasional occurrences of planned and unplanned events, that may disrupt, or have the potential to disrupt ATS operations, Trinidad and Tobago strives to continually improve its ATFM and CDM processes.

3.2 Trinidad and Tobago looks forward to accomplishing its objective to develop and enhance the provision of a continuous and collaborative ATFM service within the Piarco FIR. This objective will be realized through continuous research and training, specialized ATFM tools, and the involvement of key stakeholders.

3.3 Trinidad and Tobago continues to learn from its past experiences, and those of its regional and international partners.

3.4 The meeting is invited to note the content of this paper, discuss any relevant matters as appropriate, and submit comments on the ATM/CPG/PFIR, by 30 April 2025, to Mr. Riaaz Mohammed, Manager Air Navigation Services Planning and Development at the following email:
rmohammed@caa.gov.tt

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TRINIDAD AND TOBAGO
CIVIL AVIATION AUTHORITY
AIR NAVIGATION SERVICES
DIVISION

PLANNING AND DEVELOPMEMT

Air Traffic Management Contingency Procedures Guide Piarco Flight Information Region (ATM/CPG/PFIR) Draft Version 1.0

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Abstract: This document provides general policies, guidance and information required for the management and supervision of the ANS Planning and Development Department.		
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DOCUMENT APPROVAL

The following table identifies all management authorities who have successively approved the present issue of this document.

AUTHORITY	NAME AND SIGNATURE	DATE (*dd/mm/yyyy*)
REVIEWED BY: Manager ANSPD	…… Riaaz Mohammed	xx/xx/2025
APPROVED BY: Executive Manager ANS	…… Rohan Garib	xx/xx/2025

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Inserted below is a record of the amendments and corrected errors made to this document.

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ABBREVIATIONS

Abbreviation	Meaning
ACC	Air Traffic Control Center
ADS-B	Automatic Dependent Surveillance - Broadcast
ADS-C	Automatic Dependent Surveillance - Contract
AFS	Aeronautical Fixed Service
AFTN	Aeronautical Fixed Telecommunication Network
AIDC	Air Traffic Services Interfacility Data Communication
AIM	Aeronautical Information Management
AMHS	Aeronautical Message Handling System
AMS	Aeronautical Mobile Service
ANS	Air Navigation Services
ANSPD	Air Navigation Services Planning and Development
ANSP	Air Navigation Services Provider
AOCG	Air Traffic Management Operational Contingency Group
APP	Approach Control
ATC	Air Traffic Control
ATCO	Air Traffic Control Officer
ATFM	Air Traffic Flow Management
ATM	Air Traffic Management
ATS	Air Traffic Services
CADENA	CANSO ATFM Data Exchange Network for the Americas
CANSO	Civil Air Navigation Services Organization
CAR	Caribbean
CDM	Collaborative Decision Making
CAR CERT	Caribbean Contingency & Emergency Response Team

Abbreviation	Meaning
CERT	Contingency & Emergency Response Team
CNS	Communication Navigation & Surveillance
CPDLC	Controller-Pilot Data Link Communication
CWP	Controller Work Position
ECAR	Eastern Caribbean
FAA	Federal Aviation Administration
FDP	Flight Data Processor
FDPS	Flight Data Processing System
FIR	Flight Information Region
FLAS	Flight Level Allocation Scheme
FPL	Flight Plan
HF	High Frequency
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
ITCZ	International Tropical Convergence Zone
LoA	Letter of Agreement
LVLCP	Level Capping
MAIM	Manager Aeronautical Information Management
MAPD	Manager Air Navigation Services Planning and Development
MCNS	Manager Communication, Navigation & Surveillance
MDI	Minimum Departure Interval
MINIT	Minutes In Trail
MIT	Miles In Trail
NACC	North American, Central American & Caribbean
NOTAM	Notice to Airmen
OAC	Oceanic
OIS	Operational Information System

Abbreviation	Meaning
POC	Point of Contact
PANS	Procedures for Air Navigation
PASA	Planned Airway System Alert
RNAV	Area Navigation
SAR	Search and Rescue
SSR	Secondary Surveillance Radar
TMA	Terminal Control Area
TMM	Traffic Management Measure
TTCAA	Trinidad and Tobago Civil Aviation Authority
TWR	Tower
VHF	Very High Frequency
VORs	Very High Frequency Omni Directional Range

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1.0 Introduction

1.1. Overview

The Trinidad and Tobago Civil Aviation Authority (TTCAA) Air Navigation Services (ANS), in its responsibility to provide an Air Traffic Control (ATC) and Alerting Service within the airspaces under its jurisdiction, at times faces challenges while guaranteeing the continuity and sustainability of these services during periods where planned and unplanned factors may disrupt, or threaten to disrupt, the provision of these services.

The International Civil Aviation Organization (ICAO) Annex 11 to the Convention on International Civil Aviation states that “Air Traffic Services (ATS) Authorities shall develop and promulgate Contingency Plans for implementation in the event of disruption, or potential disruption, of ATS and related supporting services, in the airspace for which they are responsible for the provision of such services”.

The TTCAA ANS provides ATC and Alerting Services within the Piarco Flight Information Region (FIR). This document contains details of arrangements in place to ensure, as far as possible, the continued safety and continuity of Air Navigation in the event of contingency situations that may result in partial or total disruption of ATS within the Piarco FIR.

A proper and timely response to contingencies affecting the Piarco FIR, and Approach Sector, is vital for the assurance of an acceptable level of safety when transitioning to, and/or operating in contingency mode; and to ensure the continuity of Air Traffic Operations.

1.2. Objective

The objective of this Air Traffic Management Contingency Procedures Guide Piarco Flight Information Region (ATM/CPG/PFIR) is to provide guidance to all affected stakeholders to respond in a timely, harmonized and effective manner to contingency events that result in, or may result in the partial or total disruption of ATS within the Piarco FIR.

The plan provides for the safe continuation of air traffic within the Piarco FIR during periods when ATS may be disrupted or unavailable.

The plan would include the measures to be taken in cases where the interruptions, planned or unplanned, would result in a partial or total interruption to the service. During periods of disruptions, it is expected that the measures contained in this plan would as far as practicable, enable flights, which choose to operate within the Piarco FIR, to proceed in a safe and orderly manner.

1.3. Scope

This ATM/CPG/PFIR considers:

1. Harmonized contingency procedures adopted by the Piarco ATM Operation Contingency Group (AOCG), the Piarco Air Traffic Control Center (ACC), Air Navigation Service Providers (ANSPs) from FIRs adjacent to the Piarco FIR, ANSPs of the Terminal Control Areas (TMAs) within the Piarco FIR, Aircraft Agencies and/or Operators and other affected Organizations.

2. Detailed procedures that provides guidance on the steps to take during contingency situations which may result in a degradation of the ATC service provided (limited service), as well as situations where there is a total loss of the ability to provide ATC services (no service).

3. Contingency Procedures for disruption of services within the Piarco FIR outlining the following:
    a) Piarco procedures and those of the adjacent FIR's, TMA's and Airspace users' supporting procedures;
    b) Notification procedures;
    c) Implementation of the plan;
    d) Contingency procedures for partial disruption;
    e) Contingency procedures for the transition to ATC Zero **(See Annex 1 - ATS Contingency Plan - Piarco FIR)**;
    f) Contact details; and
    g) Quick reference contingency checklists.

2.0 Management of the ATM Operational Contingency Plan for the Piarco FIR

2.1. Overview

The ATM/CPG/PFIR would be managed by the Piarco AOCG, which is headed by the TTCAA Executive Manager of the Air Navigation Services (EMANS), the Manager Air Navigation Services Planning and Development (MAPD) and Manager ATS and Air Navigation Services Safety (MATS & ANSS). Other members comprise of personnel from the following offices:

1. Manager Aeronautical Information Management (MAIM);
2. Manager Communication, Navigation & Surveillance (MCNS);
3. Unit Chief - ACC/APP (UC-ACC/APP);
4. Unit Chief, AIM Operations (UC-AIM OPS);
5. Unit Chief, Planning & Technical Evaluation Unit (UC-PTEU);
6. Unit Chief, Air Navigation Services Planning and Development (ANSPD) Quality;
7. ATS Supervisor; and
8. Communication Navigation Surveillance (CNS) Supervisor.

***Note*: Contact lists are provided in Appendix 4 of this document.**

The general functions of the AOCG shall include, but is not limited to, the following:

1. When appropriate, oversee the implementation and conduct of the Contingency Plan during periods of major partial disruptions or total disruption to ATS;
2. Arrange for all relevant stakeholders to receive training on aspects of the Contingency Plan;
3. Organize scheduled internal and regional table-top exercise based on the procedures outlined in the plan;
4. Review, and update as required, the Contingency Plan every two (2) years, or as may be required;

5. Develop a procedure to ensure the distribution to stakeholders of the latest version of the Contingency Plan; and
6. During severe disruptions, or ATC Zero situations, coordinate and collaborate with the TTCAA Executive Management Committee and the ANS Contingency Plan Coordinator, keeping them informed and up-to-date on the status of the ATS contingency situation.

The measures established in this ATM/CPG/PFIR document would be activated in cases of major planned and/or unplanned interruptions to ATS or other supporting services.

2.2. Contingency Categories and Stages

This document will focus on several types of contingency situations. However, each type of contingency would be placed into the two (2) categories as identified below:

1. Partial Disruption – Operational scenario in which the routine provision of ATS within the Piarco FIR is affected. Depending on the constraint causing the disruption, the effect can be marginal or major. In major partial disruptions, it may only be possible to provide a flight information and alerting service, depending on the severity of the event that causes the disruption; and
2. Total Disruption (ATS Zero) – Operational scenario in which ATS cannot be provided.

Depending on the severity of the impact of the event, each category of contingency will be assigned a colour code as follows:

Colour	Category	Description
Green	Partial interruption	Normal Operations with monitoring of potential threat
Yellow	Partial interruption	Normal to affected operations
Orange	Partial interruption	Major disruption to operations
Red	Complete interruption	ATC - 0

Table 1: Colour Categories

Contingency Category	Stage and Colour Code	Description	Effects	General Mitigation
Partial Interruption	**Level 1) Green**	Normal Operations with monitoring of potential threat	1) Identification and monitoring of potential threats (ITCZ, Tropical disturbances, Tropical depressions, Tropical Storms, Hurricanes, Volcanic Eruptions, Pandemic, planned outages, etc.).	a) Monitor potential threats; b) Assess threat and conduct preparatory and advanced planning; c) Collaborate and communicate with stakeholder regarding the intended plans; and d) Attain feedback and adjust as necessary.
	Level 2) Yellow	Normal to affected operations	1) ATS Operations being affected; 2) Operational Staff may be reduced; and 3) Impact to CNS assets equipment.	a) Analyze impact; b) Perform analysis of solutions, e.g. Sectorisation, Air Traffic Flow Management (ATFM) Solutions, additional staff, etc.; c) Communicate constraints and solutions to stakeholders (NOTAMs, Adhoc phone/web meeting, CADENA, emails, etc.); d) If implemented, monitor ATFM measures and

Contingency Category	Stage and Colour Code	Description	Effects	General Mitigation
				adjust/discontinue as necessary; and e) Perform post ops analysis.
	Level 3) Orange	Major disruption to operations	1) High impact to ATS operations.	a) Communicate event and solutions to stakeholders; b) ATFM measures – (Temporary Ground Stop, LVLCP, MINIT/MIT, Re-Routes, MDI (MINIMUM DEP INTERVALS), simple ground delay procedures; c) Implement Contingency staffing procedures Preferred Routes; d) Airspace re-classification when required; and e) Reduced capacity procedures (Slowing traffic to keep within the reduced capacity).
Complete Interruption	**Level 4) Red**	ATC – 0	1) ATS Suspended due to: a) Equipment - air to ground and ground to ground communications	a) Transition to ATC Zero Contingency Plan.

Contingency Category	Stage and Colour Code	Description	Effects	General Mitigation
			failure; b) Staffing - Unavailability of staff below the minimum to provide an ATS service; and c) Evacuation of ATS facility.	

Table 2: Colour Category Details

3.0 Detailed Contingency Procedures – Piarco FIR

3.1. Overview

This ATM/CPG/PFIR for the Piarco FIR does not intend to establish procedures that covers the numerous amounts of possible interruptions that could take place in the Piarco FIR, since these can be quite countless. However, the plan focuses on contingency procedures for the events that may result in Partial Disruption to the ATS and other supporting services, and Total Disruption to ATS (ATC Zero).

Contingency procedures are described for the following events that lead to **Partial disruption of ATS**:

1. Disruption of Air-to-ground Communication Capability (Aeronautical Mobile Service - AMS);
2. Disruption of Ground-to-ground Communication Capability (Aeronautical Fixed Services – AFS);
3. Disruption of surveillance services;
4. Aeronautical Messaging Handling System (AMHS) or Flight Data Processing System (FDPS) Failure; and
5. Reduced staffing.

The Contingency procedures are described for the following events that lead to the **Total disruption of ATS (ATC Zero)**:

1. Complete failure of AFS and AMS (i.e. Ground-to-ground and Air-to ground);
2. Planned and Emergency evacuation of Air Traffic Control Center (ACC);
3. Unavailability of sufficient ATS staff; and
4. Anticipated partial or total disruption to Air Navigation Services due to **severe weather**.

In the event of major partial disruptions (Level 3), or total disruptions (Level 4), to ATS, the AOCG shall be activated. The AOCG shall:

1. Oversee and assist the operations during, the transition to and period of contingency mode;
2. Include any necessary specialist personnel input from the various disciplines within the TTCAA;
3. Ensure that all affected adjacent airspaces, TMAs, system users, customers and other relevant stakeholders are kept updated on the status of the contingency;
4. Exchange up-to-date information with the adjacent ATS authorities and TMAs concerned to coordinate contingency activities;
5. Notify the designated organizations, such as ICAO, Civil Air Navigation Services Organization (CANSO) ATFM Data Exchange Network for the Americas (CADENA), International Air Transport Association (IATA), Caribbean Contingency & Emergency Response Team (CAR CERT), of the contingency situation sufficiently in advance and/or as soon as possible;
6. Take necessary action to ensure that the relevant Notices to Air Men (NOTAMs) are issued in accordance with that prescribed in section 3.2 and 3.3, and appendices (2) and (3), of this document, or as otherwise determined by the contingency situation;
7. Oversee the transition back to normal operations, when the event(s) causing the contingency has(have) been resolved; and
8. Ensure that all stakeholders are appropriately advised when normal operations have resumed.

3.2. Partial Disruptions

In the event of a **major** partial disruption to ATS, affected stakeholders shall be notified via the appropriate NOTAM, and/or any other available means no **later than twelve (12) hours prior to activation, or as soon as practicable in case of an unexpected service interruptions**. The following information may be included in the notification:

1. Time and date of the beginning of the contingency measure;
2. The nature of the contingency event;
3. The effect to the ATS and/or other supporting services;
4. Information made for alternative services;
5. Measure being applied to mitigate the constraint;
6. Procedures to be followed by adjacent ATS Units and TMAs;
7. Procedures to be followed by Pilots; and
8. Any other relevant information.

The following paragraphs provide a description of the events, mentioned in the sub-section 3.1 that can partially disrupt air traffic operations, and the procedures to respond to the disruptive event.

3.2.1 Air-to-ground communication Failure

3.2.1.1 Effects on ATS

1. Limited Very High Frequency (VHF) Coverage, or, Total loss of VHF coverage;
2. Reduced capacity; and
3. Marginal (Level 2) to major disruption (Level 3) of ATS depending on extent of failure.

3.2.1.2 Procedures for the Piarco ACC

Preliminary action:

1. Analyze and determine the extent of coverage limitation;
2. Escalate the internal ATS matrix;
3. Perform Preliminary action and notify adjacent ATS facilities and TMAs. Preliminary action for **Major** VHF Communication failure may include:
    a) Coordination with TMAs to stop/restrict entry of traffic into the Piarco FIR;

b) If necessary, implement a temporary ground stop for departing traffic entering the Piarco FIR, departing from; TMAs, Georgetown, Maiquetia, Margarita, Juliana;

c) Notification to ICAO, CADENA and CAR CERT; and

d) Coordination with Adjacent FIRs re-routes around Piarco FIR as necessary.

4. Post urgent advisory on the CADENA Operational Information System (OIS) with preliminary information;

Follow-up action:

5. Discuss and formulate ATFM measures, as necessary, to manage marginal or major communication outage, as required;

   Note: Refer to paragraph 4.1.1 below and checklist in Appendix 2 for possible ATFM Measures.

6. Coordinate ATFM Measures with adjacent facilities and TMAs;
7. Implement the use of Controller-Pilot Data Link Communication (CPDLC) and relay through High Frequency (HF) communications as a supplement to, or an alternative to VHF communications, depending on severity of outage;
8. Continually update the CAR CERT and CADENA of all measures being applied;
9. Monitor and adjust as necessary, the ATFM measures; and
10. Issue appropriate NOTAM and continue to update the information on the CADENA OIS.

3.2.1.3 Procedures for TMAs and Adjacent ATS units

On receiving information that the Piarco ACC has limited or total VHF communication, the TMAs shall:

1. Initially stop/restrict traffic from entering the Piarco FIR, until further advised;
2. Participate, as far as practical, in any contingency/ATFM coordination Collaborative Decision Making (CDM) meetings;

3. Support/Provide, as far as practical, any agreed upon Traffic Management Measures (TMMs) initiated by Piarco. If unable to provide TMMs, advise the Piarco ACC as soon as possible;
4. Advise the Piarco ACC of any message(s) that overflying aircraft may want to relay to Piarco;
5. Continually monitor NOTAMs and/or the CADENA OIS for any updated information;
6. Provide any other assistance as necessary;

On receiving information that the Piarco ACC has limited or total VHF communication, the ATS Units of adjacent FIRs shall:

7. Advise aircraft, within their jurisdiction, of the VHF communication failure within the Piarco FIR, and if requested by Piarco, to log on to Piarco CPDLC if so equipped;
8. Participate in any contingency/ATFM coordination CDM meetings;
9. Support/Provide any agreed upon TMMs initiated by Piarco. If unable to provide TMMs, advise the Piarco ACC as soon as possible;
10. Advise the Piarco ACC of any message that aircraft may want to relay to Piarco;
11. Continually monitor NOTAMs and/or the CADENA OIS for any updated information; and
12. Provide any other assistance as necessary.

3.2.1.4 Procedures for pilots and aircraft operators:

1. Maintain Assigned Secondary Surveillance Radar (SSR) transponder codes. If codes were not assigned, maintain a transponder code of 2000.
2. Airborne flights will:
    a) Continue to operate in accordance with procedures for communication failure as outlined in Document 4444 Procedures for Air Navigation (PANS) ATM Chapter 15, paragraph 15.3.3; and
    b) Make or broadcast routine position reports in line with normal ATC reporting procedures. These broadcasts can be made on the designated Piarco ACC

frequencies, on the Air-to-Air frequency 123.45, and on the emergency frequency 121.5.

3. Pilots of aircraft and/or flight dispatchers planning for operations within the affected areas of Piarco FIR, during the period of the contingency, should check all relevant NOTAMs and other related publications and plan their flights accordingly.

3.2.2 Ground-to-Ground Communication Failure

3.2.2.1 Effects on ATS

1. Inability to coordinate with adjacent ATS units and TMAs via the Eastern Caribbean (ECAR) circuits; and
2. ATS operational coordination effected via the dedicated telephone land-lines and/or cell phone.

3.2.2.2 Procedures for the Piarco ACC

1. Internal notification:
    a) Escalate internal ATS matrix, and;
    b) Notify CNS - MCNS, CNS Technician.
2. Notify the adjacent FIRs and TMAs that ATC operational coordination will be effected via the following means:
    a) Dedicated telephone lines and/or cell phone lines; or Aeronautical Fixed Telecommunication Network (AFTN); and

Note: Air Traffic Controllers (ATCOs) must ensure that the appropriate response messages are sent to the originator for AFTN coordination messages. ATCOs shall also ensure that the appropriate response messages are received from adjacent FIRs during coordination via the ATFN.

b) ATS Interfacility Data Communication (AIDC), when available, and in accordance with established administrative and operational agreements.

3. Issue the appropriate NOTAM.
4. Maintain vigilance to receive phone calls and/or AFTN message that may contain pertinent operational aeronautical information.

3.2.2.3 Procedures for Adjacent ATS units and TMAs

1. Effect ATC operational coordination with the Piarco ACC via:
    a) The designated phone numbers:
        i. 1 868 669 4852 – landline; and
        ii. 1 868 271 3218 – cell ***(Note: not recorded)***.
    b) AFTN/AMHS – TTZPZQZX.
2. Maintain vigilance to receive phone calls and/or AFTN message that may contain pertinent operational aeronautical information.

3.2.2.4 Procedures for pilots and aircraft operators

1. Pilots may be requested to self-coordinate with the receiving ATS unit in cases where it may be deemed necessary;
2. Pilots may be requested to relay urgent messages to adjacent units, where deemed necessary;
3. Pilots may be required to hold clear of adjacent FIR boundaries until approval is obtained for them to enter the adjacent airspace; and
4. Aircraft operators may have to adjust schedules due to ATFM measures.

3.2.3 Surveillance Disruption

3.2.3.1 Effects on ATS

1. Limited or no surveillance service;
2. Non-Surveillance ATC procedures; and
3. Reduced capacity.

3.2.3.2 Procedures for Piarco ACC

The following procedures, in sub-sections 3.2.3.2.1 and 3.2.3.2.2, cover both partial and total surveillance disruption.

3.2.3.2.1 Partial Surveillance disruption

For situations where surveillance coverage is reduced due to the loss of one or more surveillance sensors, the Piarco ACC shall be guided by the following procedures:

Preliminary actions:

1. Determine areas of the airspace where coverage has been lost;
2. For the affected sectors, transition to Non-surveillance procedures, in accordance with current directive “ATM System Degradation Procedures”;
3. Initiate any preliminary actions, as necessary, to stabilize operations while transitioning to non-radar procedures within the area of no coverage: These may include, but not limited to, the following:
    a) Where practical, initially Stop/Restrict traffic from adjacent FIRs and TMAs from entering the airspace, until the situation has been stabilized;
    b) Coordinate the re-routing or holding of airborne traffic, until situation has been stabilized;

c) Implement temporary ground stops for traffic entering the Piarco FIR, departing from; TMAs, Georgetown Juliana, Maiquetia, Margarita, Piarco and ANR Robinson Airports;

d) Keep and maintain situational awareness of airborne traffic within the Piarco FIR, e.g. electronic and printing of paper strips, Flight Plan (FPL) tracks, etc.;

e) Check the status and frequencies of Navigational Aids that may be used for separation, e.g. Very High Frequency Omni Directional Ranges (VORs); and

f) Other measures as may be necessary;

4. Provide preliminary notification to adjacent ATS facilities and TMAs, stating the following:

a) Areas of surveillance coverage loss; and

b) Any preliminary measures being taken by Piarco during transition to non-radar operations.

Follow-up actions:

5. Determine/Formulate ATFM measures to manage the traffic;

Note: Please refer to section 4.1.2 below and/or the appropriate checklist in Appendix 2, Surveillance Disruption Checklist for ATFM measures that can be applied.

6. Coordinate ATFM measures with adjacent FIRs and TMAs;
7. Promulgate and publish the appropriate NOTAM advising of:

a) Areas of surveillance outage;

b) Estimated Time that the issue is expected to be rectified; and

c) TMMs to be implemented.

8. Publish above information on the CADENA OIS, Contingency group chats or any other agreed-upon available means.

3.2.3.2.2 Total Surveillance Disruption

For situations of total Surveillance Failure, the Piarco ACC shall:

1. Complete the relevant actions, listed in 3.2.3.2.1 above, and/or the appropriate checklist in Appendix 2, Surveillance Disruption Checklist; to transition to Non-Surveillance Procedures.

3.2.3.3 Procedures for Adjacent ATS units and TMAs

1. Accommodate, as far as practical, the ATFM measures initiated by the Piarco ACC and agreed upon by affected stakeholders;
2. Advise traffic, within the respective TMA airspace, of the situation within the Piarco FIR; and
3. Advise the Piarco ACC, as soon as possible, of any deviation from the agreed upon contingency and/or ATFM measures.

3.2.3.4 Procedures for Pilots and aircraft companies

1. Adhere, as far as practical, to Contingency measures;
2. Maintain last clear flight level, speed, route, and/or heading, until otherwise advised by ATC;
3. Advise ATC, as soon as possible, of any requirement to deviate from the contingency/ATFM measures; and
4. Aircraft Operating Companies are to continually monitor NOTAMs, CADENA OIS and other official platforms for updated information, and consider such in their flight planning.

3.2.4 FDPS Failure

3.2.4.1 Effects on ATS

1. No access to FPL;
2. Limited ATM System functionalities, such as:
    a) No automatic FPL correlation to radar tracks;
    b) No Trajectories of controlled tracks;
    c) No Sector inbound/outbound lists;
    d) No conflict alerts;
    e) No ADS-C reporting; and
    f) No AIDC message exchange.
3. Increased workload due to manual entry of entire flight information into the Controller Work Position (CWP).

3.2.4.2 Procedures for Piarco ACC

1. Notify adjacent ATS units and airline operators of the expected duration of the outage following consultation with AIM and CNS departments.
2. Request that adjacent FIRs, TMAs and aircraft or airline operators, send FPLs, at least sixty (60) minutes prior to entry into Piarco FIR, via the following means, in order of priority:
    a) Fax;
    b) Email; and
    c) Chat feature of the CADENA OIS – (Push emails would be generated through this feature).

    Note: FPLs may be available on other accessible systems for processing; e.g. CRONOS.
3. Manually enter FPLs into the Flight Data Processor (FDP) data base.
4. Coordinate with the adjacent FIRs and TMAs any ATFM measure as necessary.

5. Issue the appropriate NOTAM.

3.2.4.3 Procedures for Adjacent ATS units and TMAs

1. Fax or email FPLs to the Piarco ACC. The proper contact information for this purpose is depicted below:
    a) AIM Fax contact number - 1 868 669 1716; and
    b) ACC email contact: ais@caa.gov.tt and piarcoacc@caa.gov.tt.
2. Adhere, as far as practical to TMMs initiated by Piarco and advise, as soon as practical, any deviations to measures.

3.2.4.4 Procedures for Pilots and aircraft companies

1. Pilots and Aircraft companies should monitor NOTAMs and other communications for updated information, and consider such in their flight planning.

3.2.5 Aeronautical Messaging Handling System Failure

3.2.5.1 Effects on ATS

1. FDP unable to receive FPL data automatically;
2. No automatic correlation of RADAR tracks;
3. Unable to issue/receive NOTAMs;
4. No AIDC message exchange; and
5. Increased ATC and AIM workload to manually process FPL messages.

3.2.5.2 Procedures for Piarco ACC

1. Notify adjacent ATS units and airline operators of the expected duration of the outage following consultation with AIM and CNS departments;

2. Request that adjacent FIRs, TMAs, and aircraft or airline operators, send FPLs, at least sixty (60) minutes prior to entry into Piarco FIR, via the following means, in order of priority:
    a) Fax;
    b) Email; and
    c) Chat feature of the CADENA OIS – (Push emails would be generated through this feature).
3. Manually enter FPLs into the FDP database;
4. Coordinate with the adjacent FIRs and TMAs any ATFM measure as necessary; and
5. Issue the appropriate NOTAM.

3.2.5.3 Procedures for Adjacent ATS units and TMAs

1. Fax or email FPLs to the Piarco ACC. The proper contact information for this purpose is depicted below:
    a) AIM Fax contact number – 1 868 669 1716;
    b) AIM Operations Unit – ais@caa.gov.tt; and
    c) ACC email contact – piarcoacc@caa.gov.tt
2. Adhere, as far as practical, to TMMs initiated by Piarco and advise, as soon as practical, any deviations to measures.

3.2.5.4 Procedures for Pilots and/or Aircraft Companies

1. Pilots and Aircraft companies should monitor NOTAMs and other communications for updated information, and consider such in their flight planning.

3.2.6 Transition to normal operations after partial disruption - Piarco ACC Procedures

When information has been received that the outage causing partial disruption has been resolved, the Piarco ACC shall:

1. Confirm, where applicable, the status of associated equipment/system, e.g., operating on main only, no stand-by power; or operating at reduced power, etc.;
2. Escalate the ATS Matrix advising of the outage status;
3. Monitor the associated equipment/system for a period of time, as determined by the UC Chief ACC/APP and/or the Supervisor ACC/APP, until it is deemed that the equipment/system is stable and functioning properly, and it is safe to gradually reduce restrictions towards resuming normal operations;
4. Notify the adjacent ATS authorities and TMAs of the reduction or cancellations of restrictions and/or ATFM measures; and
5. Publish the appropriate NOTAM advising of the cancellation of all restrictions and ATFM measures, when it is determined that it is safe to do so.

3.3. Total Disruption – Inability to provide an ATS Service – Transition to ATS Contingency Plan

In the event of a total disruption to ATC services resulting in ATC Zero within the Piarco FIR, the safe continuation of air traffic, shall be conducted in accordance with the "ATS Contingency Plan Piarco FIR", contained in Annex 1: to this document.

This section provides guidance on the procedures to be followed, for the transition into and activation of the "ATS Contingency Plan - Piarco FIR" during various anticipated or sudden scenarios that may lead to ATC Zero. The scenarios that lead to "No service" or "ATC Zero" are considered Level 4 ATS contingency events.

As mentioned in section 3.1, the "Level 4" events covered in this document are as follows:

1. Sudden complete simultaneous failure of both the AFS and AMS (i.e. Ground-to-ground and Air-to ground);
2. Emergency evacuation of Air Traffic Control Center (ACC);
3. Anticipated transition to ATC zero due to unavailability of sufficient ATS Staff; and
4. Anticipated major partial or total disruption to Air Navigation Services due to **severe weather.**

At the onset of a **Level 4** contingency event, whether anticipated or sudden, the AOCG will be activated by the office of the EMANS or his designate. The AOCG will coordinate and collaborate with the TTCAA's Executive Management Committee and the ANS Contingency Plan Coordinator, keeping them informed and up-to-date on the status of the contingency situation. The AOCG shall:

1. Oversee the operations during, the transition to and period of contingency mode;
2. Include any necessary specialist personnel input from the various disciplines within the TTCAA;
3. Keep in contact with and update all affected adjacent airspaces, TMAs, system users, customers and other relevant stakeholders;
4. Exchange up-to-date information with the adjacent ATS authorities and TMAs concerned to coordinate contingency activities;
5. Notify the designated organizations, such as ICAO, CADENA, IATA, CAR CERT, of the contingency situation sufficiently in advance and/or as soon as possible; and
6. Take necessary action to ensure that the relevant NOTAMs are issued in accordance with that prescribed in the "ATS Contingency Plan Piarco FIR", or as otherwise determined by the contingency situation.

As stated in the "ATS Contingency Plan - Piarco FIR", in the event that ATS cannot be provided within the Piarco FIR, the Piarco ACC shall publish or cause to be published, the corresponding NOTAM indicating the following:

1. Time and date of the beginning of the contingency measures;
2. Area Navigation (RNAV) Routes available for over-flying traffic and tactical procedures for flight arriving and departing airports within Piarco's airspace;
3. Details of the facilities and services available or not available and any limits on the provision of ATS (e.g. ACC, TMA, APP, TWR and FIS), including an expected date/time of restoration of services if available;
4. Information on the provisions made for alternate services;
5. Procedures to be followed by adjacent ATS Units;
6. Procedures to be followed by pilots; and
7. Any other details, with respect to the disruption, and actions being taken that aircraft operators may find useful.

3.3.1 Complete failure of AFS and AMS (i.e. Ground-to-ground and Air-to ground)

The complete failure of the Aeronautical Fixed Service (AFS) and Aeronautical Mobile Service (AMS) is considered a level 4 event, in which ATS cannot to be provided. The following describes the procedures to transition to ATC Zero.

3.3.1.1 Effects on ATS

1. Total loss of VHF overage throughout the continental Piarco FIR;
2. Total loss of the ability to communicate with aircraft via voice communications;
3. Loss of the ability to perform operational ATC coordination with adjacent ATS units and TMAs via the dedicated ATS communication lines. Therefore, due to the above; and
4. Transition to ATC Zero.

3.3.1.2 Procedures for Piarco ACC

Preliminary action:

1. Escalate internal ATS matrix;
2. The AOCG will be considered activated once the previous step (1) is completed;
3. The AOCG shall notify the Management Personnel of adjacent ATS facilities and TMAs as soon as possible after the onset of the "No ATC Service" event;
4. The ATC supervisor, as far as practical, will advise the controllers in the adjacent ATS units and TMAs, of the total communication failure, using alternative voice communication means, e.g. dedicated cell phone;
5. The ATC supervisor shall, as far as practicable, use all available means possible to stabilize the traffic and ensure that all aircraft operating within the Piarco FIR (TTZP), at the time of total communication failure, are adequately separated. This may be achieved through:
    a) Relay through New York Radio HFs, TMAs, adjacent ATS facilities; and/or
    b) Communications through CPDLCs, for aircraft so equipped.

Follow-up action:

The AOCG may assist with some follow-up actions as required, but in close coordination with the ATS operations. The Piarco ACC and/or AOCG shall:

6. Use any communication means to coordinate with the TMAs and adjacent ATS facilities to stop/restrict traffic from entering the Piarco FIR; (Flights unable to avoid the Piarco FIR would be handled tactically);
7. Notify ICAO, CADENA, and CAR CERT;
8. Request that Adjacent ATS facilities and TMAs advise aircraft, that plan to operate within the Piarco FIR, of the no ATC service contingency event;
9. Develop and coordinate ATFM measures with adjacent ATS facilities for the management of flights that are already operating within the Piarco FIR, and for those flights that are 15

minutes or less flying time from the Piarco FIR and unable to re-route around the Piarco FIR. These measures may include, but not limited to:

a) Re-routes within the Piarco FIR;

b) Minutes In Trail (MINITs) and/or Miles In Trail (MITs) as required; and

c) Correct flight level for direction, or specific flight levels that would accommodate unrestricted descent for arrivals into the TMAs.

Note: Guidance on ATFM measures for complete simultaneous Air-to-air and Ground-to-ground communication failure is contained in section 4.2.1 below and Appendix 3, Simultaneous Air-to-ground and ground-to-ground failure checklist.

10. Coordinate, with the adjacent ATS facilities for **ALL OTHER FLIGHTS** to avoid the Piarco airspace; (Coordinate with CADENA to assist with the coordination of flights to re-route around the affected areas of the Piarco airspace, using the Planned Airway System Alternate (PASA) routes); ***Note: This measure allows the Piarco's operation sufficient time to transition to ATC Zero*.**
11. During the transition period to ATC zero, Publish all measures via service message and CADENA OIS;
12. If communications are not restored, arrange to transition to ATC Zero ninety (120) minutes after the initial notification of the contingency event; and ***Note: At this point, all traffic should avoid the Piarco FIR, or arrange to operate in accordance with the Piarco ATS Contingency Plan Flight Level Allocation Scheme (FLAS)***.
13. After transitioning to ATC Zero (FLAS), publish the appropriate NOTAM in accordance with section 2, paragraph 2.1.4, of the "TTCAA ANS ATS Contingency Plan Piarco FIR".

3.3.1.3 Procedures for adjacent ATS units and TMAs

On receiving information that the Piarco ACC has suffered a total Air-to-ground and Ground-to ground failure, and will be transitioning to ATC Zero, the Adjacent ATS units and TMAs may, as far as practicable, carry out the following steps:

1. The TMAs may advise other adjacent TMAs, and aircraft under their control, of the total communication failure at Piarco;
2. TMAs will collaborate and coordinate with Piarco any initial ATFM measures for traffic departing or arriving into their airspace during the transitionary period to ATC Zero;
3. The TMAs will stop/restrict entry of aircraft into the Piarco FIR until further advised;
4. The TMAs will continue to monitor NOTAMs and CADENA OIS publications for any updates on the situation;
5. Adjacent ATS units, as far as practicable, may advise other ATS units adjacent to Piarco and aircraft under their control of the situation in Piarco. Adjacent ATS units may collaborate and coordinate with Piarco, and operate in accordance with, all ATFM and contingency measures for traffic entering or departing their respective airspaces, from/to the Piarco airspace, during the transitionary period to ATC Zero; and
6. Adjacent ATS units shall coordinate with Piarco to allow traffic, that are within fifteen (15) minutes flying from the common FIR boundary from the time of notification of total communication failure, to enter the Piarco FIR at the specific Flight Levels as agreed upon both facilities.

3.3.1.4 Procedures for Pilots and Aircraft Companies during transition to ATC Zero

3.3.1.4.1 For Traffic operating outside the Piarco FIR TTZP

1. Where possible, request clearance to avoid TTZP, ***(Note: Aircraft agencies may coordinate with CADENA Headquarters to operate on Planned Airway System Alternate (PASA) routes to avoid the Piarco airspace)***;
2. When so cleared by the previous ATS facility, continue to the Piarco FIR (TTZP), in accordance with current FPL, or as amended by ATC, to the Exit Point of the Piarco FIR; and
3. When so cleared by the previous ATS facility, continue to the TTZP, at pilot's discretion, in accordance with the published FLAS.

3.3.1.4.2 For Traffic inside the Piarco FIR

1. Continue in accordance with FPL or last ATC clearance;
2. Transmit on emergency frequency (121.5MHz) and air-to-air frequency (123.45MHz) position, heading, flight level. Continue to monitor all relevant frequencies;
3. Establish communication as soon as possible with the next FIR or TMA, and report current position, cleared flight level, the name and estimate of next position, next +1, the name and estimate for exit position/entry position from Piarco FIR/to transferring FIR and the estimate for the next position +1;
4. All request for changes of route, flight level or speed should be limited to those required for flight safety, or arrivals into the TMAs;
5. For arrivals to TMAs, at least three minute prior to commencing descent, broadcast on the last assigned frequency, 121.5 and 123.45, and also on the frequency of the TMA, the following:

   *ALL STATIONS (CALLSIGN), CURRENT POSITION IS (****), HEADING (**DEGREES MAGNETIC), FROM POSITION (*****) TO POSITION (*****) LEAVING FLIGHT LEVEL (NUMBER) FOR FLIGHT LEVEL (NUMBER).*
6. Pilots shall use extreme caution and all available means to detect any conflicting traffic.

3.3.1.5 ATFM measures to be communicated during transition to the published FLAS

Note: Refer to 4.2.1 below and Appendix 3 for guidance on the ATFM measures to be communicated and implemented while transitioning to "No ATC Service" due to the total loss of air-to-ground and ground-to-ground communication failure.

3.3.2 Evacuation of the ACC

An ATC Zero event may be initiated by a sudden evacuation of the ACC facility, due occurrences, such as, a fire/smoke alarm, earthquake; or due to an anticipated event, such as, an expected upcoming reduction in staff, an approaching tropical cyclone, or any other natural or unnatural event. The event may be brief, lasting only a few minutes or hours, or may last for a few days. Procedures for three (3) scenarios, where it may become necessary to evacuate the Piarco ACC, are described in detail below.

Scenario one (1)

An event scenario in which it becomes necessary to immediately evacuate the main ACC, such that operations may be temporarily suspended for a period of forty-five (45) minutes to one (1) hour, while a limited service is resumed from the Standby ACC; until the event that caused the evacuation is resolved.

Scenario two (2)

An event scenario in which it becomes necessary to immediately evacuate the main ACC, but such that, it may not be possible to resume operations at the Standby ACC, since that location may also be affected/threatened by the event causing the contingency, e.g. earthquake.

Scenario three (3)

The event scenario may not be immediate, but may be such that it is anticipated that ATC services will be discontinued due to:

1. A known approaching threat to life and infrastructure, such as: A Category 5 Hurricane approaching Trinidad; and/or
2. An anticipated reduction in staffing below the safe minimum to provide a safe an efficient service.

The following section describes the procedure to be followed for each of the three (3) scenarios.

Note: Procedures for Tropical Storms/Hurricanes would be described in section 3.3.3.

3.3.2.1 Procedures for Piarco ACC

1. Prior to evacuation, broadcast on appropriate frequencies that the ACC is being evacuated and contingency procedures have been initiated;
2. Vacate the ACC in accordance with the established Emergency Evacuation Procedures (for a sudden or immediate evacuation);
3. When appropriate and safe to do so, escalate the internal ATS matrix.

Scenario one - If the situation permits resumption of limited service at Standby ACC.

4. If the situation permits, the UC ACC, in collaboration with the Supervisor, will make every effort the transfer of ATS operations to the Standby ACC. The AOCG shall coordinate, in accordance with established procedures, with the Health, Safety, Security, and Environment personnel (HSSE), for ATCOs to transfer operations to the Standby ACC;
5. The AOCG will arrange to advise the adjacent ATS units and TMAs of the suspension of ATS, and duration, due to evacuation;
6. The AOCG will arrange to promulgate the appropriate NOTAMs and/or appropriate external communications;
7. The AOCG will arrange to send out the appropriate NOTAM cancellations and revised NOTAMs, when ATS resume.

Scenario two - For extended ATS disruption whereby the transfer of operations to the standby ACC is not an option

8. Complete steps (1), (2), (3), (5), (6) and (7) in this section 3.3.2.1;
9. Implement the relevant ATFM measures to transition to “No ATS Service”; and

See guidance on ATFM measures in **section 4.2.2 below and Appendix 3 Evacuation of the ACC checklist.**

Scenario 3 - For a situation where it is anticipated that operational staff will have to evacuate the Piarco ACC due to severe weather.

10. Refer to section 3.3.3 below.

3.3.2.2 Procedures for adjacent ATS units and TMAs

On receiving information that the Piarco ACC is being evacuated, the adjacent ATS units and TMAs may, as far as practicable, carry out the following steps:

TMAs:

1. The TMAs may advise adjacent TMAs and aircraft under their control that Piarco ACC is being evacuated, and that further information would be forthcoming;
2. For sudden evacuations of the Piarco ACC, the TMAs shall stop all traffic, in their respective airspaces, from entering the Piarco FIR, until further advised;
3. Adhere, as far as practicable, to the ATFM/Contingency measures initiated by Piarco ACC, and advise, as soon as possible, if not able to comply;
4. Facilitate the re-routing of traffic through the TMAs airspace network;

Adjacent airspaces:

5. If able coordinate with CADENA and other FIRs to reroute flights around the Piarco FIR;
6. During the transition to ATC Zero, adhere, as far as practicable, to the ATFM/Contingency measures initiated by Piarco ACC, and advise, as soon as possible, if not able to comply; and
7. Ensure that, after activation of the "ATS Contingency Plan Piarco FIR", flights enter the Piarco FIR in accordance with the FLAS, contained within the "ATS Contingency Plan Piarco FIR, Annex (1) to this document.

3.3.2.3 Procedures for Pilots and aircraft companies

Procedures for aircraft operating within the Piarco FIR during the transition to ATC Zero:

1. Continue in accordance with FPL or last ATC clearance;

2. Transmit on emergency frequency (121.5MHz) and air-to-air frequency (123.45MHz) position, heading, flight level. Continue to monitor the frequencies;
3. Establish communication as soon as possible with the next FIR or TMA, and report current position, cleared flight level, the name and estimate of next position, +1, name and estimate for exit position/entry position from Piarco FIR/to transferring FIR, estimate for the next position **+1**;
4. Request for changes of route, flight level or speed should be limited to those required for flight safety, or arrivals into the TMAs;
5. For arrivals to TMAs, at least three (3) minutes prior to commencing descent, broadcast on the last assigned frequency, 121.5 and 123.45, the following:
   *ALL STATIONS (CALLSIGN), CURRENT POSITION IS (****), HEADING (**DEGREES MAGNETIC), FROM POSITION (*****) TO POSITION (*****) LEAVING FLIGHT LEVEL (NUMBER) FOR FLIGHT LEVEL (NUMBER).*
6. Pilots shall use extreme caution and all available means to detect any conflicting traffic

   Procedures for airborne aircraft planning to enter and operate within Piarco FIR, during the transition to ATC Zero:
7. All traffic shall avoid the affected areas of the Piarco FIR during the transition to ATC zero, after which, traffic may operate within the Piarco FIR in accordance with the Contingency Routes (CRs) associated with the FLAS Piarco “ATS Contingency Plan Piarco FIR”.

3.3.2.4 ATFM measures for Evacuation of the ACC

1. Apply the appropriate or relevant measures outlined in section **4.2.2 below** and **Appendix 3, Evacuation of the ACC checklist.**

3.3.3 Anticipated major partial or total disruption to Air Navigation Services due to Severe Weather

Severe weather may result in limited or no access by essential staff to the Piarco's air traffic facilities, therefore resulting in a major partial disruption, or the total disruption of Air Navigation Services. This section provides guidance on the procedures to be followed when it is anticipated that Air Navigation Services may be partially or completely disrupted, due to severe weather phenomenon.
If it is determined by the TTCAA's Management, that the impending severe weather poses a threat to life, and that all staff shall not report/remain on compound for duty, Piarco will initiate the process to transition to the ATS Contingency Plan – Piarco FIR (No services operations).

The process to transition to "No Service" operations should, as far as practicable, commence no less than five (5) hours before the time that it is anticipated that ATC services would be suspended. However, it must be mentioned that the weather phenomenon that exists at the time of activation of the ATS contingency plan, may pose difficulty by airspace user to maintain proper navigation on the CRs associated with the FLAS, without the need to deviate from course or flight level for safety reasons.

It is therefore suggested that airspace users and aircraft agencies consult with the official meteorological sources, e.g. TTMS Metrological Watch Office (SIGMET reports), the National Oceanic and Atmospheric Administration's (NOAA) Tropical Cyclone Advisory Center (TCAC) and World Area Forecast Centers (WAFCs); in order to avoid those areas of the airspace that are impacted by the weather phenomenon.

3.3.3.1 Effects on ATS

1. Limited ATS and alerting service (major partial disruption);
2. ATS and alerting service not provided; and, as a result

3. Transition to and implementation of the "ATS Contingency Plan Piarco FIR" (ATC Zero).

3.3.3.2 Procedures for ACC and or AOCG

1. Escalate the internal ATS matrix and provide information of the circumstance(s) that has/have the potential to result in major partial disruption or ATC zero; ***Note: For tropical cyclones the activation of the AOCG and the planning process may have commenced days in advance.***
2. Gather information on the length of time that Air Navigation Services are anticipated to be partially disrupted or suspended;
3. Notify following stakeholders, as far as practicable, at least five (5) hours in advance, of the time that ATC services would be partially disrupted/suspended:
    a) Adjacent ATS Units and TMAs;
    b) ICAO NACC Regional Office;
    c) ICAO CAR CERT; and
    d) CADENA headquarters.

For an anticipated Major Partial Disruption resulting in limited service

4. The AOCG will coordinate with the TTCAA's ANS Contingency Coordinator and Management Committees to ensure/provide the following:
    a) Adequate resources for available essential staff, such as:
        i. Transport to and from the operations;
        ii. Accommodations and meals where necessary; and
        iii. Other resources that may be deemed necessary for the continuity of operations.
    b) Availability of additional staff from other departments (rated and unrated) to provide support accordingly;

c) That upper management (TTCAA Board, DGCA, TTCAA Executives) are continually kept informed of all developments during the contingency event

5. The AOCG, which will include the ACC/APP supervisor, shall assist in coordinating any ATFM measures for major partial disruptions;
6. The AOCG will use all available means to keep the stakeholders continually updated of the situations; e.g.
    a) Affected Airports closing and opening times;
    b) Status of Airport and ATC services; and
    c) Any other relevant information.
7. The AOCG would assist in formulating and publishing the relevant NOTAMS.

For an Anticipated Disruption resulting in ATC Zero

8. Escalate the internal ATS matrix; ***Note: As the event was anticipated, the AOCG would have already been activated*.**
9. Notify following stakeholders, as far as practicable, at least five (5) hours in advance, of the time that ATC services would be **suspended**:
    a) Adjacent ATS Units and TMAs;
    b) ICAO NACC Regional Office;
    c) ICAO Caribbean Emergency and Response Team; and
    d) CADENA headquarters.
10. The AOCG will Publish or assist in publishing the corresponding NOTAM in accordance with the guidance depicted in the "ATS Contingency Plan – Piarco FIR". The relevant NOTAM shall, as far as practicable, be disseminated no less than four (4) hours prior to the activation of the ATS Contingency Plan – Piarco FIR, for ATC zero; and
11. The AOCG will assist the operations to transition to ATC Zero, prior to all staff evacuating the ACC. The AOCG shall:

a) Coordinate with adjacent ATS units and TMAs to stop/restrict all traffic from entering the Piarco FIR at three (3) hours prior to the activation of the ATS Contingency Plan - Piarco FIR. ***Note: during this time all staff will take the necessary steps to evacuate the facility, while Piarco transitions to ATC zero***; **and**

b) Assist with the evacuation of the facility and coordinate with HSSE personnel and the ATS Contingency plan Coordinator, to account for all ANS staff.

3.3.3.3 Procedures for adjacent FIRs and TMAs

1. Adjacent ATS Units and TMAs will coordinate appropriately with the Piarco FIR, in accordance with the contingency procedures outlined in this document during the transition to "No ATS Service" within the Piarco FIR; and
2. Collaborate with the Piarco ACC and support, as far as practicable, any ATFM measures that may be implemented during partial disruption or the transition to "No ATC Service".

3.3.3.4 Procedures for Pilots and aircraft companies.

1. Airborne flights expecting to operate during the period of "no service, should either avoid the Piarco FIR or plan to operate in accordance with the CRs as depicted within the "ATS Contingency Plan Piarco FIR"; and
2. All aircraft agencies are to plan operations, taking into consideration, the CRs and procedures during the period of No Service.

4.0 Contingency/ATFM Notification Messages

The following section provides guidance on communication of:

1. ATFM measures to be implemented during partial disruption of ATS; and
2. Initial ATFM measures to be implemented during the transition to contingency events that may result in "No ATC Service" within the Piarco FIR.

Stakeholder(s) shall be notified of all ATFM and/or contingency measures via the appropriate NOTAMs. Additional means of notification may include:

a) Service message via the AFTN;

b) CADENA OIS;

c) Stakeholder Group emails; and

d) Stakeholder WhatsApp groups, e.g. E/CAR CERT, CADENA Operations group.

4.1. ATFM messages for Partial Disruption

4.1.1 Air-to-ground communication failure

Due to VHF **Air-to-ground communication failure** within the Piarco FIR the following measures may be implemented:

1. Where equipped, flights shall communicate via CPDLC or relay through New York Radio via HF communications;
2. TMAs shall call-for-start-up and expect at least fifteen (15) MINIT for traffic entering the Piarco FIR from the same departure point, and on similar ATS Routes or Tracks.
3. Flights can expect tactical re-routings as required;
    a) *(List re-routings).*
4. Adjacent ATS facilities shall provide fifteen (15) MINIT at the common boundary for traffic entering the Piarco FIR at ……., regardless of flight level; and

5. Departures from the V.C Bird (TAPA), Guadeloupe, Pointe-a-Pitre (TFFR), Douglas-Charles TDPD and Canefield (TDCF) Dominica, transiting through the San Juan's FIR (TJZS), shall remain within the TMAs ATS airspace network.

4.1.2 Partial or Total loss of surveillance

Due to the unserviceability of the (****) Radar, the following measures are implemented:

1. TMAs shall call-for-start-up or expect fifteen (15) MINIT for traffic entering the Piarco FIR;
2. TTPP and TTCP shall call the Piarco ACC for start-up approval.;
3. Flights can expect the following tactical routings as required;
    a) *(List Routings).*
4. Adjacent ATS units shall provide fifteen (15) MINIT at the common FIR boundary, regardless of flight level;
5. Departures from the V.C Bird (TAPA), Guadeloupe, Pointe-a-Pitre (TFFR), Douglas-Charles TDPD and Canefield (TDCF) Dominica, transiting through the San Juan's FIR (TJZS), shall remain within the TMAs ATS airspace network;

    Note: This measure would depend on whether the outage includes the Guadeloupe's or Martinique's Secondary Surveillance RADAR (SSR).
6. Arrival to the (determined TMAs/airports) shall operate at FL310 or below.

4.2. Notification of initial ATFM Measures to manage Total Disruption during transition to "No ATC Service"

4.2.1 Simultaneous Air-to-ground and ground-to-ground communication failure

The following communication will be disseminated via all possible means as soon as possible after a total air-to-ground and ground-to-ground communication failure, during the transition period to ATC zero:

"Due to air-to-ground and ground-to-ground communication failure the following measures would be implemented between (****) to (****).

1. All traffic shall avoid the Piarco FIR until time #### Z, after which the Piarco ATS Contingency Plan will be in effect;
2. Equipped aircraft to contact Piarco via CPDLC or relay messages via New York's HF;
3. During the transition period to ATC zero, all traffic operating within the Piarco FIR to descend into the TMA:
    a) Aircraft will proceed to the last cleared-to initial approach fix at the last cleared to altitude;
    b) Contact the TMA descending into as soon as possible;
    c) In accordance with the Piarco FIR contingency procedures, three minutes prior to top-of-decent, aircraft shall transmit on the appropriate frequencies reporting position, flight level, flight level descending to, next two positions;
    d) TMAs will relay information in (4a), (4b), and (4c) above, to Piarco on the appropriate telephone/cell phone line(s);
    e) Conflicting traffic would be relayed to aircraft via communication with the TMAs; and
    f) Transfer of control would be at/within the common FIR/TMA boundary.
4. During the transition to ATC Zero, overflights operating within the Piarco FIR:
    a) Would operate in accordance with procedures outlined;
    b) Maintain last cleared flight level;
    c) Contact the accepting FIR as soon as practicable; and
    d) Transfer of control would be at the common FIR boundary.
5. At time, T****Z, the Piarco ATS Contingency Plan shall be activated. All traffic shall either avoid the Piarco FIR or operate in accordance with the FLAS contained within the "ATS Contingency Plan Piarco FIR".

4.2.2 Notification of Sudden Evacuation of the ACC – ATFM measures

The following communication will be disseminated as soon as possible after an ACC evacuation. "Due to the evacuation of the Piarco ACC, ATC services are suspended within the Piarco FIR and Approach airspace from; Date/time T**** to Date / time T**** UTC."

1. Flights operating within the Piarco FIR between time T**** and time T**** UTC shall:
    a) Continue in accordance with FPL or last ATC clearance;
    b) Transmit on emergency frequency (121.5MHz) and air-to-air frequency (123.45MHz) position, heading, flight level. Continue to monitor the frequencies;
    c) Establish communication as soon as possible with the next FIR or TMA, and report current position, cleared flight level, the name and estimate of next position, next +1, the name and estimate for exit position/entry position from Piarco FIR/to transferring FIR and the estimate for the next position +1; and
    d) At least tree (3) minute prior to descent to arrive airports into the TMAs, broadcast on the last assigned designated frequencies for Piarco, as well as 121.5 and 123.45, and the frequencies for the TMAs in question, the following message.

    *"ALL STATIONS (CALLSIGN), CURRENT POSITION IS (****), HEADING (**DEGREES MAGNETIC), FROM POSITION (*****) TO POSITION (*****) LEAVING FLIGHT LEVEL (NUMBER) FOR FLIGHT LEVEL (NUMBER)".*
2. The TMAs within the Piarco FIR are to stop/restrict entry of aircraft into the Piarco FIR;
3. All traffic shall avoid the Piarco FIR until time #### Z, after which the Piarco ATS Contingency Plan will be in effect; or; All traffic shall avoid the Piarco FIR until such time partial or complete ATC services are re-established ***(according to the situation that applies)****; and*
4. At time, T****Z, the Piarco ATS Contingency Plan shall be activated. All traffic shall either avoid the Piarco FIR or operate in accordance with the FLAS contained within the "ATS Contingency Plan Piarco FIR".

4.2.3 Notification to Stakeholders reference partial or total disruption of ATS due to severe weather

4.2.3.1 Partial Disruption due to severe weather

The following communication may be disseminated when it is anticipated that ATC service will be significantly disrupted due to severe weather. “Due to the passage of Tropical Storm/Hurricane xxxxxx, the following ATFM measures are implemented from Date/Time xxxx to Date/time xxxx:”

1. TMAs shall call-for-start-up or expect 15 MINIT from traffic entering the Piarco FIR;
2. TTPP and TTCP shall call the Piarco ACC for start-up approval;
3. Flight can expect tactical routings as may be required:
    a) Routing one …….;
    b) Routing two …….; and/or
    c) ……
4. ATS units of adjacent FIRs shall provide 15 MINIT at the common FIR boundary, regardless of flight level;
5. For departures/arrivals from/to **(determined stations with flying time of 15 mins or less from the TJZS boundary)** shall remain within the TMAs route network;
6. Arrival to the **(determined TMAs/airports)** shall operate at FL310 or below; and
7. Aircraft entering KZNY airspace requesting Oceanic Clearance shall expect such from New York ARTCC.

4.2.3.2 Total Disruption due to severe weather.

The following communication shall be disseminated when it is anticipated that ATS service will be suspended due to anticipated severe weather:

“Due to the passage of Tropical Storm/Hurricane xxxxxx , No ATC Service will be available from, Date / Time **** to Date / Time **** UTC. The ATS Contingency Plan – Piarco FIR will be activated;

1. All flights that plan to operate within the Piarco FIR, during the period of No ATC Service, shall comply with the specific CRs and flight levels applicable as published within the ATS Contingency Plan – Piarco FIR;
2. ATS Units of adjacent FIRs will allocate only CRs and flight levels specified in the Contingency Plan; and
3. (Any other relevant information shall be included in the NOTAM body. SEE Annex 1, ATS Contingency Plan, Piarco FIR, paragraph 2.1..4)

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APPENDICES

Appendix 1

Piarco FIR ATM Contingency Checklist Concept

This section provides a series of checklists which serve as quick reference guides on procedures to be followed, and ATFM measures that can be implemented, to mitigate the impact of events that lead to, or has the potential to lead to, partial or total disruption of the provision of ATS.

The checklist is meant to provide guidance during a contingency event. Personnel may use some or all of the elements within the lists, or add other procedures and/or measures, not contained within the checklists, as the situation may require.

Most contingency events, whether they result in a major partial disruption or total disruption (ATC Zero), would follow the general pattern of steps depicted below:

Initial/preliminary actions: A.S.E.N.D.

A	**Analyze the situation, e.g. extent of disruption, whether partial or total**
S	Stabilize traffic, e.g. stopping/restricting traffic from adjacent FIRs and TMAs, ensuring, as far as practicable, that there is no conflicting traffic
E	Escalate internal Matrix
N	Notify relevant stakeholder and organization (ICAO, CERT, IATA) giving preliminary information
D	Duration – determine duration of event – proceed to follow-up actions

Follow-up actions: P.C.I.N.T.

P	**Plan, develop/formulate ATFM measures are formulate by AOCG**
C	CDM with stakeholders to advise and agree on measures

I	Implement, execute, monitor, and adjust where necessary, agreed measures while contingency
N	Notify stakeholders, via NOTAM and/or other platforms, on agreed upon measures and expected duration of contingency
T	Transition to contingency mode – (Limited operation or ATC Zero depending on situation

Appendix 2

Contingency Checklists – Partial Disruptions

1. Communication Failure Checklist

Major Air-to-ground communication failure

	Major Air-to-ground Communication Failure Checklist		
	ACC Actions	**Action Completed (Y/N**	**Associated ATFM Measures**
1	Analyze and determine the extent of coverage limitation		Due to VHF Air-to-ground communication failure within the Piarco FIR the following measures may be implemented:
2	Escalate the internal ATS Matrix ***Note: At this point the AOCG will be activated***		1) Where equipped, flights shall communicate via CPDLC or relay through New York Radio via HF Communications.
3	Perform the following Preliminary actions and notify adjacent ATS facilities and TMAs as appropriate. Preliminary actions for Major VHF Communication failure may include:		2) TMAs shall call-for-start-up and expect at least fifteen (15) MINIT for traffic entering the Piarco FIR from the same departure point, and on similar ATS Routes or Tracks.
	a) Coordinate with TMAs to stop/restrict entry of traffic into the Piarco FIR;		3) Flights can expect tactical re-routings as required;
	b) If necessary, the implement a temporary ground stop for departing traffic entering the Piarco FIR, departing from; TMAs, Georgetown, Maiquetia, Margarita, Juliana;		a) (List re-routings) b) (List Routing) c) ……..
	d) Notify ICAO, CADENA, CAR CERT, and		4) Adjacent ATS facilities shall provide Fifteen (15) MINIT

	Major Air-to-ground Communication Failure Checklist		
	ACC Actions	**Action Completed (Y/N**	**Associated ATFM Measures**
			at the common boundary for traffic entering the Piarco FIR at (XXXXX) regardless of flight level.
	e) Coordinate, with the adjacent ATS units, re-routes around the Piarco FIR as necessary		5) Departures from V.C Bird (TAPA), Guadeloupe, Pointe-a-Pitre (TFFR), Douglas-Charles TDPD and Canefield (TDCF) Dominica, transiting through the San Juan's FIR (TJZS), shall remain within the TMAs ATS airspace network.
4	Post urgent advisory on the CADENA Operational Information System (OIS) with preliminary information.		
5	Discuss and formulate, internally, ATFM measures, as necessary, to manage communication disruption/outage.		
6	Coordinate ATFM Measures adjacent ATS Units and TMAs		
7	Implement the use of CPDLC, or Relay through High Frequency communications as a supplement to, or an alternative to VHF communications, depending on severity of outage.		
8	Continually update the CERT and CADENA of all measures being applied		
9	Monitor, and adjust as necessary, ATFM measures		
10	Issue appropriate NOTAM and continue to update the information on the CADENA OIS.		

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2. Surveillance Disruption Checklist

	Surveillance Disruption Checklist		
	ACC Actions	**Action Completed (Y/N**	**Associated ATFM Measures**
1	Escalate the internal ATS matrix.		**Due to the unserviceability of the (xxxxx SSR/ADSB), the following measures are implemented:**
2	Determine areas of the airspace where coverage has been lost.		1) TMAs shall call-for-start-up or expect 15 MINIT from traffic entering the Piarco FIR.
3	For the affected sectors, transition to Non-surveillance procedures, in accordance wit**h current** directive "ATM System Degradation Procedures".		2) Flight can expect the following tactical routings as required: a. Routing 1 ……; b. Routing 2 ……; and/or c. …….
4	Initiate any preliminary actions, as necessary, to stabilize operations while transitioning to non-radar procedures within the area of no coverage: These may include, but not limited to, the following:		3) Adjacent ATS units shall ensure fifteen (15) minutes-in-trail (MINIT) regardless of altitude at the common FIR 4) Departures from V.C Bird (TAPA), Guadeloupe, Pointe-a-Pitre (TFFR), Douglas-Charles TDPD and Canefield (TDCF) Dominica, transiting through the San Juan's FIR (TJZS), shall remain within the TMAs ATS airspace network.
	a) Where practical, initially Stop/Restrict traffic from adjacent FIRs and TMAs from entering the airspace, until the situation has been stabilized;		5) Traffic from TJZS FIR arriving TFFR, TDPD, TDCF, TFFF TLPL, TLPC shall operate at or below FL310 or below.

	Surveillance Disruption Checklist		
	ACC Actions	**Action Completed (Y/N**	**Associated ATFM Measures**
	b) Coordinate re-routing, or holding of airborne traffic, until situation has been stabilized;		
	c) Implement temporary ground stops for traffic entering the Piarco FIR, departing from; TMAs, Georgetown, Maiquetia, Margarita, Juliana;		
	d) Keep and maintain situational awareness of airborne traffic within the Piarco FIR, e.g. electronic and printing of paper strips, FPL tracks, etc.;		
	e) Check the status and frequencies of Navigational Aids that may be used for separation, e.g. VOR; and		
	f) Implement any other measures as necessary		
5	Provide preliminary notification to adjacent ATS facilities and TMAs, stating the following:		
	a) Areas of surveillance coverage loss; and		
	b) Any preliminary measures being taken by Piarco during transition to non-radar operations.		
	Follow-up actions		
6	Determine/Formulate ATFM measures to manage the traffic. ***(Note: Please refer to the relevant column for guidance on ATFM measures)***		
7	Coordinate ATFM measures with adjacent FIRs and TMAs.		
8	Promulgate and publish the appropriate NOTAM advising of:		
	a) Areas of surveillance outage;		

	Surveillance Disruption Checklist		
	ACC Actions	**Action Completed (Y/N**	**Associated ATFM Measures**
	b) Estimated Time that the issue is expected to be rectified; and		
	c) TMMs to be implemented.		
9	Publish above information on the CADENA OIS, Contingency group chats or any other agreed-upon available means.		

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3. FDP and/or AMHS Checklist

	FDP or AMHS Disruption Checklist		
	ACC Actions	**Action Completed (Y/N**	**Associated ATFM Measures**
1	Notify adjacent ATS units and airline operators of the expected duration of the outage following consultation with AIM and CNS departments.		As Required
2	Request that adjacent FIRs, TMAs, and aircraft or airline operators, send FPLs, at least sixty (60) minutes prior to entry into Piarco FIR, via the following means, in order of priority: a) Fax; b) Email; and c) Chat feature of the CADENA OIS – (Push emails would be generated through this feature).		
	Note: FPLs may be available on other from other accessible systems for processing; e.g. CRONOS.		
3	Manually enter FPLs into the FDP database.		
4	Coordinate with the adjacent FIRs and TMAs any ATFM measure as necessary.		
5	Issue the appropriate NOTAM.		

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4. Reduced Staffing checklist

Reduced Staffing Checklist			
	ACC Actions	**Actions Completed Y/N**	**Associated ATFM Measures**
1.	ACC Unit Chief and/or ACC Supervisor will gather information on:		Due to reduced staffing, the following ATFM measures are implemented from, Date/Time to Date/Time
	a) Available staffing levels; and		1) TMAs shall call-for-start-up or expect 15 MINIT from traffic entering the Piarco FIR.
	b) The length of time that the reduced staffing situation, below minimum, expected to last.		2) TTPP and TTCP shall call the Piarco ACC for start-up approval.
2.	Escalate the internal ATS matrix advising of anticipated staff shortage beyond stipulated minimum. ***Note: At this stage the AOCG will be activate.***		3) Flight can expect tactical routings as may be required
3.	Coordinate/Collaborate with adjacent ACCs and TMAs, at least 120 minutes in advance, ATFM measures to be implemented due to staff shortage.		a) Routing one …….; b) Routing two …….; and/or c) ……
4.	Notify the following agencies, at least two (2) hours in advance of anticipated staff shortage		4) ATS units of adjacent FIRs shall provide 15 MINIT at the common FIR boundary, regardless of flight level.
	ICAO NACC Regional Office,		5) For departures/arrivals from/to (determined stations with flying time of 15 mins or less from the TJZS

Reduced Staffing Checklist			
	ACC Actions	**Actions Completed Y/N**	**Associated ATFM Measures**
			boundary) shall to remain within the TMAs.
	CADENA headquarters, and		6) Arrival to the (determined TMAs/airports) shall operate at FL310 or below.
	ICAO CAR CERT		7) Aircraft entering KZNY airspace requesting Oceanic Clearance shall expect such from New York ARTCC.
5.	Publish the relevant NOTAM		
6.	Publish an urgent advisory on the CADENA OIS		

Appendix 3

Contingency Checklists – Total disruption – No ATC Service

1. Simultaneous Air-to-ground and ground-to-ground communication failure checklist

	Air-to-ground and ground-to-ground Communication Failure Checklist		
	ACC Actions	**Action Completed (Y/N**	**Associated ATFM Measures**
	Preliminary action:		Initial ATFM measures would be used to stabilize the traffic and ensure adequate separation of aircraft during the transition to ATC zero. Due to total communication failure, the following ATFM measures may be implemented:
1	Escalate internal ATS matrix.		1) Adjacent ATS units and TMAs shall restrict/stop all flights from entering the Piarco FIR. *(Flights that are unable to avoid the Piarco FIR would be handled tactically at the discretion of the supervisor)*.
	Note: The AOCG will be considered activated once the previous step (1) is completed.		2) All equipped flights shall log on to and communicate with Piarco via CPDLC, and/or New York's HF

	Air-to-ground and ground-to-ground Communication Failure Checklist		
	ACC Actions	**Action Completed (Y/N**	**Associated ATFM Measures**
2	The AOCG shall notify the Management Personnel of adjacent ATS facilities and TMAs as soon as possible after the onset of the "No ATC Service" event.		3) During the period of transition to ATC zero, the following procedures would apply for overflights operating within the Piarco FIR: a) Overflights would maintain last cleared-to flight level and contact the accepting FIR as soon as practicable; b) On exiting the Piarco FIR, overflights would report at the common FIR boundary. c) Transfer of control would be at the common FIR boundary
3	The ATC supervisor, as far as practical, will advise the controllers in the adjacent ATS units and TMAs, of the total communication failure, using alternative voice communication means, e.g. dedicated cell phone.		4) During the period of transition to ATC zero, the following procedures would be conducted for arrivals to airports within the TMAs: a) Arrivals would proceed to the last cleared-to initial approach fix at the last cleared altitude; b) Contact the TMAs of arrival as soon as possible; c) TMAs will relay information in to Piarco on appropriate telephone/cell phone line d) Conflicting traffic would be relayed to aircraft via communication with the TMAs, or other available means; and e) Transfer of control would be at the common FIR/TMA boundary.
4	Stabilize traffic and ensure that all aircraft are separated using: a) Relay through New York Radio HFs, TMAs and adjacent ATS facilities, and b) Communications through CPDLC for aircraft so equipped.		
	Follow-up action:		

	Air-to-ground and ground-to-ground Communication Failure Checklist		
	ACC Actions	**Action Completed (Y/N**	**Associated ATFM Measures**
	The AOCG may assist with some follow-up actions as required, but in close coordination with the ATS operations. Follow-up action may include the following:		
5	Use any communication means to coordinate with the TMAs and adjacent ATS facilities to stop/restrict traffic from entering the Piarco FIR;		
6	Notify ICAO, CADENA, and CAR CERT;		
7	Coordinate with Adjacent ATS facilities and TMAs to advise aircraft, that plan to operate within the Piarco FIR, of the no ATC service contingency event;		
8	Develop and coordinate ATFM measures with adjacent ATS facilities for the management of flights that are already operating within the Piarco FIR, and for those flights that are 15 minutes or less flying time from the Piarco FIR and unable to re-route around the Piarco FIR. These measures may include, but not limited to: i. Re-routes within the Piarco FIR; ii. MINITs and/or MITs as required; and iii. Correct flight level for direction, or specific flight levels that would accommodate unrestricted descent for arrivals into the TMAs.		
9	During the transition period to ATC zero, Publish all measures via service message and CADENA OIS.		
10	If communications are not restored, arrange to transition to ATC Zero one hundred and twenty (120) minutes after the initial notification of the contingency event. ***Note: At this point, all traffic should avoid the Piarco FIR, or arrange to operate in accordance with the Piarco ATS Contingency Plan FLAS.***		
11	After transitioning to ATC Zero (FLAS), publish the appropriate NOTAM in accordance with section 2, paragraph 2.1.4, of the "TTCAA ANS ATS Contingency Plan Piarco FIR".		

	Air-to-ground and ground-to-ground Communication Failure Checklist		
	ACC Actions	**Action Completed (Y/N**	**Associated ATFM Measures**

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2. Evacuation of the ACC checklist

Scenario one – Evacuation of the main ACC and transfer of operations to stand-by ACC

	Evacuation of the ACC – Transfer of operations to stand-by ACC		
	ACC Actions	**Actions completed Y/N**	**Associated ATFM Measures**
1	Prior to evacuation, where practical, broadcast on appropriate frequencies that the ACC is being evacuated and contingency procedures have been initiated.		Initial ATFM Measures ATS service suspended to due to the EVACUATION of the Piarco ACC, from T#### to T####. Until resumption of service at stand-by ACC facility, the following measures shall apply to traffic operating within the Piarco FIR.
2	Vacate the ACC in accordance with the established Emergency Evacuation Procedures (for a sudden or immediate evacuation).		1) Adjacent ATS units and TMAs shall, as far as practicable, restrict/stop all flights from entering the Piarco FIR, until ATC service has been resumed at the Stand-by ACC;
3	When appropriate and safe to do so, escalate the internal ATS matrix.		2) Until ATC service is resumed, Overflights and traffic arriving TMA airports within the Piarco FIR shall: a) Continue in accordance to their Flight plan or the last cleared-to route and flight level, whichever is the latter,

	Evacuation of the ACC – Transfer of operations to stand-by ACC		
	ACC Actions	**Actions completed Y/N**	**Associated ATFM Measures**
			b) Transmit on emergency frequency (121.5MHz) and air-to-air frequency (123.45MHz), position, heading, route, and flight; and continue to monitor the frequencies, and c) Establish contact, as soon as possible, with the next ATS facility, and report current position, cleared flight level, the name and estimate of next position +1, the name and estimate for exit position/entry position from Piarco FIR/to transferring FIR and the estimate for the next position +1.
	Scenario one (1) – Transfer of operations to Standby ACC		3) Until ATC service is resumed, Arrivals to the TMAs shall: c) Proceed to the initial arrival fix in accordance with their flight plan, or as cleared by ATC, whichever is the latter, at the last cleared to flight level. d) At least three (3) minutes prior to descent to arrive airports into the TMAs, broadcast on the last assigned designated frequencies for Piarco, as well as 121.5 and 123.45, and the frequencies for the TMAs in question, the following message. *"ALL STATIONS (CALLSIGN), CURRENT POSITION IS (****), HEADING (**DEGREES MAGNETIC), FROM POSITION (*****) TO POSITION (*****) LEAVING FLIGHT LEVEL (NUMBER) FOR FLIGHT LEVEL (NUMBER)"*
4	AOCG will coordinate the transfer of operations with the relevant TTCAA personnel; DGCAA, HSSE, etc.		
5	From a safe location the AOCG will arrange to advise adjacent ATS units and the TMAs of the temporary suspension of ATS, and the duration, due to the evacuation.		
6	Transfer operations to Stand-by ACC		

	Evacuation of the ACC – Transfer of operations to stand-by ACC		
	ACC Actions	**Actions completed Y/N**	**Associated ATFM Measures**
7	The AOCG will arrange to send out the appropriate communications/NOTAMS reference limited operations from the stand-by ACC		

Scenario two – Evacuation of the main ACC whereby the transfer of operations is not an option.

	Evacuation of the ACC – stand-by ACC NOT available		
	ACC Actions	**Actions completed Y/N**	**Associated ATFM Measures**
1	Prior to evacuation, where practical, broadcast on appropriate frequencies that the ACC is being evacuated and contingency procedures have been initiated.		Initial ATFM Measures ATS service suspended to due to the EVACUATION of the Piarco ACC, from T#### to T####. Until resumption of service at stand-by ACC facility, the following measures shall apply to traffic operating within the Piarco FIR.
2	Vacate the ACC in accordance with the established Emergency Evacuation Procedures (for a sudden or immediate evacuation).		1) Adjacent ATS units and TMAs shall, as far as practicable, restrict/stop all flights from entering the Piarco FIR, until ATC service has been resumed at the Stand-by ACC;
3	When appropriate and safe to do so, escalate the internal ATS matrix. (The AOCG will be activated)		2) Until ATC service is resumed, Overflights and traffic arriving TMA airports within the Piarco FIR shall: a) Continue in accordance to their Flight plan or the last cleared-to route and flight level, whichever is the latter, b) Transmit on emergency frequency (121.5MHz) and air-to-air frequency (123.45MHz), position,

	Evacuation of the ACC – stand-by ACC NOT available		
	ACC Actions	**Actions completed Y/N**	**Associated ATFM Measures**
			heading, route, and flight; and continue to monitor the frequencies, and c) Establish contact, as soon as possible, with the next ATS facility, and report current position, cleared flight level, the name and estimate of next position +1, the name and estimate for exit position/entry position from Piarco FIR/to transferring FIR and the estimate for the next position +1.
	Scenario two (2) – the transfer of operation to standby ACC is NOT an option – Transition to ATC Zero		3) Until ATC service is resumed, Arrivals to the TMAs shall: e) Proceed to the initial arrival fix in accordance with their flight plan, or as cleared by ATC, whichever is the latter, at the last cleared to flight level. f) At least three (3) minutes prior to descent to arrive airports into the TMAs, broadcast on the last assigned designated frequencies for Piarco, as well as 121.5 and 123.45, and the frequencies for the TMAs in question, the following message. *"ALL STATIONS (CALLSIGN), CURRENT POSITION IS (****), HEADING (**DEGREES MAGNETIC), FROM POSITION (*****) TO POSITION (*****) LEAVING FLIGHT LEVEL (NUMBER) FOR FLIGHT LEVEL (NUMBER)"*
4	From a safe location the AOCG will arrange to advise adjacent ATS units and the TMAs of the ACC evacuation and coordinate to stop/restrict traffic from entering the Piarco FIR.		4) All other traffic should avoid/re-route around the Piarco FIR.
5	During the transition to ATC zero, the AOCG shall remotely coordinate ATFM measures with adjacent		

	Evacuation of the ACC – stand-by ACC NOT available		
	ACC Actions	**Actions completed Y/N**	**Associated ATFM Measures**
	ATS units, TMAs, CADENA, airline agencies and other relevant stakeholders to ensure that: a) All airborne flights within the Piarco FIR operate and exit the Piarco FIR safely; and b) All other flights are re-routed safely around the Piarco FIR		
6	The AOCG shall coordinate with all relevant parties to activate the "***ATS Contingency Plan – Piarco FIR"*** for No-ATC service, no less than one hundred and twenty (120) minutes after the evacuation of the Piarco ACC.		**Notification after Transition to the "*ATS Contingency Plan – Piarco FIR"* for No-ATC service**
7	The AOCG shall arrange to Publish the relevant NOTAM, no less the one hundred and twenty (120) minutes prior to the time of activation of the "***ATS Contingency Plan – Piarco FIR"*** for No-ATC service.		Due to evacuation of the Piarco ACC, the ***"ATS Contingency Plan – Piarco FIR"*** is activated from (date/Time) to (date/time
			1) All Traffic should either avoid the Piarco FIR or plan to operate in accordance with the CRs associated with the "ATS Contingency Plan Piarco FIR".

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3. Severe Weather Checklist – Partial and Total disruption to ATS

	Severe Weather Checklist for Partial and Total disruption to ATS		
	ACC Actions	**Actions Completed Y/N**	**Associated ATFM Measures**
1	Escalate the internal ATS matrix and provide information of the circumstance(s) that has/(have) the potential to result in major partial disruption or ATC zero. ***Note: For tropical***		***Note: The severe weather may result in a variety of constraints such as: reduced staffing, reduced surveillance capability, reduced air-to-ground and/or ground-to-ground capability, or a***

	Severe Weather Checklist for Partial and Total disruption to ATS		
	ACC Actions	**Actions Completed Y/N**	**Associated ATFM Measures**
	cyclones the activation of the AOCG and the planning process may commence days in advance;		***combination of one or more of the mentioned constraints. ATFM measures would therefore be dependent on type of limited service that can be provided based on the available human and equipment assets. The ATFM measures in this checklist give general guidance. The reader can refer to other checklist in this document to supplement the measures on this checklist.***
			Due to the passage of Tropical Storm/Hurricane xxxxxx, the following ATFM measures are implemented from Date/Time xxxx to Date/time xxxx: (Note: limited
2	Gather information on the length of time that Air Navigation Services are anticipated to be partially disrupted or suspended;		1) TMAs shall call-for-start-up or expect 15 MINIT from traffic entering the Piarco FIR. 2) TTPP and TTCP shall call the Piarco ACC for start-up approval. 3) Flight can expect tactical routings as may be required a) Routing one …….; b) Routing two …….; and/or c) …… 4) ATS units of adjacent FIRs shall provide 15 MINIT at the common FIR boundary, regardless of flight level. 5) For departures/arrivals from/to ***(determined stations with flying time of 15 mins or less from the TJZS boundary)*** shall remain within the TMAs route network. 6) Arrival to the ***(determined TMAs/airports)*** shall operate at FL310 or below.
3	Notify following stakeholders, as far as practicable, at least five (5) hours in advance, of the time that ATC services would be partially disrupted/suspended: a) Adjacent ATS Units and TMAs, b) ICAO NACC Regional Office, c) ICAO Caribbean Emergency and Response Team, d) CADENA headquarters.		
	For an anticipated Major Partial Disruption resulting in limited service		
4	The AOCG will coordinate with the TTCAA's ANS Contingency Coordinator and Management Committees to ensure/provide the following: a) Adequate resources for available essential staff, such as: i. Transport to and from the operations, ii. Accommodations and meals where necessary, and		

	Severe Weather Checklist for Partial and Total disruption to ATS		
	ACC Actions	**Actions Completed Y/N**	**Associated ATFM Measures**
	iii. Other resources that may be deemed necessary for the continuity of operations. b) Availability of additional staff from other departments (rated and unrated) to provide support accordingly, c) That upper management (TTCAA Board, DGCA, TTCAA Executives) are continually kept informed of all developments during the contingency event, and d) The securing of all TTCAA internal and external assets during the duration of severe weather, e.g. powering down of VHF High-sites.		7) Aircraft entering KZNY airspace requesting Oceanic Clearance shall expect such from New York ARTCC.
5	The AOCG, which will include the ACC/APP supervisor, shall assist in coordinating any ATFM measures for during major partial disruptions;		
6	The AOCG would assist in formulating and publishing the relevant NOTAMS.		
7	The AOCG will use all available means to keep the stakeholders continually updated of the situations, e.g. a) Affected Airports closing and opening times, b) Status of Airport and ATC services, and c) Any other relevant information.		
	For an Anticipated Disruption resulting in ATC Zero		
8	Escalate the internal ATS matrix. ***Note: As the event was anticipated, the AOCG would have already been activated.***		**Notification after Transition to the *"ATS Contingency Plan – Piarco FIR"* for No-ATC service**
9	Notify the following stakeholders, as far as practicable, at least five (5) hours in advance, of the time that ATC services would be **suspended**: a) Adjacent ATS Units and TMAs, b) ICAO NACC Regional Office, c) ICAO Caribbean Emergency and Response Team, and		Due to the passage of Tropical Storm/Hurricane xxxxx, the Piarco ACC will be evacuated and no ATS or alerting services would be provided. As a result, the ***"ATS Contingency Plan – Piarco FIR"*** will be activated from (date/Time) to (date/time)

	Severe Weather Checklist for Partial and Total disruption to ATS		
	ACC Actions	**Actions Completed Y/N**	**Associated ATFM Measures**
	d) CADENA headquarters		
10	The AOCG will coordinate with the TTCAA's ANS Contingency Coordinator and Management Committees to ensure the securing of all the TTCAA's internal and external assets, e.g the powering down of the VHF High-sites;		1) All Traffic should either avoid the Piarco FIR or plan to operate in accordance with the CRs associated with the "ATS Contingency Plan Piarco FIR". 2) All operators should consider the impact of weather on CRs and avoid the Piarco FIR accordingly. 3) For further information, contact a) Name, Email, Phone number, b) Name, Email, Phone number, and c) …….
11	The AOCG will Publish or assist in publishing the corresponding NOTAM in accordance with the guidance depicted in the "ATS Contingency Plan – Piarco FIR". The relevant NOTAM shall, as far as practicable, be disseminated no less than four (4) hours prior to the activation of the ATS Contingency Plan – Piarco FIR, for ATC zero.		
12	The AOCG will assist the operations to transition to ATC Zero, prior to all staff evacuating the ACC. The AOCG shall: a) Coordinate with adjacent ATS units and TMAs to stop/restrict all traffic from entering the Piarco FIR at three (3) hours prior to the activation of the ATS Contingency Plan- Piarco FIR. ***Note: during this time all staff will take the necessary steps to evacuate the facility, while Piarco transitions to ATC zero.*** b) Assist with the evacuation of the facility and coordinate with HSSE and all relevant TTCAA to account for all ANS staff.		

Appendix 4

4.3. Lists of Contacts

1. TTCAA AOCG

Name	Position	Phone	Email
Mr. Rohan Garib	Executive Manager of the Air Navigation Services	1 868-668-8222 Ext. 2501	rgarib@caa.gov.tt
Mr. Riaaz Mohammed	Manager Air Navigation Services Planning and Development	1 868-668-8222 Ext. 2544	rmohammed@caa.gov.tt
Mr. Ian Gomez	Manager Air Traffic Services and Air Navigation Services Safety (Ag.)	1 868-668-8222 Ext. 2530	igomez@caa.gov.tt
Mr. Neil Ali	Manager Aeronautical Information Management	1 868-668-8222 Ext. 2559	nali@caa.gov.tt
Mr. Steve Saroop	Manager Communication, Navigation & Surveillance (Ag.)	1 868-668-8222 Ext. 2502	ssaroop@caa.gov.tt
Mr. Ashley Lalman	Unit Chief - ACC/APP	1 868-668-8222 Ext. 2562	alalman@caa.gov.tt
Mr. Ricky Bissessar	Unit Chief, AIM Operations	1 868-668-8222 Ext. 2540	rbissessar@caa.gov.tt
Mr. Kent Ramnarace-Singh	Unit Chief, Planning & Technical Evaluation Unit	1 868-668-8222 Ext. 2532	krsingh@caa.gov.tt
Mr. Curtis Fraser	Unit Chief, ANSPD Quality	1 868-668-8222 Ext. 2560	cfraser@caa.gov.tt
Mr. Clint Balfour	Air Traffic Services Supervisor	1 868-669-4852 1 868-668-8222 Ext. 2533	cbalfour@caa.gov.tt

Mr. Satnarine Maharaj	Communication Navigation Surveillance Supervisor	1 868-668-8222 Ext. 2565	satnarinemaharaj@caa.gov.tt

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2. TTCAA Internal Contacts

Name	Position	Phone	Email
Mr. Cary Price	Director General TTCAA	1 868-668-8222 Ext. 2437	cprice@caa.gov.tt
Mr. Rohan Garib	Executive Manager Air Navigation Services	1 868-668-8222	rgarib@caa.gov.tt
Mr. Felix Pearson	Executive Manager Cooperate Services	1 868-668-8222 Ext. 2193	fpearson@caa.gov.tt
Mr. Kingsley Herreira	Executive Manager Safety Regulation Division	1 868-668-8222 Ext. 2122	kherreira@caa.gov.tt
Mr. Ian Gomez	Manager Air Traffic Services & Air Navigation Services Safety (Ag.)	1 868-668-8222 Ext. 2530	igomez@caa.gov.tt
	Piarco Area and Approach Control Center	1 868-669-4852 1 868-669-6180 1 868-669-6181	piarcoacc@caa.gov.tt
	Piarco Tower	1 868-669-4380	
	Piarco AIM Operations	1 868-669-4128 18682713217	ais@caa.gov.tt

3. External Contacts

State/Intl. Org.	POC	Telephone/Fax	Email
Antigua and Barbuda V.C. Bird TMA	Chief of ATS	Telephone: 1 268 562 0301/2 1 268 764 3328 Fax: 1 268 462 4703	shenneth.phillips@ab.gov.ag
Barbados Grantley Adams TMA	Chief ATC Officer	Telephone: 1 (246) 536 3602 Twr 1 246 428 0956 Fax: 1 (246) 428 2539	glyne.blanchette@barbados.gov.bb
Cabo Verde SAL OAC	Chief of ATC SAL ACC	Telephone: + 011-238-241-4151 Fax: + 238 241 12 19	atcontrol@asa.cv
French Guiana Rochambeau ACC	Direction Générale de L'aviation Civile	Telephone: 011 596 596 422 489 Mobile: 011 596 696 736 190 Fax: + 01 58 09 35 35	jean-luc.bonnaire@aviation-civile.gouv.fr
Grenada Maurice Bishop TMA	Manager ATS	Telephone: 1(473) 534 5412 Twr 1 473 444 4114 Fax: 1 473 444 4838	dbaptiste@gaa.gd
Guadeloupe, French Antilles Guadeloupe TMA	Direction Générale de L'aviation Civile	Telephone: 011 596 596 422 489 Mobile: 011 596 696 736 190 Fax: + 01 58 09 35 35	jean-luc.bonnaire@aviation-civile.gouv.fr

State/Intl. Org.	POC	Telephone/Fax	Email
Guyana Georgetown ACC	Director ANS	Telephone: + 592 261 2217 Mobile + 592 608 6380 Fax: + 592 261 2293	rsamaroo@gcaa-gy.org
IATA	FAA Liaison Desk	1 786 536 3476 1 305 399 3930 +55 11 993800953 + 55 11 21874236	faa-liaison@iata.org abigantusj@iata.org pereiraj@iata.org
ICAO NACC	Regional Officer ATM/SAR	+52 55 3643 9265	emendez@icao.int
Martinique, French Antilles **Martinique TMA**	Direction Générale de L'aviation Civile	Telephone: 011 596 596 422 489 Mobile: 011 596 696 736 190 Fax: + 01 58 09 35 35	jean-luc.bonnaire@aviation-civile.gouv.fr
Portugal Santa Maria ACC	Santa Maria Oceanic FIR	Telephone: + 011 351-296-866-860. 011-351-296-886-861 Fax: + 351 296 86116	dopatl@nav.pt u.smaoacc@nav.pt
St. Lucia **Hewanorra TMA**	Manager ATS Saint Lucia Air and Sea Ports Authority	Telephone: 1 758 457 6167 EXT 7014 Twr 1 758 452 2426 Mobile: 1 758 728 4854	amy.charles@slaspa.com kendell.peter@slaspa.com
St. Vincent and The Grenadines Argyle TMA	Senior Air Traffic Controller	Telephone: 1 784 458 4011 Twr 1 784 456 5994 Fax: (784) 458 4786	catcsvg@gmail.com
Senegal Dakar ACC	Director of Civil Aviation	Telephone: 011-221-338-200-705 Fax: (221)338207495	bassedia@asecna.org diawism@asecna.org

State/Intl. Org.	POC	Telephone/Fax	Email
Suriname Paramaribo ACC	Department of Civil Aviation	Telephone: Acc 011 597 325 203 +597 875 9381 Fax: + 597 498901	cat.atmcns@tct.gov.sr radha_atwaroe@hotmail.com
Trinidad and Tobago TTCAA - ANS	Executive Manager ANS	Telephone: 1 868 669 4806 Fax: 1 868 669 5397	rgarib@caa.gov.tt
Trinidad and Tobago TTCAA - Piarco ATS	Manager ATS	Telephone: 1 868 669 4852 1 868 669 4806 Fax: 1 868 669 0635 Mobile: 18687234862	igomez@caa.gov.tt
United States New York OAC	Manager of Operations	Telephone: 1 631 468 1099	shawn.g.knight@faa.gov
United States San Juan ACC	Support Manager Miami District	Telephone: 1 (787) 253 8664 1 (787) 253 8731/32 Mobile: (787) 529 8952	wilfredo.cruz-rivera@faa.gov
Venezuela Maiquetia ACC	Carlos Alberto Armas Rojas Junel Javier Martinez Duarte	Telephone: 58 424 347 4208 58 412 2301749 Acc 011 582 123 552 216	Calos.armas@inac.gov.ve j.martinez@inac.gov.ve

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Annex 1

ATS Contingency Plan – Piarco FIR

TRINIDAD AND TOBAGO CIVIL AVIATION AUTHORITY

AIR NAVIGATION SERVICES

DIVISION

AIR NAVIGATION SERVICES

ATS Contingency Plan – Piarco FIR

(DOC: ANSD/ATSCP/001/2023-R)

Submitted by: Barry Phirangee – ATMO-PTEU
Report Date: November 28, 2023

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Table of Contents

1. OBJECTIVE

1.1 This Contingency Plan contains arrangements that ensures the continued safety of Air Navigation in the event of partial or total disruption of ATS within the Piarco FIR and is related to ICAO Annex 11 - ATS, Fifteenth Edition, July 2018 Chapter 2, paragraph 2.32.

1.2 This Contingency Plan is designed to provide available alternative CRs in the upper airspace by using existing ATS RNAV routes that will allow aircraft to fly through, or avoid the Piarco FIR.

2. ATM

2.1 ATS Responsibilities

2.1.1 This contingency plan directly affects the following FIRs:

a) Dakar Oceanic ACC– (GOOO)
b) Georgetown ACC- (SYGC)
c) Maiquetia ACC-(SVZM)
d) New York Oceanic ARTCC– (KZWY)
e) Paramaribo ACC- (SMPM)
f) Rochambeau ACC-(SOOO)
g) Sal Oceanic ACC – (GVSC)
h) San Juan ACC- (TJZS)
i) Santa Maria Oceanic ACC – (LPPO)

2.1.2 During an ATC Zero event, aircraft shall enter the Piarco FIR from adjacent FIRs via CRs using the FLAS. All other traffic shall circumvent the Piarco FIR or remain within the vertical and lateral limits of the defined airspace of the TMAs within the Piarco FIR.

2.1.3 CRs are designed to maximize the use of existing RNAV routes and CNS services.

2.1.4 In the event that ATS cannot be provided within the Piarco FIR, the Trinidad and Tobago Civil Aviation Authority (TTCAA), through the Piarco Area Control Centre (ACC) shall publish or cause to be published, the corresponding NOTAMs indicating the following:

a) Time and date of the beginning of the Contingency Measures;
b) RNAV routes available for over-flying traffic and tactical procedures for flight arriving and departing airports within Piarco's airspace;
c) Details of the facilities and services available or not available and any limits on the provision of ATS (e.g. ACC, TMA, APP, TWR and FIS), including an expected date/time of restoration of services if available;
d) Information on the provisions made for alternate services;
e) Procedures to be followed by adjacent ATS Units;
f) Procedures to be followed by pilots; and
g) Any other details, with respect to the disruption, and actions being taken that aircraft operators may find useful.

2.1.5 In the event that the Piarco ACC is unable to issue the NOTAM indicating a condition of ATC Zero, a request will be made to , the ICAO North American, Central American & Caribbean (NACC) Regional Office and/or the CAR CERT to assist in coordinating the dissemination of the relevant information.

2.1.6 Trinidad and Tobago shall also promulgate operational notifications via the CANSO CADENA OIS. Notifications detailing ATFM measures implemented to balance the demand and capacity within the Piarco FIR will be available at www.cadenaois.org.

2.2 Separation

2.2.1 Separation criteria will be applied in accordance with the ICAO PANS-ATM, Doc 4444 and the Regional Supplementary Procedures (Doc 7030).

2.2.2 The applicable minimum longitudinal separation entrail between aircraft on these respective routes, at the same flight level, shall be fifteen (15) minutes.

2.3 Level Restrictions

2.3.1 Where possible, aircraft on long-haul international flights shall be given priority with respect to cruising levels. Requests for level changes while in Piarco's airspace shall not be considered.

2.3.2 It is recommended that NON-RVSM aircraft should avoid the Piarco FIR ATC Zero airspace.

2.4 Other Measures

2.4.1 Other measures related to the ATC Zero event and the implementation of the Contingency Plan within the Piarco FIR may be taken as follows:

a) Implementation of ATFM;

b) Delay or suspension of General Aviation Instrument Flight Rules (IFR) Operations; and

c) Delay or suspension of Commercial IFR Operations.

3. TRANSITION TO CONTINGENCY PLAN

3.1 During times of uncertainty, aircraft operators should be prepared for a possible change in routing while en-route. Familiarization of the CRs as outlined in this Contingency Plan, as well as what may be promulgated by Trinidad and Tobago (Piarco ACC) via NOTAM, Aeronautical Information Publication (AIP) or CADENA OIS; is necessary.

3.2 Operators should also familiarize themselves with pre-established Planned Airway System Alternatives (PASA) routes, coordinated and managed by CADENA to be able to efficiently circumvent the Piarco FIR, if so desired. Requests to activate these route mechanisms can be made via www.cadena.ois.

3.3 In the event of airspace closure that has not been promulgated, Piarco ATS shall, if possible, broadcast or cause to be broadcast to all aircraft in the airspace under its jurisdiction, what airspace is being closed or affected and to stand by for any further instructions.

3.4 Piarco ATS recognizes that when closures of airspace or airports are promulgated, individual airlines might have different company requirements as to their alternate routings. In that regard,

Piarco ATS shall be alert to respond to any request by aircraft and react commensurate with safety.

4. TRANSFER OF CONTROL AND COORDINATION

4.1 As stated in existing Letters of Agreement (LoAs), the transfer of control and communications shall be at the common FIR boundary.

4.2 Piarco ACC, along with adjacent ATS units, should keep in view current coordination requirements, in the event of contingency operations or short notice of airspace closure.

5. PILOTS AND OPERATOR PROCEDURES

5.1 All aircraft shall file on routes as contained in Section 9.1 of this contingency plan. All aircraft shall be assigned a Flight Level in accordance with the FLAS as contained in Section 9.1 of this contingency plan. Aircraft shall be required to maintain the issued Flight Level at least ten (10) minutes prior to entering the Piarco FIR.

5.2 Pilots shall report their estimated times over entry and exit points of the Piarco's FIR, prior to entering Piarco's airspace, to the transferring ACC. Pilots shall arrange their flight to enter and exit Piarco's airspace within tolerance of three (3) minutes of the estimated time given.

5.3 Pilots shall maintain the last assigned flight level and Mach number as issued by the transferring ACC while in Piarco's airspace. Pilots shall also periodically broadcast their assigned Flight Levels and estimated times over entry and exit points of Piarco's FIR on VHF emergency frequency 121.5 MHz and on pilots' air-to-air frequency 123.45 MHz.

5.4 Pilots shall continuously guard the VHF emergency frequency 121.5 MHz and on pilots' air-to-air frequency 123.45 MHz, prior to, and within the Piarco FIR during contingency operations.

5.5 Pilots shall operate their transponder at all times during flight within the Piarco FIR. Transponders should be set on a discrete code assigned by ATC or select code 2000 if ATC has not assigned a code.

5.6 Pilots shall contact the receiving ACC at least ten (10) minutes prior to exiting the Piarco FIR. Additionally, if the receiving ACC provides and Automatic Dependent Surveillance-Contract/CPDLC (ADS-C/CPDLC) service, pilots should log on to and establish contact with the receiving ACC at least 10 minutes prior to exiting the Piarco FIR.

5.7 Pilots are to maintain a high level of awareness during an ATC Zero contingency where the FLAS is implemented. In order to enhance pilots' situational awareness, pilots shall also keep all navigational and anti-collision lights continually on while in Piarco's airspace.

6. OVERFLIGHT APPROVAL

6.1 Where required, Aircraft Operators shall obtain over-flight approval from States for flights operating over sovereign territory under their jurisdiction.

6.2 In a contingency situation, flights may be rerouted at short notice and it may not be possible for operators to give the required advanced notice in a timely manner to obtain approval.

7. CONTINGENCY UNIT

7.1 The ATM National Contingency Unit assigned the responsibility of monitoring developments that may dictate the enforcement of the Contingency Plan and coordination of contingency arrangements is:

Name of Agency: TTCAA – Air Navigation Services Division

Contact Person: Rohan Garib – Executive Manager Air Navigation Services (EMANS)

Telephone: (1-868) 669 – 4806

Mobile: (1-868) 689 – 4889

Piarco ACC (1-868) 669 – 4852

Fax: (1-868) 669 – 5239

Email: rgarib@caa.gov.tt

7.2 The National Contingency Unit (Office of the EMANS) will liaise with the ICAO NACC Regional Office.

7.3 The ICAO NACC Regional Office will:

a) Closely monitor the situation and coordinate with all affected States and the IATA Regional Office, so as to ensure Air Navigation Services (ANS) are provided to international aircraft operations in the CAR Region;

b) Take note of any incidents reported and take appropriate actions;

c) Provide assistance as required on any issue with the Civil Aviation Administrations involved in the Contingency Plan; and

d) Keep the President of the Council of ICAO, the Secretary General, the Chief Regional Affairs Officer, the Director of the Air Navigation Bureau and the Chief of the ATM Section continuously informed on developments, including activation of the Contingency Plan.

8. LIST OF POINTS OF CONTACT OF ALL CONCERNED STATES/ TERRITORIES/ INTERNATIONAL ORGANIZATIONS, IATA AND ICAO

STATE/INTL. ORG.	P.O.C.	TELEPHONE/FAX	E-MAIL
ANTIGUA AND BARBUDA V.C. Bird TMA	Chief of ATS	Telephone: 1 268 562 0301/2 1 268 764 3328 Fax: 1 268 462 4703	shenneth.phillips@ab.gov.ag
BARBADOS Grantley Adams TMA	Chief ATC Officer	Telephone: 1 (246) 536 3602 Twr 1 246 428 0956 Fax: 1 (246) 428 2539	glyne.blanchette@barbados.gov.bb
CABO VERDE SAL OAC	Chief of ATC SAL ACC	Telephone: + 011-238-241-4151 Fax: + 238 241 12 19	atcontrol@asa.cv
FRENCH GUIANA Rochambeau ACC	Direction Générale de L'aviation Civile	Telephone: 011 596 596 422 489 Mobile: 011 596 696 736 190 Fax: + 01 58 09 35 35	jean-luc.bonnaire@aviation-civile.gouv.fr
GRENADA Maurice Bishop TMA	Manager ATS	Telephone: 1(473) 534 5412 Twr 1 473 444 4114 Fax: 1 473 444 4838	dbaptiste@gaa.gd

STATE/INTL. ORG.	P.O.C.	TELEPHONE/FAX	E-MAIL
GUADELOUPE, FRENCH ANTILLES Guadeloupe TMA	Direction Générale de L'aviation Civile	Telephone: 011 596 596 422 489 Mobile: 011 596 696 736 190 Fax: + 01 58 09 35 35	jean-luc.bonnaire@aviation-civile.gouv.fr
GUYANA Georgetown ACC	Director ANS	Telephone: + 592 261 2217 Mobile + 592 608 6380 Fax: + 592 261 2293	rsamaroo@gcaa-gy.org
IATA	FAA Liaison Desk	1 786 536 3476 1 305 399 3930 +55 11 993800953 + 55 11 21874236	faa-liaison@iata.org abigantusj@iata.org pereiraj@iata.org
ICAO NACC	Regional Officer ATM/SAR	+52 55 3643 9265	emendez@icao.int
MARTINIQUE, FRENCH ANTILLES Martinique TMA	Direction Générale de L'aviation Civile	Telephone: 011 596 596 422 489 Mobile: 011 596 696 736 190 Fax: + 01 58 09 35 35	jean-luc.bonnaire@aviation-civile.gouv.fr
PORTUGAL Santa Maria ACC	Santa Maria Oceanic FIR	Telephone: + 011 351-296-866-860. 011-351-296-886-861 Fax: + 351 296 86116	dopatl@nav.pt u.smaoacc@nav.pt
ST. LUCIA Hewanorra TMA	Manager ATS Saint Lucia Air and Sea Ports Authority	Telephone: 1 758 457 6167 EXT 7014 Twr 1 758 452 2426 Mobile: 1 758 728 4854	amy.charles@slaspa.com kendell.peter@slaspa.com

STATE/INTL. ORG.	P.O.C.	TELEPHONE/FAX	E-MAIL
ST. VINCENT AND THE GRENADINES Argyle TMA	Senior Air Traffic Controller	Telephone: 1 784 458 4011 Twr 1 784 456 5994 Fax: (784) 458 4786	catcsvg@gmail.com
SENEGAL DAKAR ACC	Director of Civil Aviation	Telephone: 011-221-338-200-705 Fax: (221)338207495	bassedia@asecna.org diawism@asecna.org
SURINAME Paramaribo ACC	Department of Civil Aviation	Telephone: Acc 011 597 325 203 +597 875 9381 Fax: + 597 498901	cat.atmcns@tct.gov.sr radha_atwaroe@hotmail.com
TRINIDAD AND TOBAGO TTCAA - ANS	Executive Manager ANS	Telephone: 1 868 669 4806 Fax: 1 868 669 5397	rgarib@caa.gov.tt
TRINIDAD AND TOBAGO TTCAA - Piarco ATS	Manager ATS	Telephone: 1 868 669 4852 1 868 669 4806 Fax: 1 868 669 0635 Mobile: 18687234862	igomez@caa.gov.tt
UNITED STATES New York OAC	Manager of Operations	Telephone: 1 631 468 1099	shawn.g.knight@faa.gov
UNITED STATES San Juan ACC	Support Manager Miami District	Telephone: 1 (787) 253 8664 1 (787) 253 8731/32 Mobile: (787) 529 8952	wilfredo.cruz-rivera@faa.gov
VENEZUELA Maiquetia ACC	Carlos Alberto Armas Rojas Junel Javier Martinez Duarte	Telephone: 58 424 347 4208 58 412 2301749 Acc 011 582 123 552 216	Calos.armas@inac.gov.ve j.martinez@inac.gov.ve

9. REROUTING SCHEME

9.1 In the event of a complete Air-to-Ground/Ground-to-Air and Point-to-Point Communications Failure at the Piarco ACC, aircraft operators shall file their FPLs using the CR listed in the Scheme appended to this Sub-regional ATM Contingency Plan in order to ensure receipt of Air Navigation Services.

Present ATS Route	Contingency Route (CR) Designator	Contingency Routes Available	Applicable Flight Level	Remarks	FIRs Affected
MEGIR-UP671-POS-UP671 -ROVBA-DCT-MUNTR	CR01	MEGIR-UP671-POS- UP671 - ROVBA - DCT-MUNTR and Reverse	FL390. FL360.	All traffic shall cross the SVZM/TTZP/KZNY boundaries at and maintaining the prescribed CR and stated Flight Level.	SVZM/TTZP/KZNY
ITEGO-UP533-CITRS	CR02	ITEGO- UP533-CITRS and Reverse	FL370. F360.	All traffic shall cross the SVZM/TTZP/KZNY boundaries at and maintaining the prescribed CR and stated Flight Level.	SVZM/TTZP/KZNY

Present ATS Route	Contingency Route (CR) Designator	Contingency Routes Available	Applicable Flight Level	Remarks	FIRs Affected
ANADA-UL452-MINDA	CR03	ANADA-UL452-MINDA and Reverse	FL310/ FL290. FL340/ FL380.	All traffic shall cross the TJZS/TTZP/SYGC boundaries at and maintaining the prescribed CR and stated Flight Level.	TJZS/TTZP/SYGC
ILURI-UL454-TRAPP	CR04	ILURI-UL454-TRAPP and Reverse	FL310/FL290 FL340/FL380.	All traffic shall cross the TJZS/TTZP/SMPM boundaries at and maintaining the prescribed CR and stated Flight Level.	TJZS/TTZP/SMPM
ELJEZ-UN669-ONGAL	CR05	ELJEZ-UN669-ONGAL and Reverse	FL320. FL330.	All traffic shall cross the KZNY/TTZP/SVZM boundaries at and maintaining the prescribed CR and Stated Flight Level	KZNY/TTZP/SVZM

Present ATS Route	Contingency Route (CR) Designator	Contingency Routes Available	Applicable Flight Level	Remarks	FIRs Affected
IPSIN DCT TODIS	CR06	IPSIN DCT TODIS and Reverse	FL360 FL390	All Traffic shall cross the LPPO/TTZP/SOOO boundaries at and maintaining the prescribed CR and stated Flight Level.	LPPO/TTZP/SOOO
IRELA-UL435-BUTUX	CR07	IRELA-UL435-BUTUX and Reverse	FL370. FL340	All traffic shall cross the GOOO /TTZP/ KZNY boundaries at and maintaining the prescribed CR and stated Flight Level.	GOOO/TTZP/KZNY
PUBLI-DCT-TUTLO	CR08	PUBLI-DCT-TUTLO and Reverse	FL350. FL300.	All traffic shall cross the SOOO /TTZP/ LPPO-GVSC-GOOO boundaries at and maintaining the prescribed CR and stated Flight Level.	SOOO /TTZP/ LPPO-GVSC-GOOO

Present ATS Route	Contingency Route (CR) Designator	Contingency Routes Available	Applicable Flight Level	Remarks	FIRs Affected
TRAPP-DCT-BUTUX	CR09	TRAPP-DCT-BUTUX and Reverse	FL330 FL360	All traffic shall cross the SMPM/TTZP/KZNY boundaries at and maintaining the prescribed CR and stated Flight Level.	SMPM/TTZP/KZNY
NORWI-UL462 - LAMKN	CR10	NORWI-UL462 - LAMKN and Reverse	FL300 FL350.	All traffic shall cross the SYGC /TTZP/ TJZS boundaries at and maintaining the prescribed CR and stated Flight Level.	SYGC /TTZP/ TJZS

List of Appendices

Appendix 1 - Visual representation of the FLAS

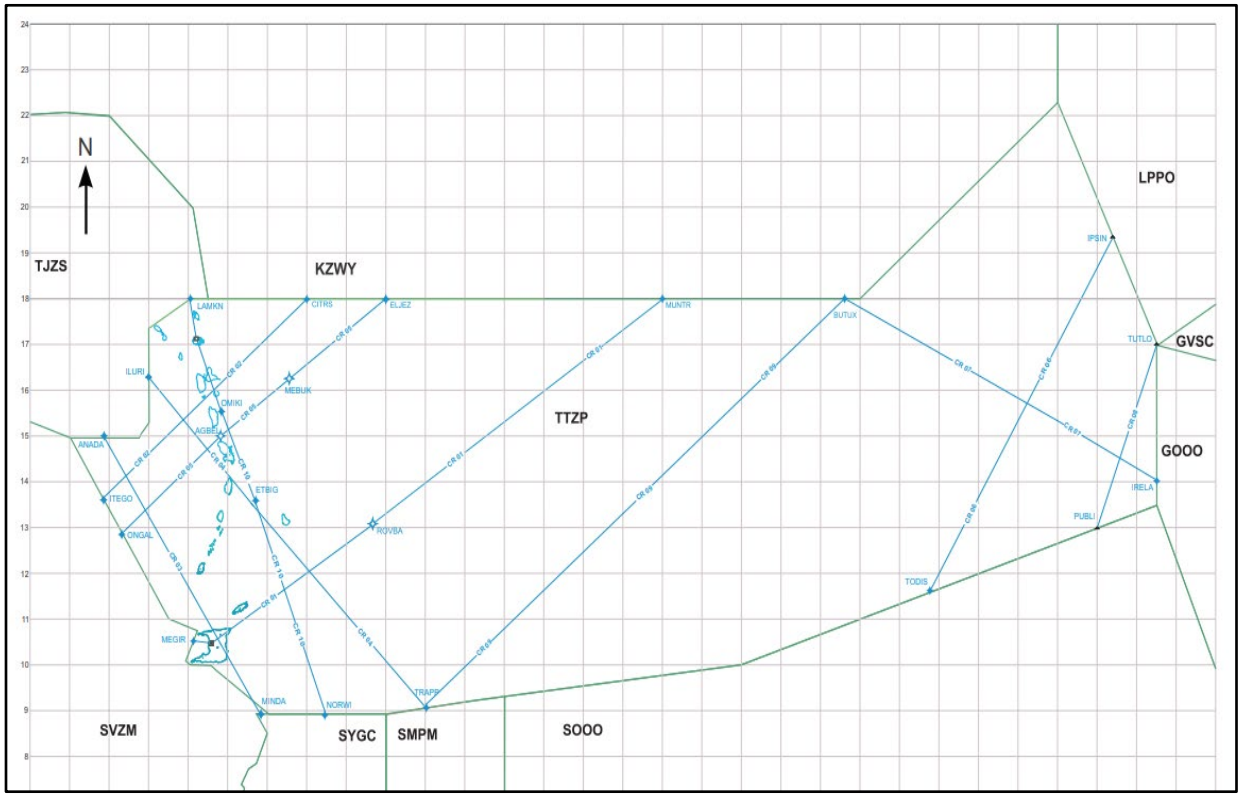

Figure 1 Visual representation of the FLAS

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