

Trinidad and Tobago's Traffic Recovery and ATFM Update for the Piarco FIR

NACC/WG/ATFM/TF/3



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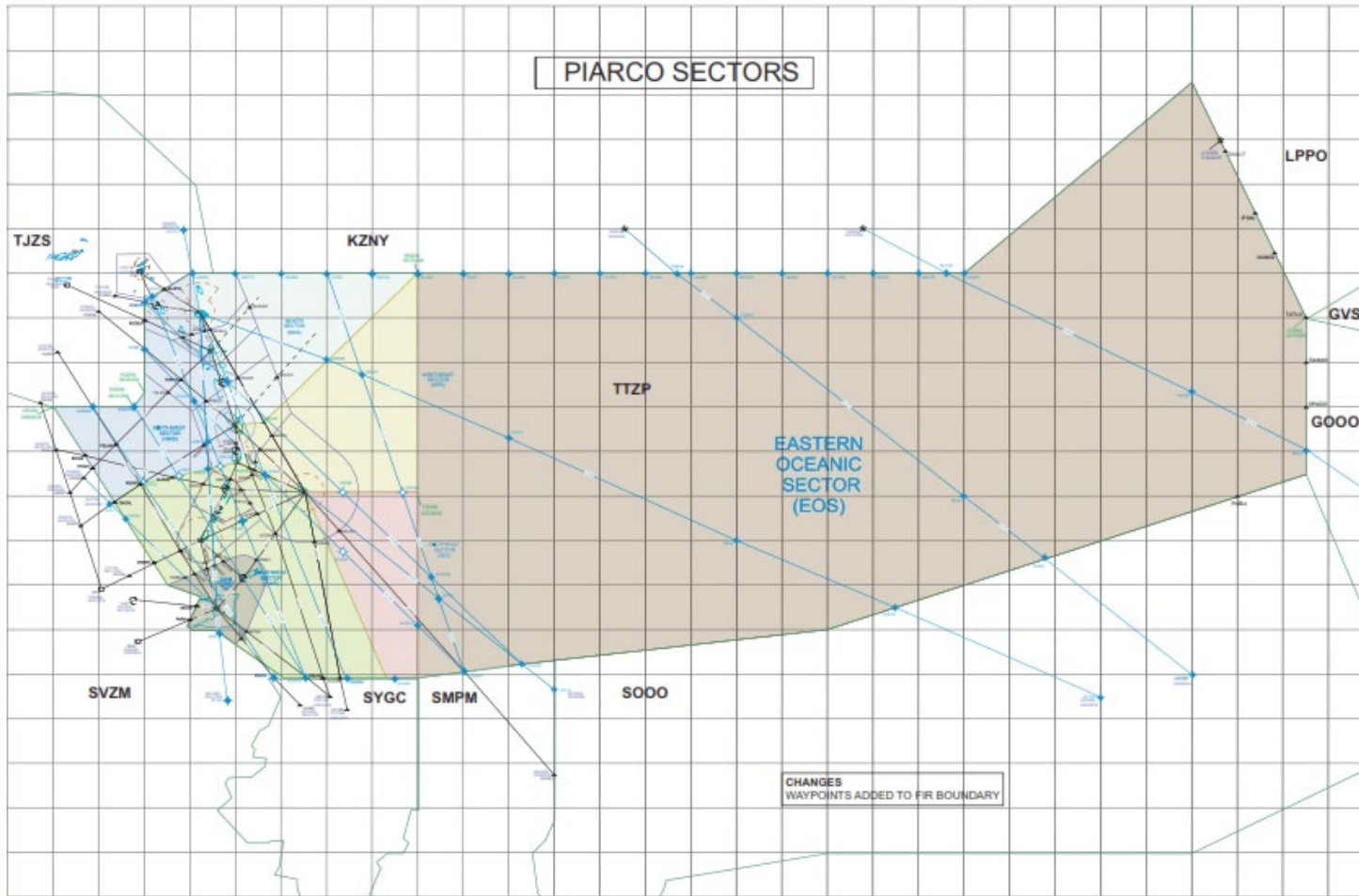
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Airspace Description



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Description of the Piarco FIR



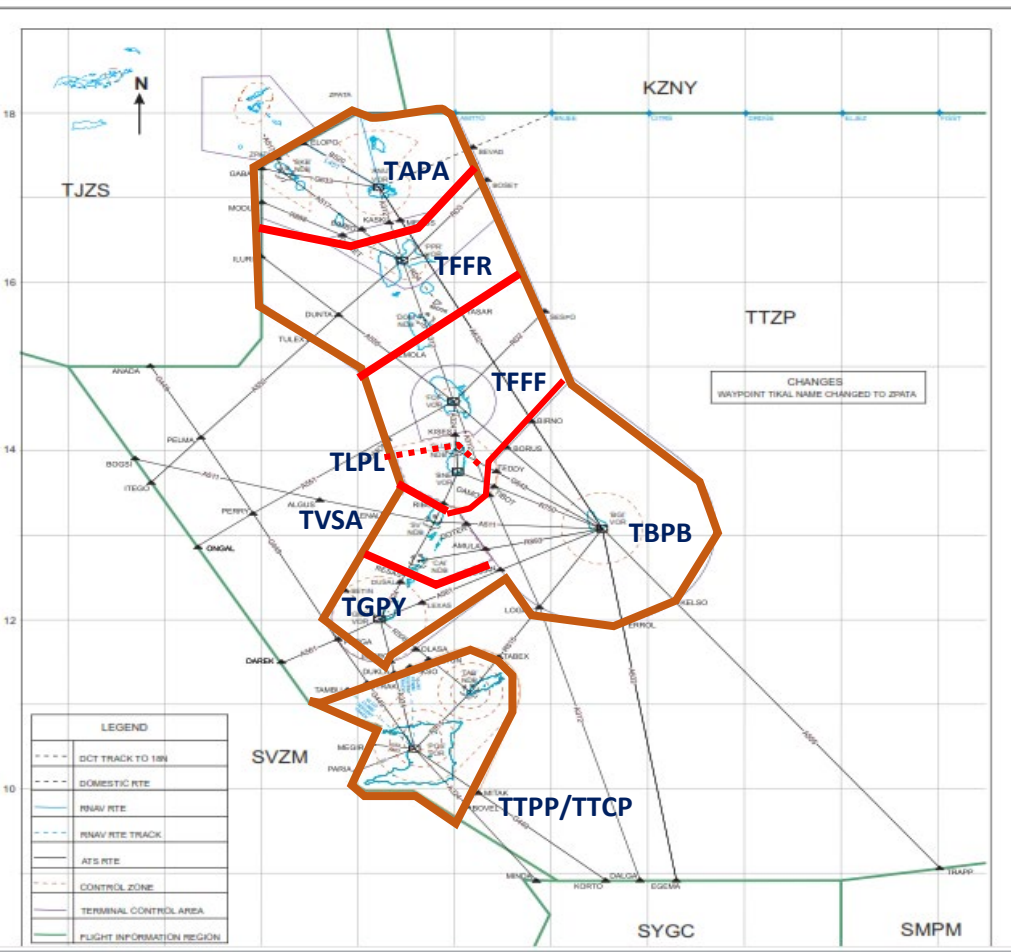
Trinidad and Tobago:

- Has the responsibility to provide an Air Navigation Service (ANS), within a Flight Information Region FIR of 750,000 square miles.
- Surrounded by 9 FIRs
- An Area Air Traffic Service, utilizing Secondary Surveillance Radar is provided within a portion of this airspace, known as the continental airspace.
- A procedural Air Traffic Control service is provided within an area, east of 57 degrees West, known as the Oceanic Control Sector



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Terminal Management Areas (TMAs)



FIR	TMA/CTZ		State	Remarks
	Name	Indicator		
Piarco	Adams	TBPB	Barbados	TMA/CTZ
	Argyle	TVSA	St. Vincent and the Grenadines	TMA/CTZ
	Bequia	TVSB		CTZ
	Canouan	TVSC		CTZ
	Mustique	TVSM		CTZ
	Union	TVSU		CTZ
	Douglas Charles	TDPD	Dominica	CTZ
	Canefield	TDCF		CTZ
	Hewanorra	TLPL	St. Lucia	TMA/CTZ
	George Charles	TLPC		CTZ
	Lamentin	TFFF	Martinique (French West Indies)	TMA/CTZ
	Le Raizet	TFFR	Guadeloupe (French West Indies)	TMA/CTZ
	Piarco	TTPP	Trinidad and Tobago	TMA CTZ
	ANR Robinson	TTCP	Trinidad and Tobago	CTZ WITHIN TTPP TMA
	Maurice Bishop	TGPY	Grenada	TMA/CTZ
	V.C. Bird	TAPA	Antigua and Barbuda	TMA
Bradshaw	TKPK	St. Kitts	CTZ within TAPA TMA	



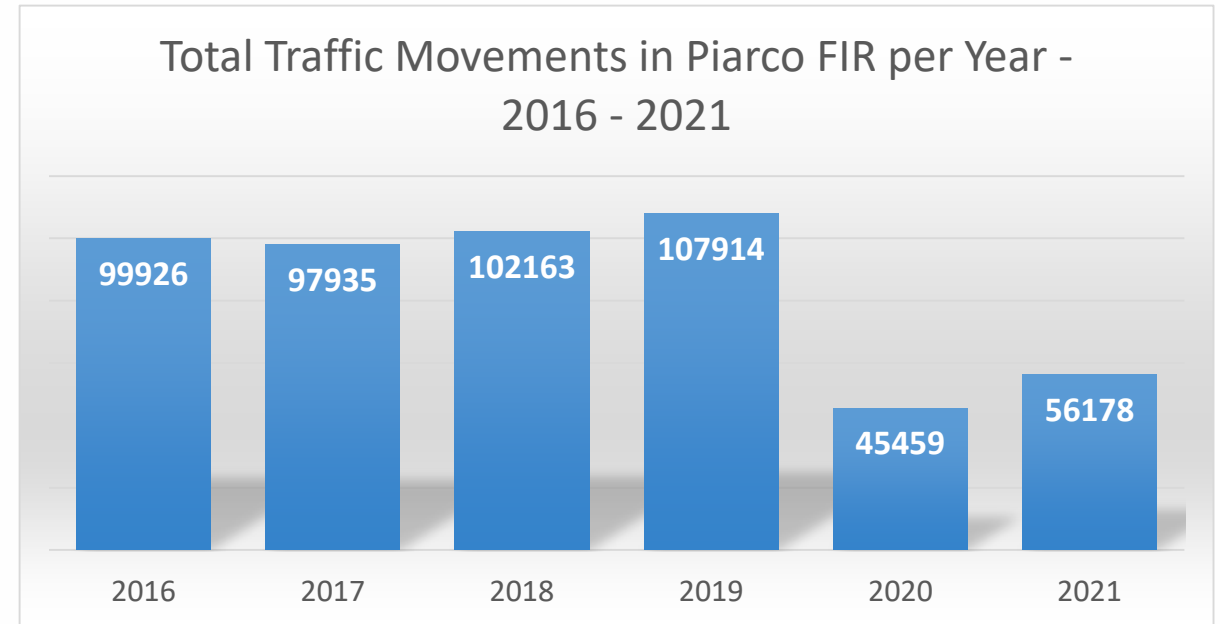
Traffic Recovery



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Yearly/Monthly Traffic Comparison: 2016 - 2022

Month	Year and No. of Traffic Movements Piarco FIR							Percentage of 2019 (Pre-pandemic baseline)
	2016	2017	2018	2019	2020	2021	2022	
Jan	9764	9132	9256	10305	10156	4038	7729	75
Feb	8933	8275	8724	8956	9333	4142	6769	76
Mar	8717	8950	9433	10386	7292	4255	7654	74
Apr	8015	8079	8144	9027	940	3879	7468	83
May	7665	7536	7733	8339	1167	3625		0
Jun	7663	7471	7883	8376	1607	3982		0
Jul	8768	8334	8734	9167	2116	4832		0
Aug	8862	8521	8725	9127	2601	5088		0
Sep	7146	7129	7622	7738	2290	4251		0
Oct	7508	7789	7940	8223	2380	4738		0
Nov	7809	7995	8192	8440	2504	5783		0
Dec	9076	8724	9777	9830	3073	7565		0
TOTALS	99926	97935	102163	107914	45459	56178	29620	



Using the average of 2016-2019 yearly totals as the Baseline

2020 = -55% decrease in Pre-pandemic traffic levels

2021 = -45% decrease in Pre-pandemic traffic levels

Overall marginal recovery in 2021. Significant increase in traffic movements began in November 2021

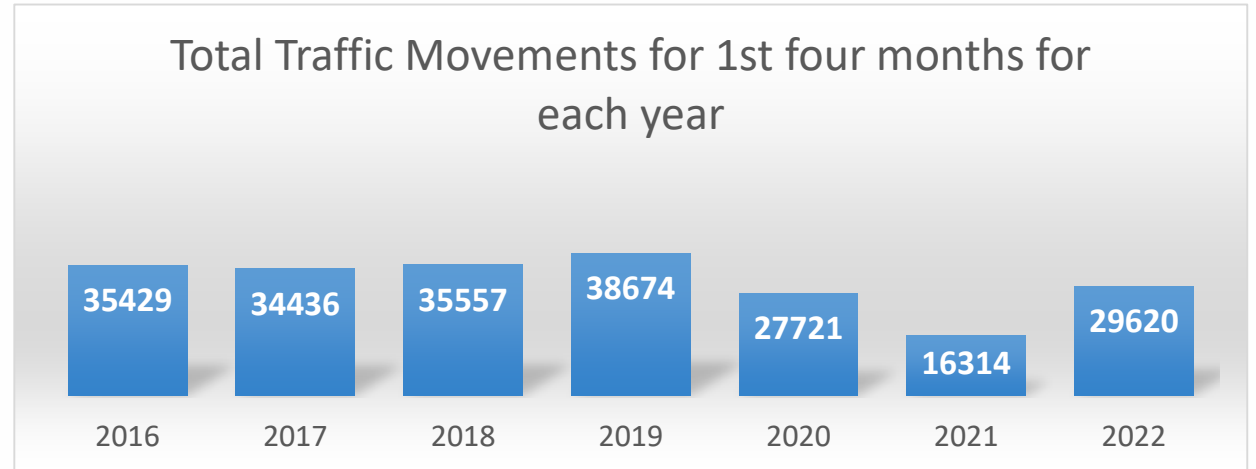


Yearly/Monthly Traffic Comparison: 2016-2022

First four months (Jan – April) of Each year

- Traffic Movements for first four months (Jan – April) of each year 2016 - 2022

	2016	2017	2018	2019	2020	2021	2022
Jan	9764	9132	9256	10305	10156	4038	7729
Feb	8933	8275	8724	8956	9333	4142	6769
Mar	8717	8950	9433	10386	7292	4255	7654
April	8015	8079	8144	9027	940	3879	7468
Totals 1st three mths per yr	35429	34436	35557	38674	27721	16314	29620

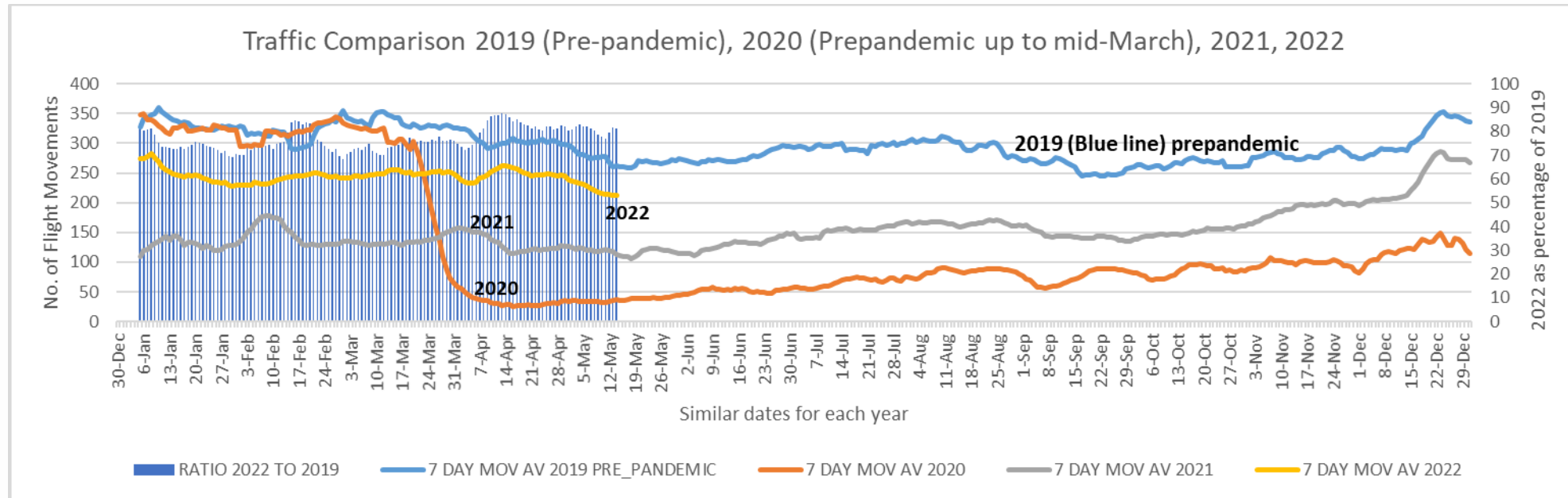


Average for four months of non pandemic years 2016 to 2019 = 36024

Total for first four months of 2022 = 29620

Piarco FIR is at 82% of Average for pre pandemic period
Traffic in the Piarco FIR is well on the way to recovery !

Yearly Comparison of Traffic Movements: 2019 - 2022



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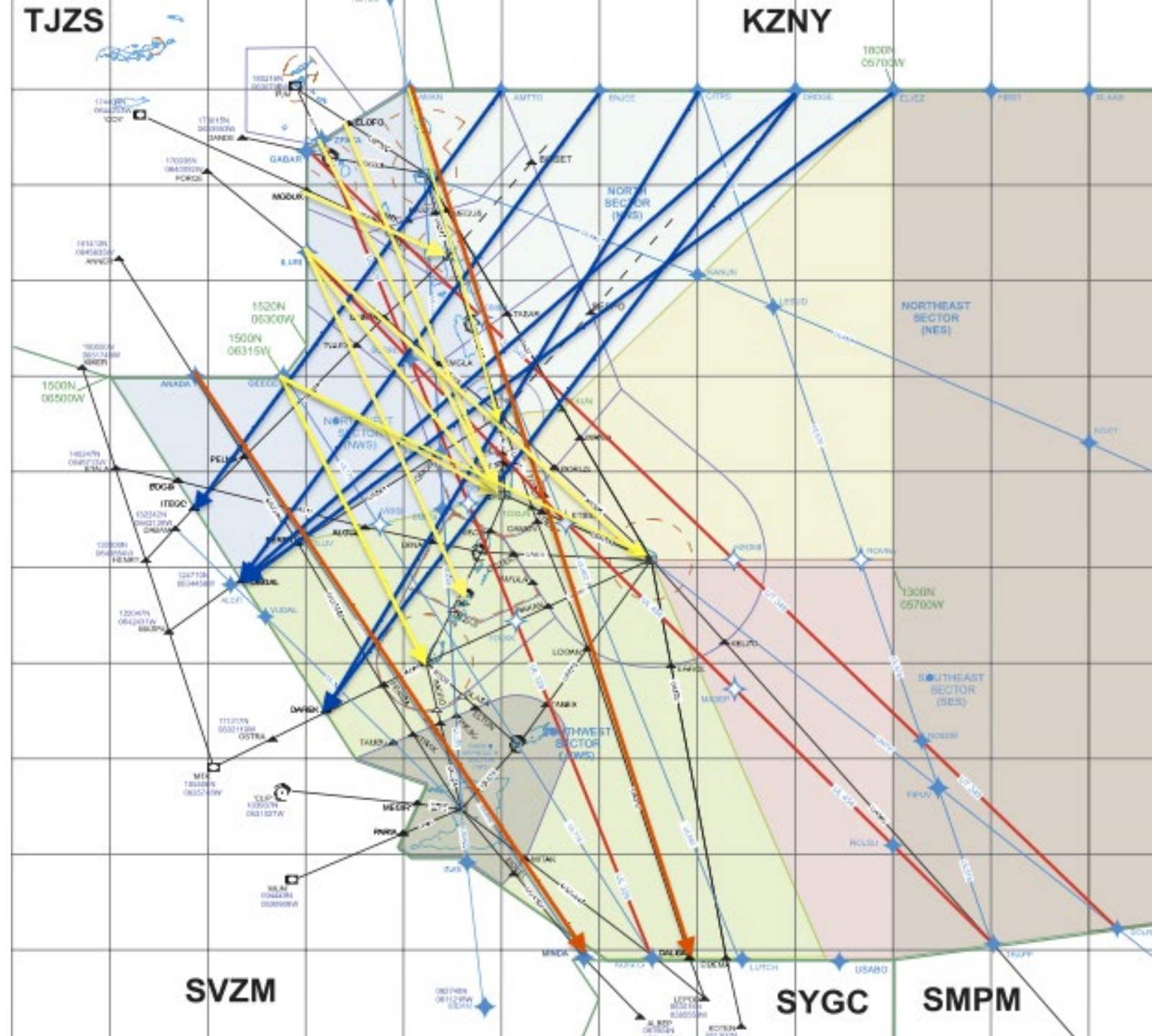
Description of Traffic Flows



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Piarco FIR Traffic Flow

- Yellow Arrows- Traffic landing TFFR,TFFF,TLPL,TLPC,TVSC,TGPY, TBPB,
- Blue Arrow – EAST-WEST Overflying Traffic
- Red Arrow – NORTH-SOUTH Traffic Overflying



Area of Maximum Complexity- RED CIRCLE

Most climb/descent profiles

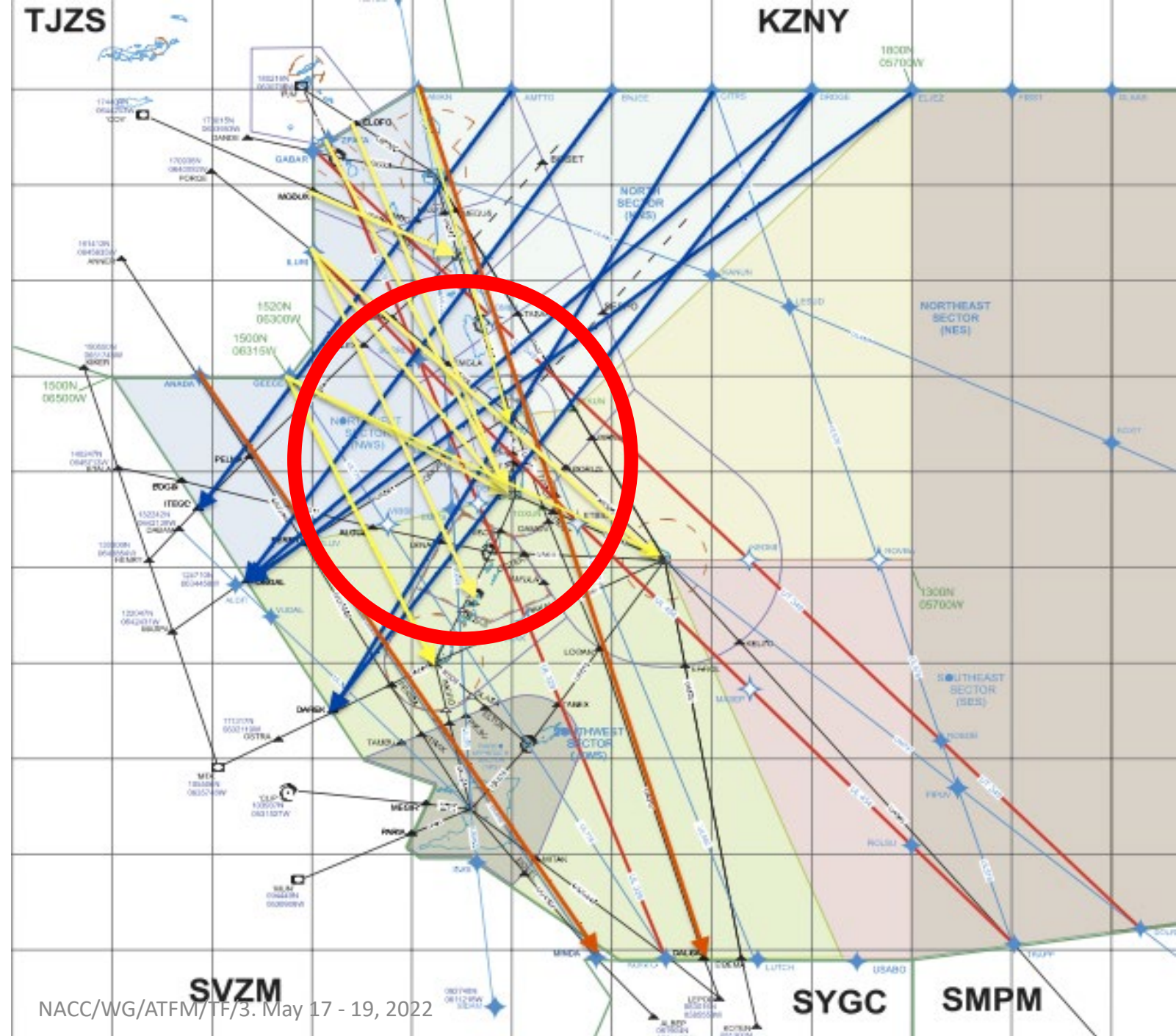
Most crossing of traffic trajectories

Mix of trajectory profiles and types – i.e.

Overflights mixed with descending and climbing aircraft

Acft arriving at closer points at higher altitudes

Different aircraft performance types at lower FLs



The ATFM Process



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ATFM Functions – Responsible Departments

No formal FMU established

ATFM Team comprises of members from the Planning and Technical Evaluation (PTEU) Department and ATS operations.

Strategic and Pre-tactical ATFM functions are carried out by the PTEU.

Air Traffic Services are mostly responsible for daily tactical functions.

PTEU (Strategic and Pre-Tactical)

- General Quality Assurance of ATFM Process,
- Research and Development of ATFM/CDM Process
- Development/Update of Manuals
- Training
- Proper functionality of the ATFM Tools (Software and Hardware)
- Perform Traffic Demand Analysis at the Strategic and Pre-tactical Phases. Analysis is shared with the ATS department
- Active participate on the NAM/CAR ATFM Task Force and CADENA RIG

ATS (Tactical)

- Daily update of CADENA OIS
- Traffic Analysis at Tactical Level
- Implementation and Monitoring of Traffic Management Measure
- Provide updates to stakeholders via WhatsApp during contingency events



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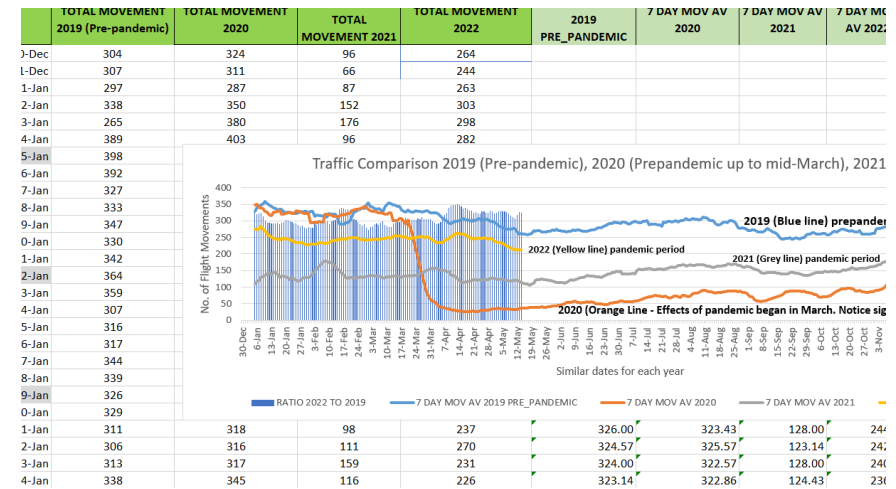
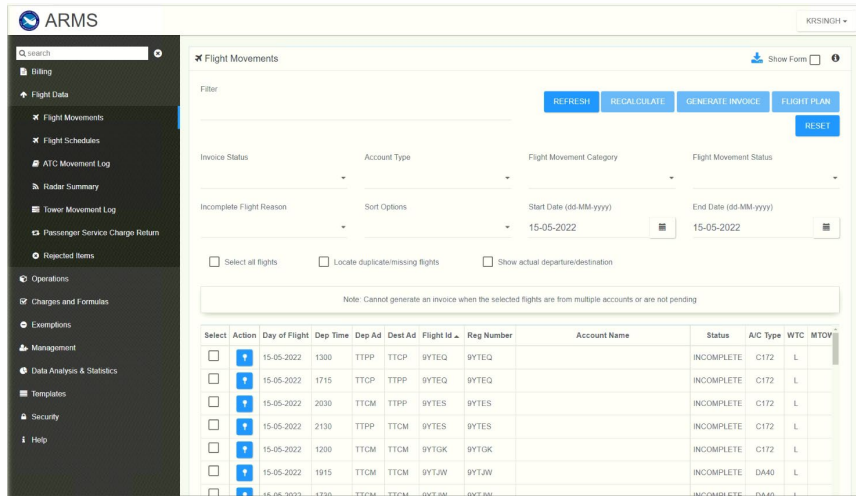
Traffic Demand Analysis - Strategic and Pre-Tactical

Very simple process

Based on flight schedules obtained from historical flight data.

Seasonal traffic movements trends are predicted based on historical trends from previous years

Tools used in analysis: Excel spreadsheet downloaded from Aviation Revenue Management System (ARM-S) tool



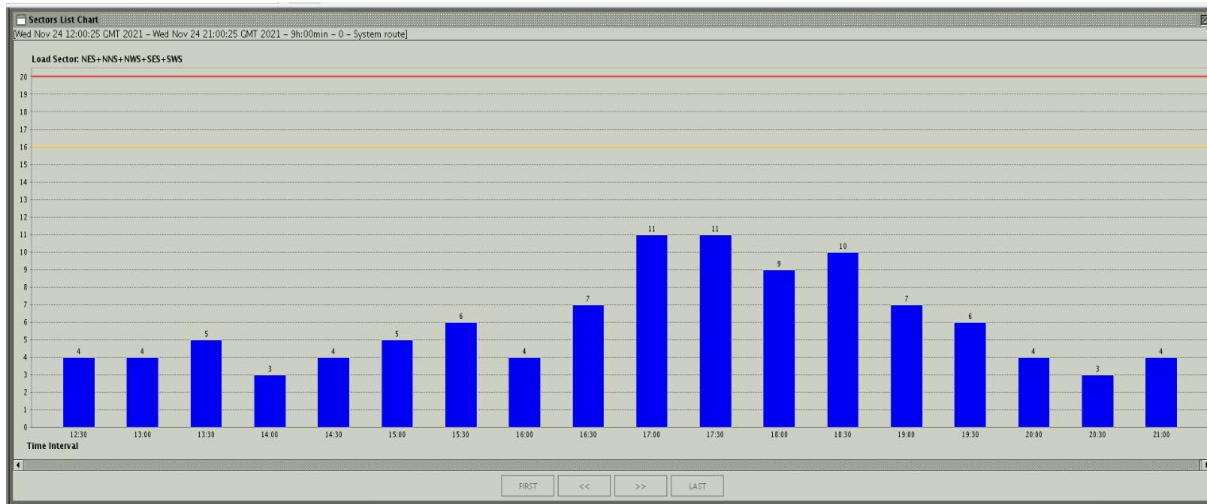
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Traffic Demand Analysis - Tactical

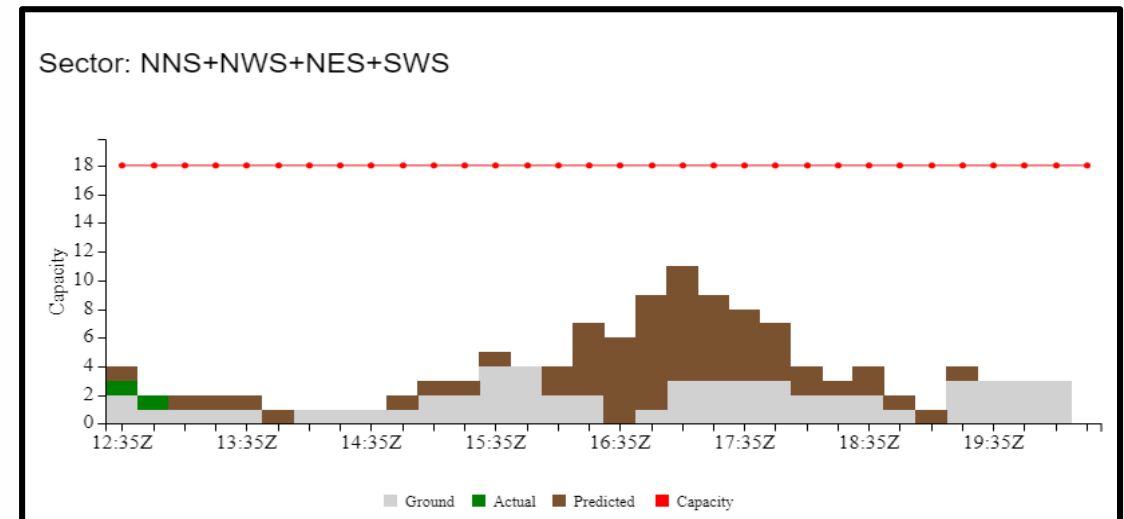
Based on AFTN/AMHS information

Displayed through Demand Capacity Analysis tools for easy visual display of Capacity shortfalls

Two main tools are used for DCB analysis during the Tactical Phase



Traffic Load Monitor




ATFM On-time Suite DCB Analysis tool

ATFM Daily Plan (ADP)

ATFM Daily Plan is published daily via the CADENA OIS for easy access on the public page



CADENA OIS  **TTCAA Trinidad & Tobago**

ATFM Daily Plan

Information <

Regional TMM

Active Reroutes

Delays

Advisories

ANSPs <

Airlines <

ANSP NOTAM Page

ATFM Daily Plan Updated - 16/May 15:37

Anticipated Demand Information MEDIUM

TMM Planned NONE

Weather NO SIGNIFICANT WEATHER

Constraints TFFF – A0787/22 MAY 03 – JUNE 17, 2022, DLY 0230 – 1000, RWY 10/28 CLOSED DUE WIP ON FOLLOWING DAYS: MAY 03 04 05 06 10 11 12 13 17 18 19 20 24 31: 0230-1000; JUNE 01 02 03 08 09 10 14 15 16 17: 0230-1000

Special Events NONE

Equipment Outages TVSC – A0814/22 NDB 'CAI' 302KHZ U/S MAY 3 – 27, 2022

Volcanic Ash NONE

Other COVID 19 NOTAMS

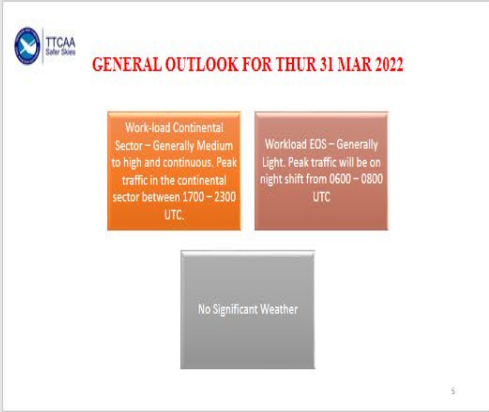
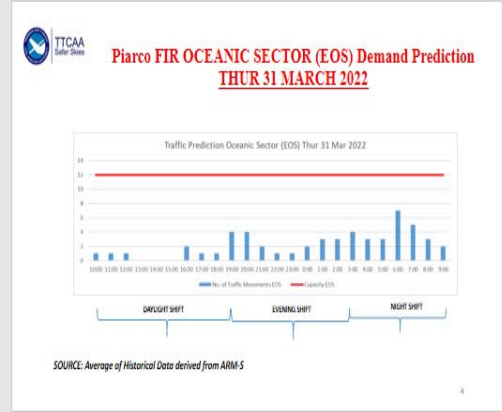
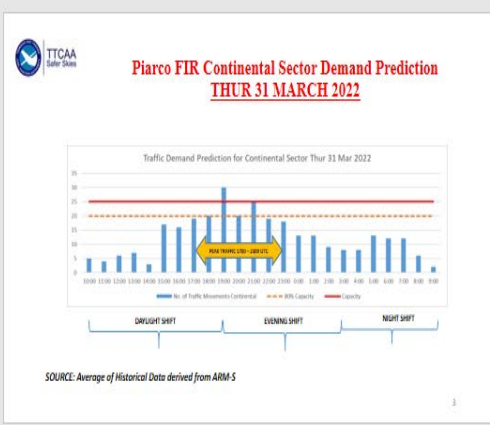
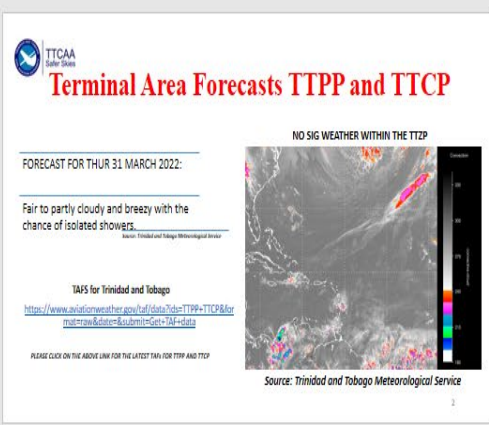
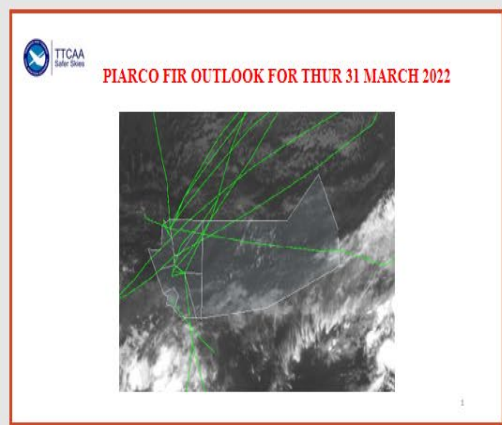
TAPA – NIL
TBPB – NIL
TDCF – A0639/22, A0486/22.
TDPD –
A0638/22, A0485/22, A0482/22.
TFFF – NIL
TFFR – NIL
TGPY – A0685/22
TKPK –
A0580/22
TKPN – A0582/22

ATFM Daily Plan (ADP)

Internal ADP is developed occasionally and is shared and discussed with Air Traffic Services Management .

Consist of:

- Daily traffic forecast
- Terminal Area forecasts for TTPP and TTCP
- Weather information for the Piarco and neighboring FIRs
- General Outlook for the Piarco FIR



Traffic Management Measures (TMMs)

- The Need for TMMs would be determined, based on capacity shortfalls due to planned or unplanned constraints or heavy volume, equipment failures, etc.
- Traffic Management Plan would be developed collaboratively with affected adjacent FIRs/TMAs;
- Briefed on the CADENA weekly planning web-conference, or via an adhoc planning web-conference if required
- ATFM measures are disseminated via the following means:
 - NOTAMS or Service Messages,
 - CADENA OIS (ADP, Urgent advisories, ADP link files, etc.),
 - Emails.
 - CADENA and other WhatsApp group



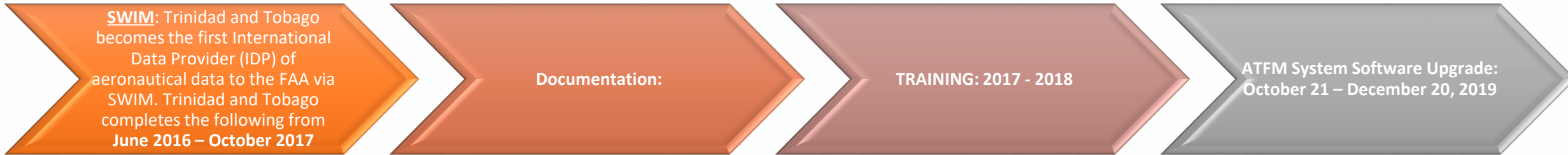
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Achievements and Future Goals



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ACHIEVEMENTS TO DATE



- Signs agreement and sends letter of intent to the FAA **June – August 2016**
- Successfully on-ramps to the FAA SWIM **Jan 26, 2017**
- Signs Air Navigation Services Agreement with the FAA on the Exchange of Traffic Flow Management Data – **September 21, 2017**
- Operational Cutover – Begin producing FPLs, ARRs, Deps, and Track message through the VPN: **October 16 – 31, 2017**

- Concept of Operations
- Procedures Manual
- ATFM Equipment Quick Reference Guide
- TLM Guide
- ATFM Roles and Responsibilities Document

- ATFM/CDM/CADENA training for 15 ATCOs: **March 20 – 30, 2017**
- CNS Technical Training conducted by IDS: **Dec. 11-12, 2017 and Dec. 13-14, 2017**
- ATFM OJT for Supervisors and ATCOs **September – December 2018**

- Upgraded software transferred to old staging server: Oct 21 – 25, 2019
- Testing and provisional fixes completed by December 20, 2019



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Future Goals

Continue to develop CDM process, supported by institutional agreements, with regional stakeholders, adjacent FIRs, TMAs (LoAs, MoAs)

Develop a process for Refresher and Recurrent Training

Enhance Planning at the strategic phase (e.g. OAG)

Established FMU/FMPs on the TTCAA's ANS Organizational Structure



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THANK YOU



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