TRINIDAD AND TOBAGO

Meeting to Enhance State Coordination

Between

MET, AIM, and ATM Fields

(Mexico City, Mexico, 26 – 28 July 2016)

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Trinidad & Tobago
Meteorological Service

PRESENTED BY
Robert Rooplal, ATM Officer
Ricky Bissessar, AIM Officer

PIARCO FLIGHT INFORMATION REGION

This is all of the 750,000 sq. miles of airspace where Piarco provides Air Navigation Services excluding the Terminal Airspaces (TMA's)

The Piarco Flight Information Region (FIR) comprises a region that spans from 10°-18° North Latitude and approximately mid Atlantic (38° West Longitude) to 65° West Longitude with nine (9) bordering FIRs

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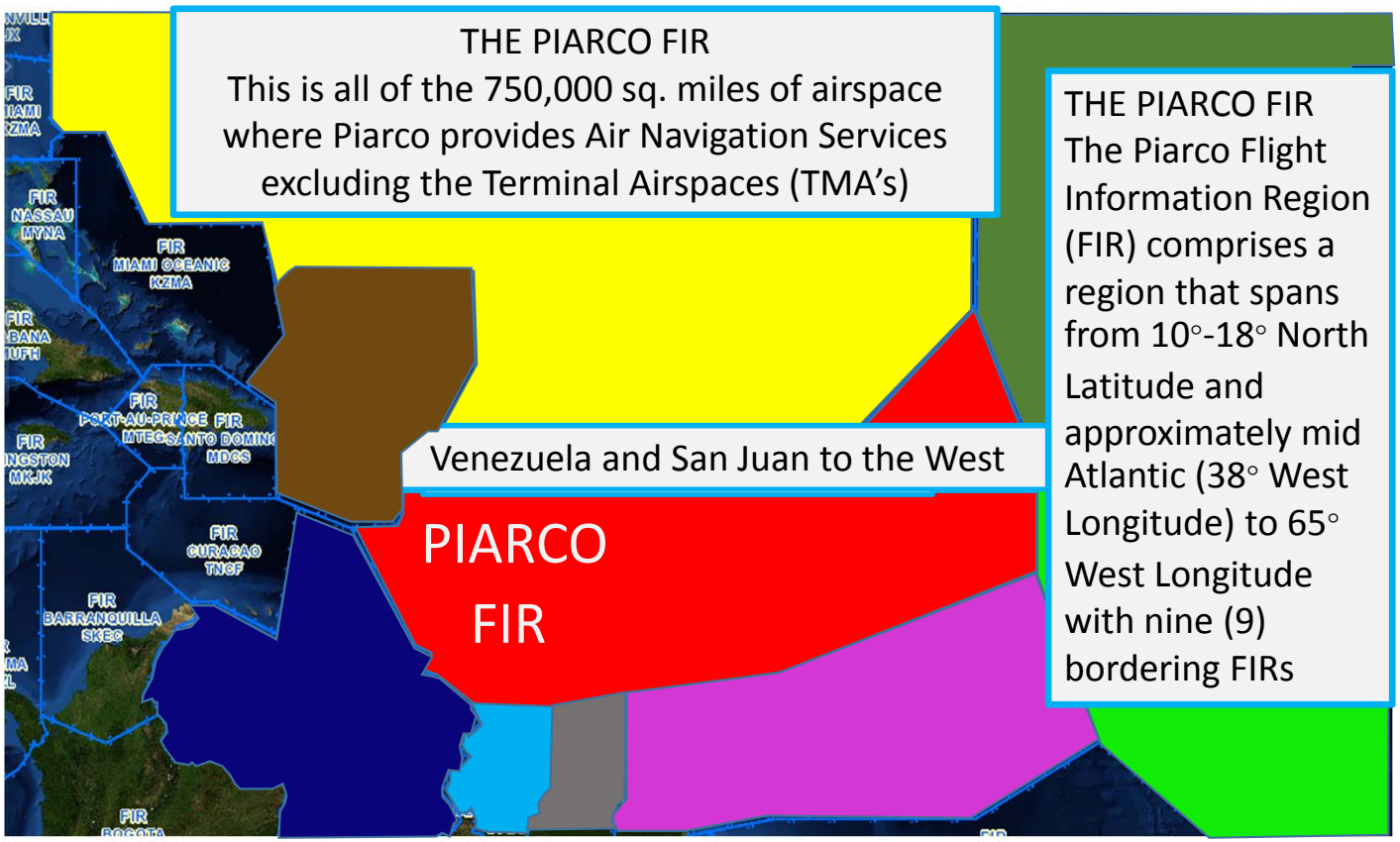
PIARCO FLIGHT INFORMATION REGION



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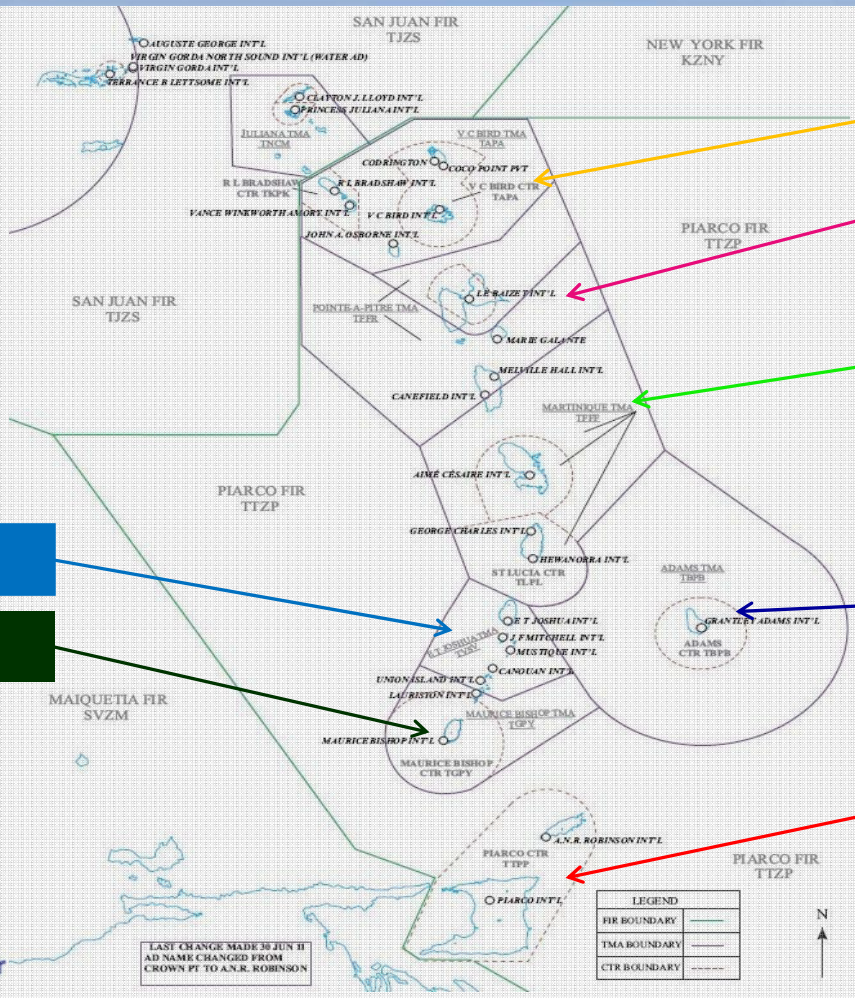
TMAs WITHIN THE PIARCO FIR



ANTIGUA

GUADELOUPE

MARTINIQUE

BARBADOS

TRINIDAD AND TOBAGO

ST. VINCENT AND THE GRENADINES

GRENADA

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EASTERN CARIBBEAN STATES

ANGUILLA
ANTIGUA
BARBADOS
DOMINICA
GRENADA
GUADELOUPE
MARTINIQUE
MONTSERRAT
NEVIS
ST. KITTS
ST. LUCIA
SINT MAARTEN
ST. VINCENT
TRINIDAD
TOBAGO
SAN JUAN (ATLANTA AND NEW YORK)

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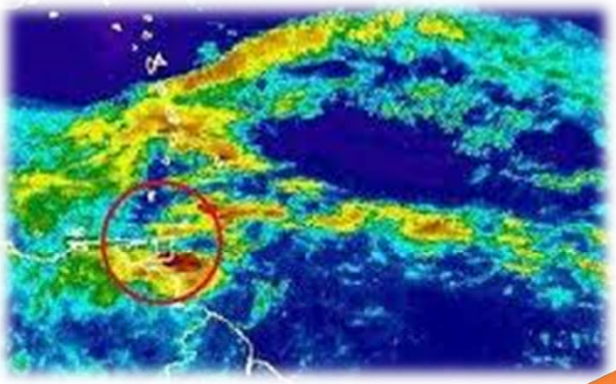
COORDINATION



CDM

Collaborative Decision Making

AIM

Met

ATM

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GUIDING DOCUMENTS

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OPERATING FORUM

TRINIDAD AND TOBAGO
AVIATION METEOROLOGY COMMITTEE

The Committee was formed to:

- Coordinating and ensure the execution of activities to meet the meteorological requirements necessary for civil air navigation in Trinidad and Tobago and delegated airspaces for which Trinidad and Tobago has responsibility.

- Coordinate Training between the TTCAA and TTMS with the objective of familiarizing personnel with the activities performed by both services

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TRINIDAD AND TOBAGO AVIATION METEOROLOGY COMMITTEE

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NAMES	POSITION - DEPARTMENT	EMAIL CONTACT
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ROBERT ROOPLAL	ATM OFFICER - PLANNING & DEVELOPMENT	rrooplal@caa.gov.tt
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SAIDE SHAKEER	METEOROLOGIST III	Saide.Shakeer@metoffice.gov.tt
SHAKEER BAIG	METEOROLOGIST IV	shakbaig@hotmail.com

MET

Observations ⌄ Forecast Bulletins Watches and Warnings Climate

Trinidad & Tobago Meteorological Service

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Trinidad & Tobago Meteorological Service

AERONAUTICAL METEOROLOGICAL OFFICES

OFFICE	LOCATION	LOCATION INDICATOR
Piarco Meteorological Watch Office	Piarco International Airport	TTPP
Meteorological Office, Tobago	ANR Robinson International Airport	TTCP

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Met
Trinidad & Tobago Meteorological Service

RELATED TO ATS UNITS AND SAR CENTRES

METEOROLOGICAL OFFICE	LOCATION	COORDINATION WITH ATS UNIT
PIARCO AERODROME METEOROLOGICAL OFFICE	PIARCO INTERNATIONAL AIRPORT	PIARCO TOWER PIARCO APPROACH AIM PIARCO
ANR ROBINSON METEOROLOGICAL OFFICE, TOBAGO	ANR ROBINSON AIRPORT	ROBINSON TOWER
PIARCO METEOROLOGICAL WATCH OFFICE	PIARCO INTERNATIONAL AIRPORT	ACC PIARCO SAR PIARCO AIM PIARCO

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INFORMATION SUPPLIED TO ATS UNITS

INFORMATION	DISTRIBUTOR	DESTINATION	FREQUENCY	COMMUNICATION MEANS
Local routine reports with Trend type forecast (Abbreviated plain language)	MET Office	TWR APP	Hourly	AFTN
Local special reports with Trend type forecast (Abbreviated plain language)	MET Office	TWR APP	When Warranted	AFTN
Routine reports (METAR with TREND)	MET Office	TWR APP ACC	Hourly	AFTN
Special reports(SPECI with TREND)	MET Office	TWR APP ACC	When Warranted	AFTN
Aerodrome forecasts (TAF) (and amendments thereto)	MET Office	TWR APP ACC	Every 6 hours	AFTN

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INFORMATION SUPPLIED TO ATS UNITS

Trinidad & Tobago Meteorological Service

Information	Distributor	Destination	Frequency	Communication Means
SIGMET and AIRMET (abbreviated plain language)	MWO	TWR APP ACC	When warranted	AFTN
Volcanic ash advisory (abbreviated plain language)	MWO	ACC	When warranted	AFTN
Aerodrome warnings (abbreviated plain language)	MET Office	TWR APP	When warranted	AFTN
Wind shear warnings (abbreviated plain language)	MET Office	TWR APP	When warranted	AFTN – (ACFT Rep) (AWOS-short term)
Upper wind and upper air temperature forecasts (and amendments thereto) (charts and or gridded binary (GRIB code) forecasts)	MWO	ACC	Every 12 hours	FAX and/or E-MAIL
Significant en-route weather forecasts (Significant weather from surface up to FL240)	MWO	ACC	Every 12 hours	FAX and/or E-MAIL

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AIRCRAFT OBSERVATIONS AND REPORTS SUPPLIED TO THE MET SERVICE BY ATS – AIR REPORTS

Trinidad & Tobago Meteorological Service

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TYPE OF REPORT	MEANS OF COORDINATION	FREQUENCY	REMARKS
Routine Air-Reports	Voice Communications (Public Telephone)	Occasionally	No specific provisions in place
Routine Air-Reports	Data Link	NIL	CPDLC/ADS-C Implemented At Piarco July 7, 2016. Measures being developed to relay all air reports via data link comms.
Special Air-Reports	Voice Communications (Public Telephone)	Without Delay	Direct speech circuit to be installed with MET Service
Other Non-Routine reports			

PROPOSED AIRCRAFT REPORTING POINTS

PROJECTS TO BE IMPLEMENTED IN THE SHORT TERM

COORDINATION VIA COMPUTER - PROCESSED METEOROLOGICAL INFORMATION

Automated Weather Observation System (AWOS)
Meteorological Screen: OPMET data, Wind Shear Reports
Threshold Siting Surface Screen (TSS): Distance and Direction Thunderstorms

TTMS Web-GIS Platform
Aims to provide needed data for stakeholder agencies, such as:
TTCAA ATFM Situational Display
Search and Rescue

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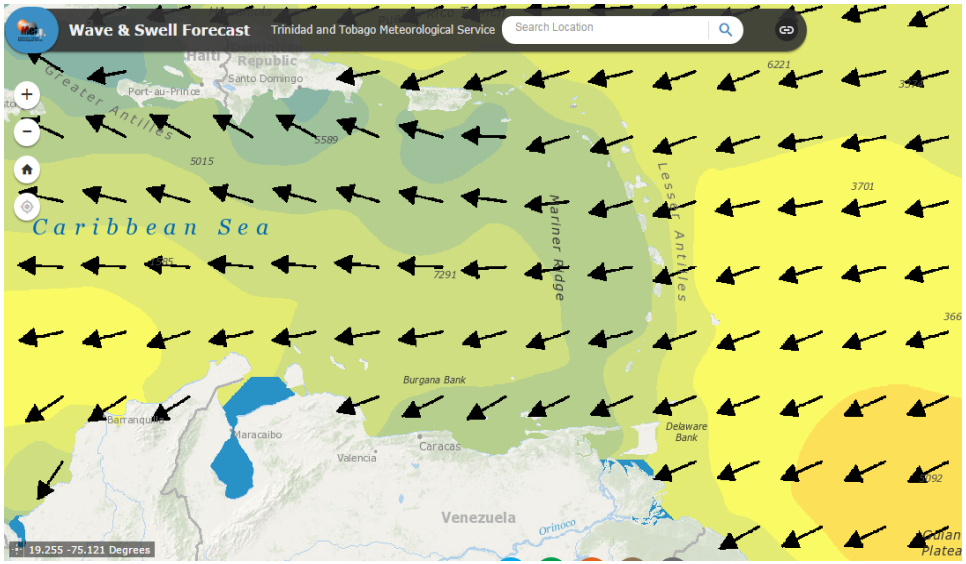
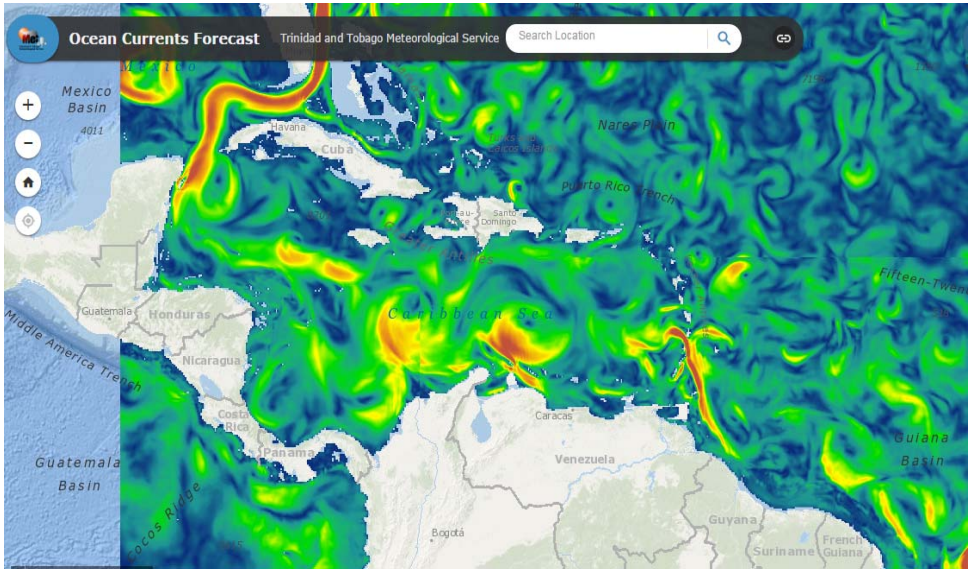
MET SERVICES PROVIDED TO SEARCH & RESCUE



Ocean Currents Forecast



Wave and Swell Forecast

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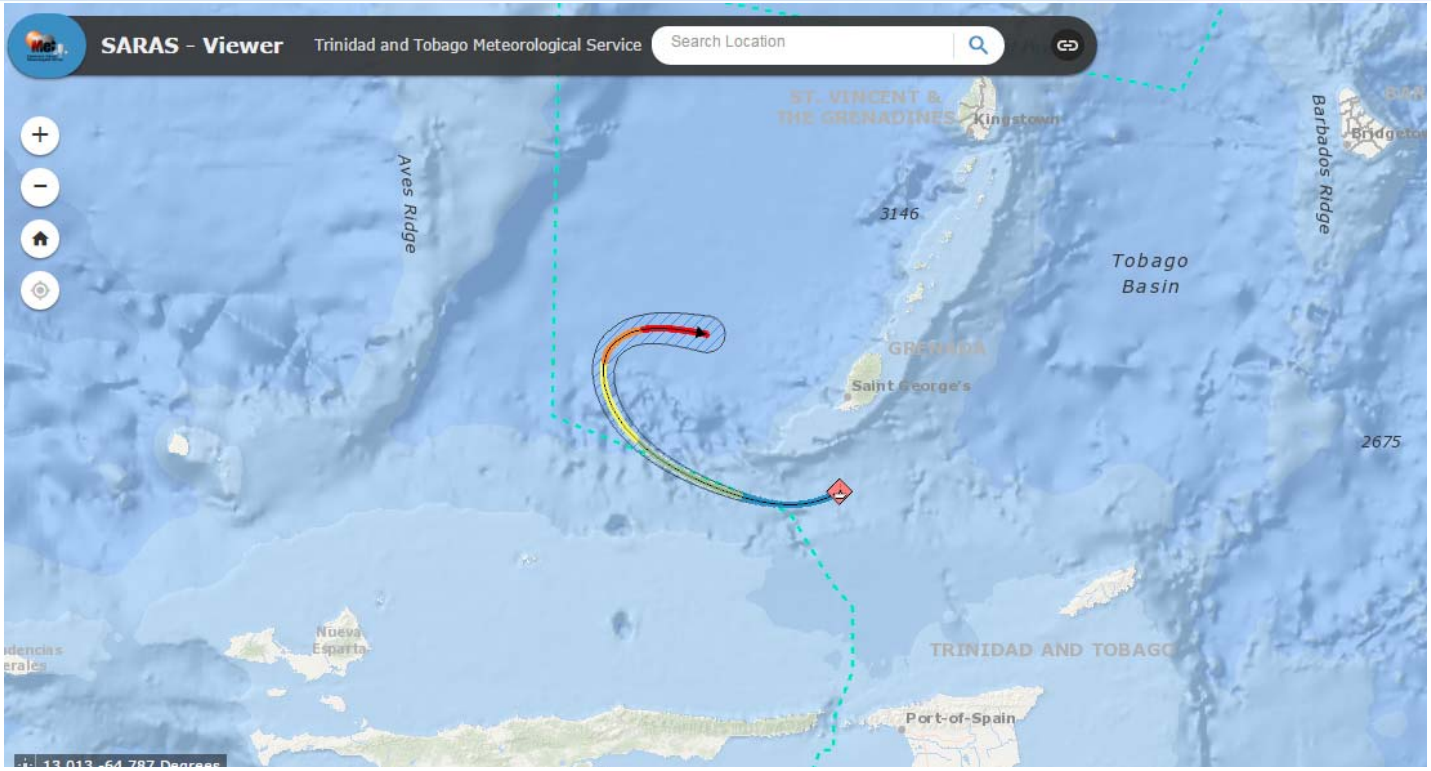
MET SERVICES PROVIDED TO SEARCH & RESCUE



Search and Rescue Analysis System (SARAS)

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AUTOMATED WEATHER OBSERVING SYSTEM (AWOS)

AUTOMATIC OBSERVATION	ATS UNITS RECEIVING INFORMATION	COMMUNICATION MEANS	REMARKS
1. OPMET DATA: ▪ Hourly METAR ▪ SPECI, etc. ▪ Local Routine Reports	APS, TWR,	AUTOMATED VIA OPTICAL FIBRE PAIRS	Cloud Observations Confirmed Manually
2. Low Level Easterly Wind Shear	APS, TWR	AUTOMATED VIA OPTICAL FIBRE PAIRS	
3. Lightning and Thunderstorm Reports ▪ **Distance and Direction**	APS, TWR	AUTOMATED VIA OPTICAL FIBRE PAIRS	

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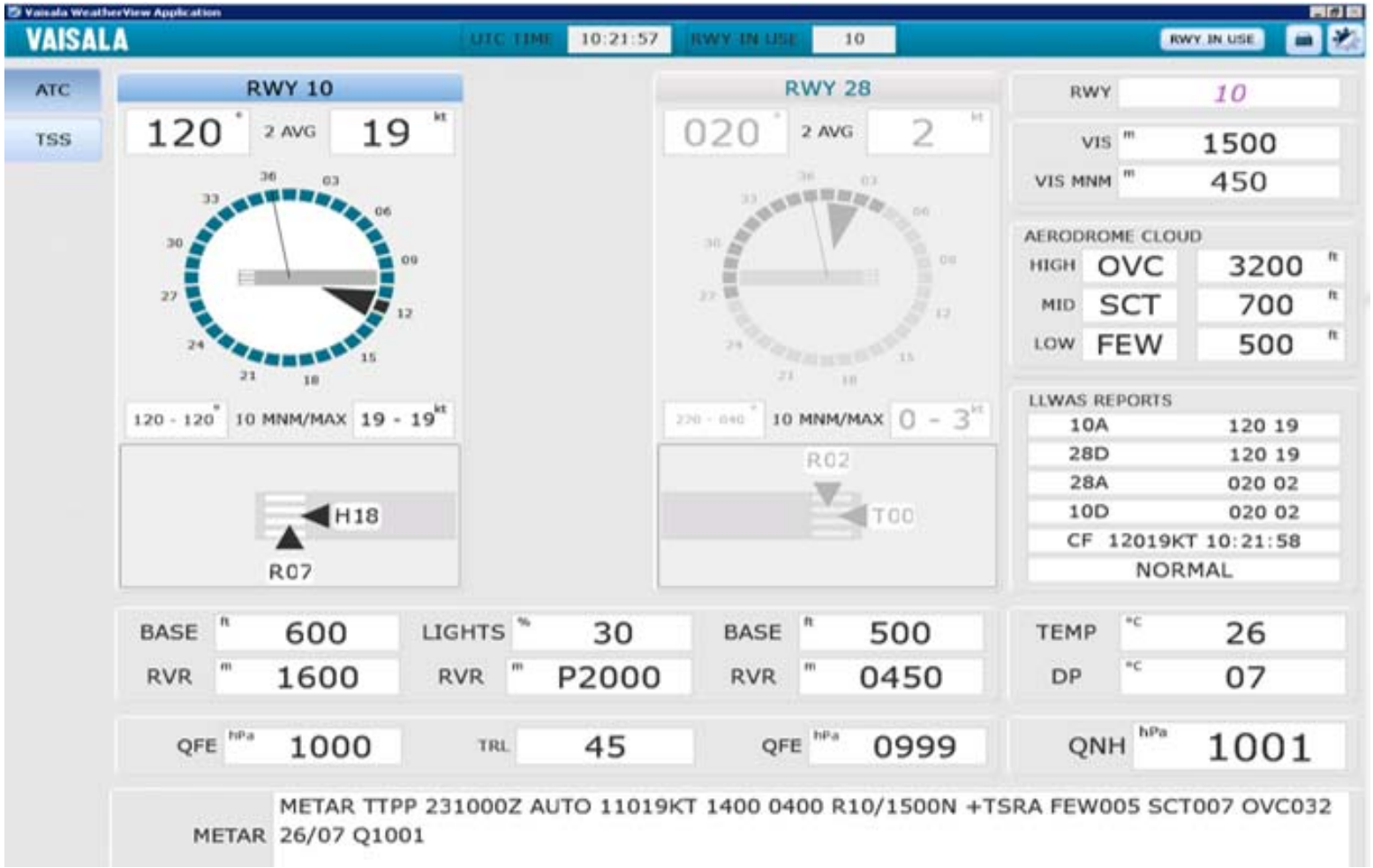
Met Trinidad & Tobago Meteorological Service

AUTOMATED WEATHER OBSERVING SYSTEM (AWOS)

Trinidad & Tobago Meteorological Service

MET screen with a wide range of data updated in near real time.



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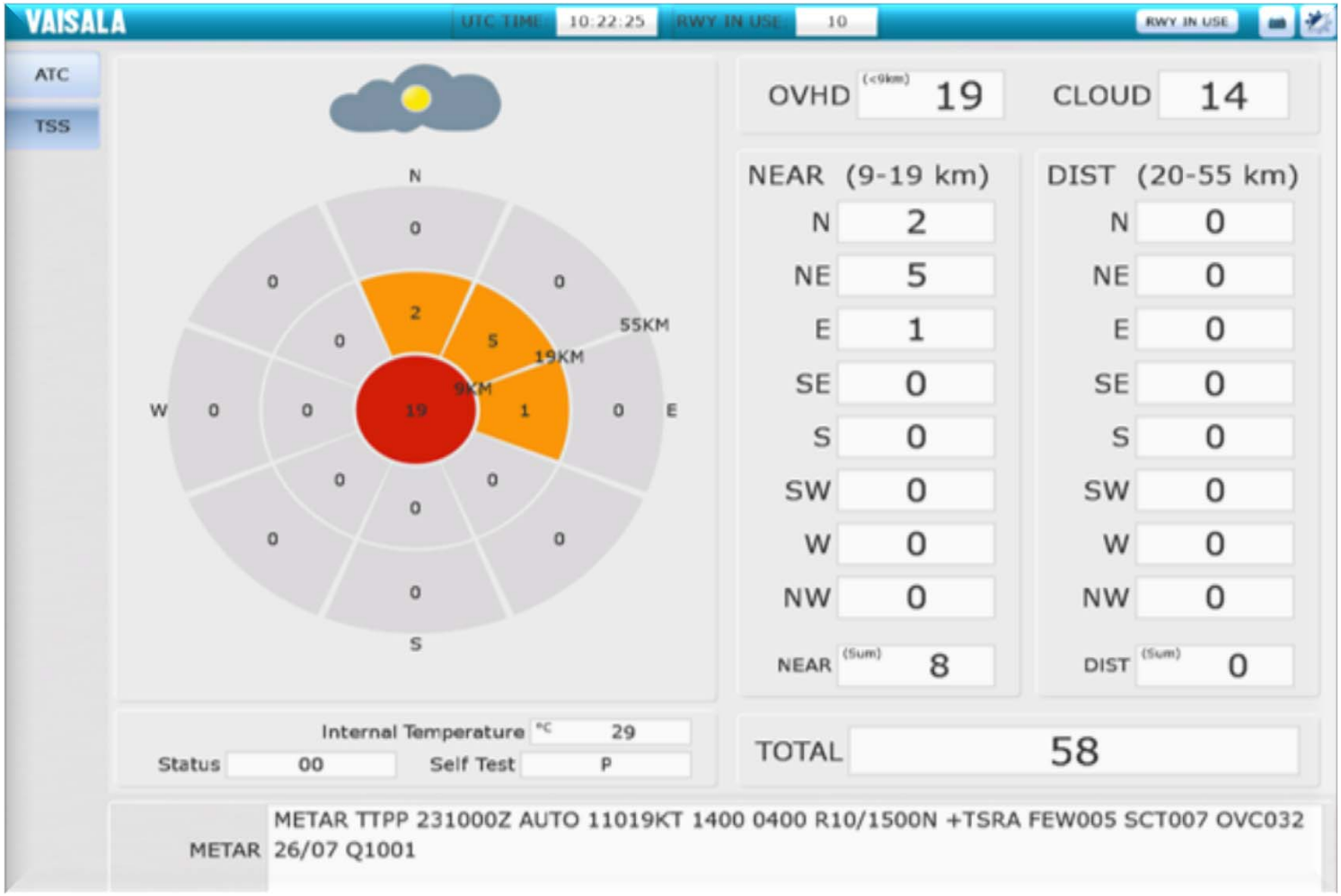
AUTOMATED WEATHER OBSERVING SYSTEM (AWOS)

Trinidad & Tobago Meteorological Service

"TSS" screen will show the direction and distance of any thunderstorms.



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AIR TRAFFIC SITUATION DISPLAY (ASD) FOR ATFM UNIT

Trinidad & Tobago Meteorological Service

ASD allows unlimited overlay capabilities for displaying information. In addition to active flights on the map, layers may including **meteorological data** derived from the **TTMS Web-GIS Platform.**

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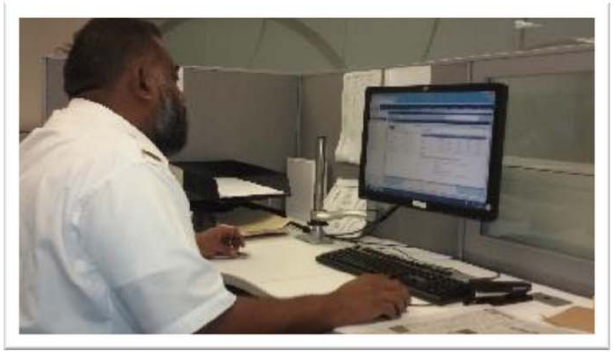
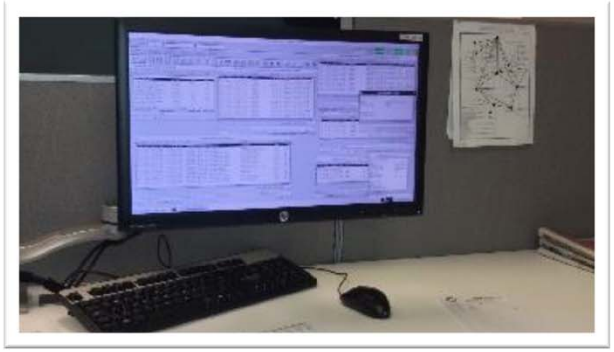
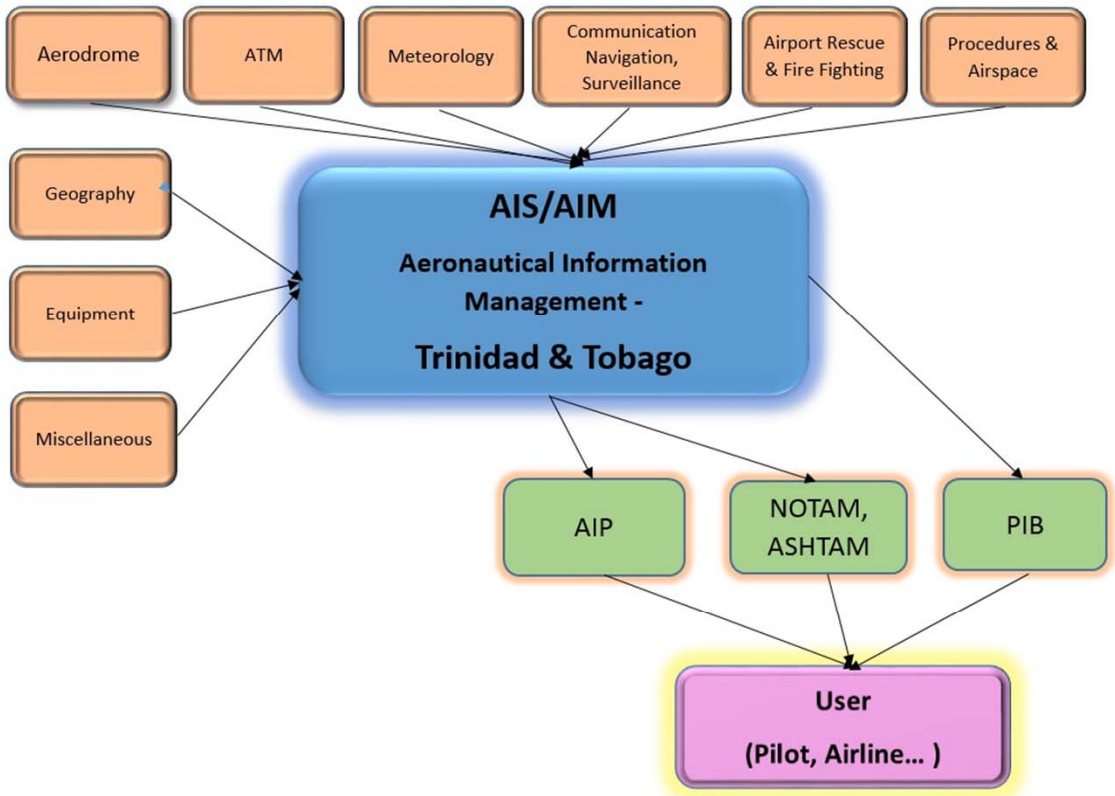
PIARCO AIM/ATS







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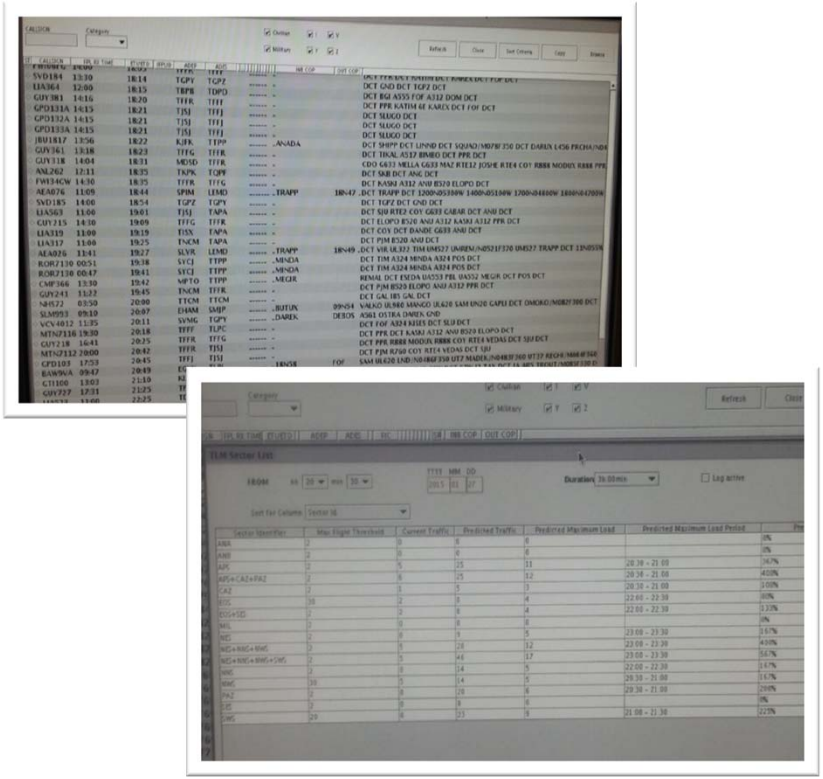

AIM -ATS

1. Collection and distribution of FPL data.
2. Provision of NOTAM data.
3. Use of AFTN/AMHS network for collection and transmission of ATS data.
4. Operations of the Flight Data Processing Unit for providing data to the ATM system.
5. Correction of erroneous FPL at the FDP unit.
6. Collection and distribution of Position reports and printed FPLs within the ACC.
7. Integration of SWIM for the ATFM system.

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Other Applications Using FPL Data

CPDLC

Controller Pilot Data Link Communications (CPDLC) is a means of communication between controller and pilot, using data link for ATC communications

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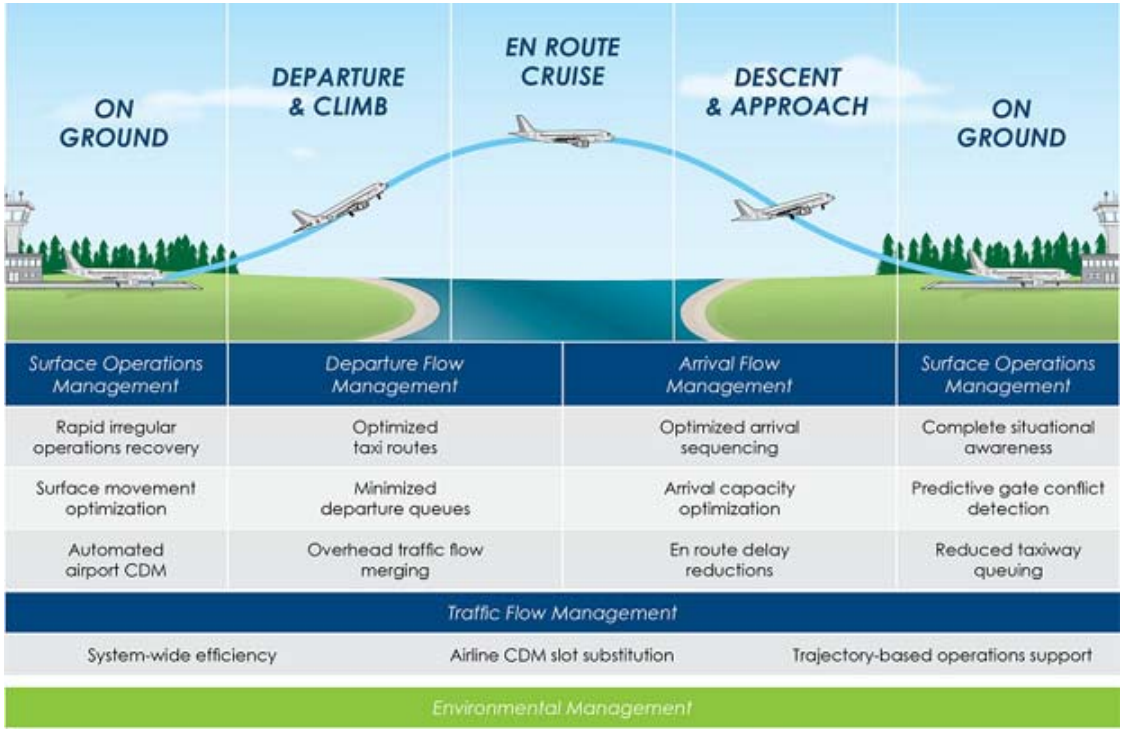
ATFM – Air Traffic Flow Management

Air Traffic Flow Management (ATFM) is the science of improving aviation operations by using up-to-date flight information to anticipate future traffic demand, and strategically controlling aggregate flows of flights to keep demand within safe and manageable bounds.

Gate-to-gate ATFM with all stakeholders involved



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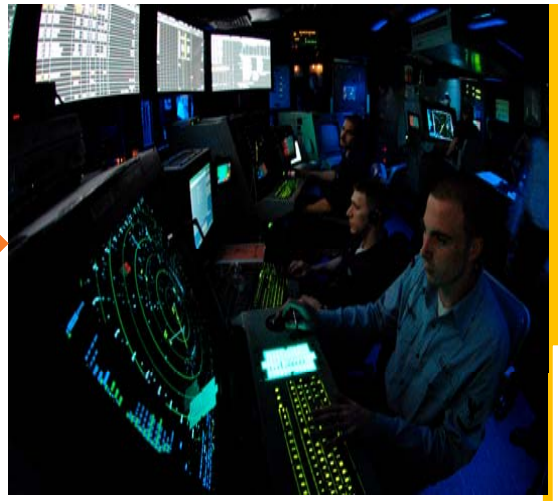
DATA



ATS Interfacility Data Communications: is a data link application that provides the capability to exchange flight data between automated systems located at different ATSUs (Air Traffic Services Units).

- Duplicate Flight Plans
- Erroneous Flight Plan Data
- Non-Availability of FPL
- Incorrect FPL format
- Incorrect route and/or boundary estimate

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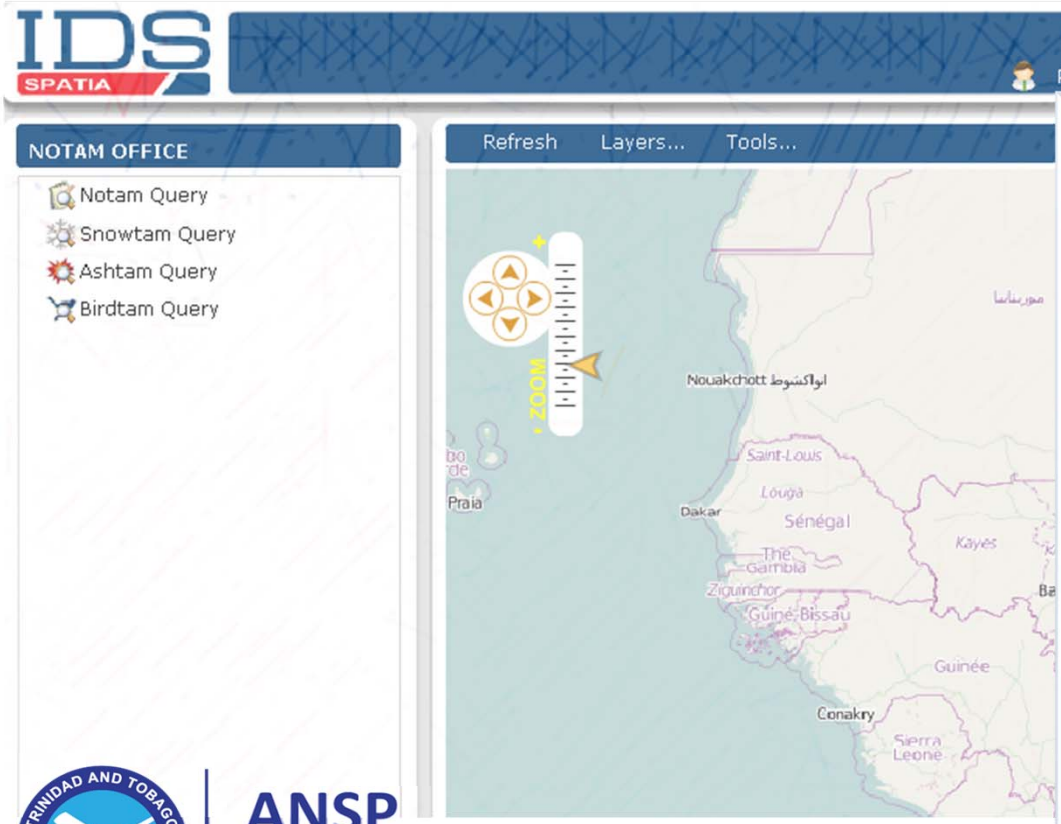

AIM - MET

Provision of the IDS Spatia software for promulgation and recording of Aviation MET data.

1. **Use of the AFTN/AMHS network for distribution and collection of MET data.**
2. **Possibility of employing the Spatia software within the E/CAR states for promulgation of MET data.**
3. **Integration of Aviation MET data within the ATFM system.**

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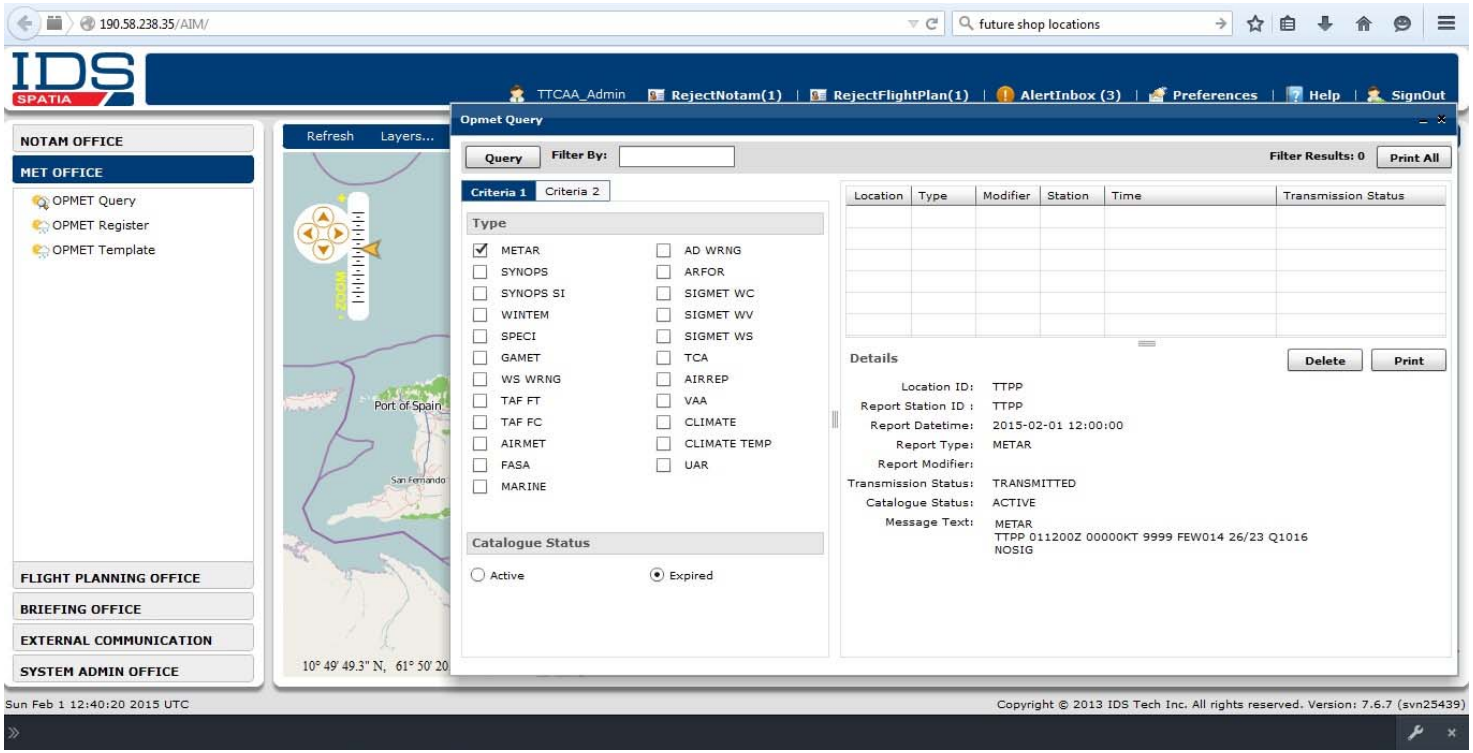
Configuration of Spatia MET Parameters for 12 E/CAR States



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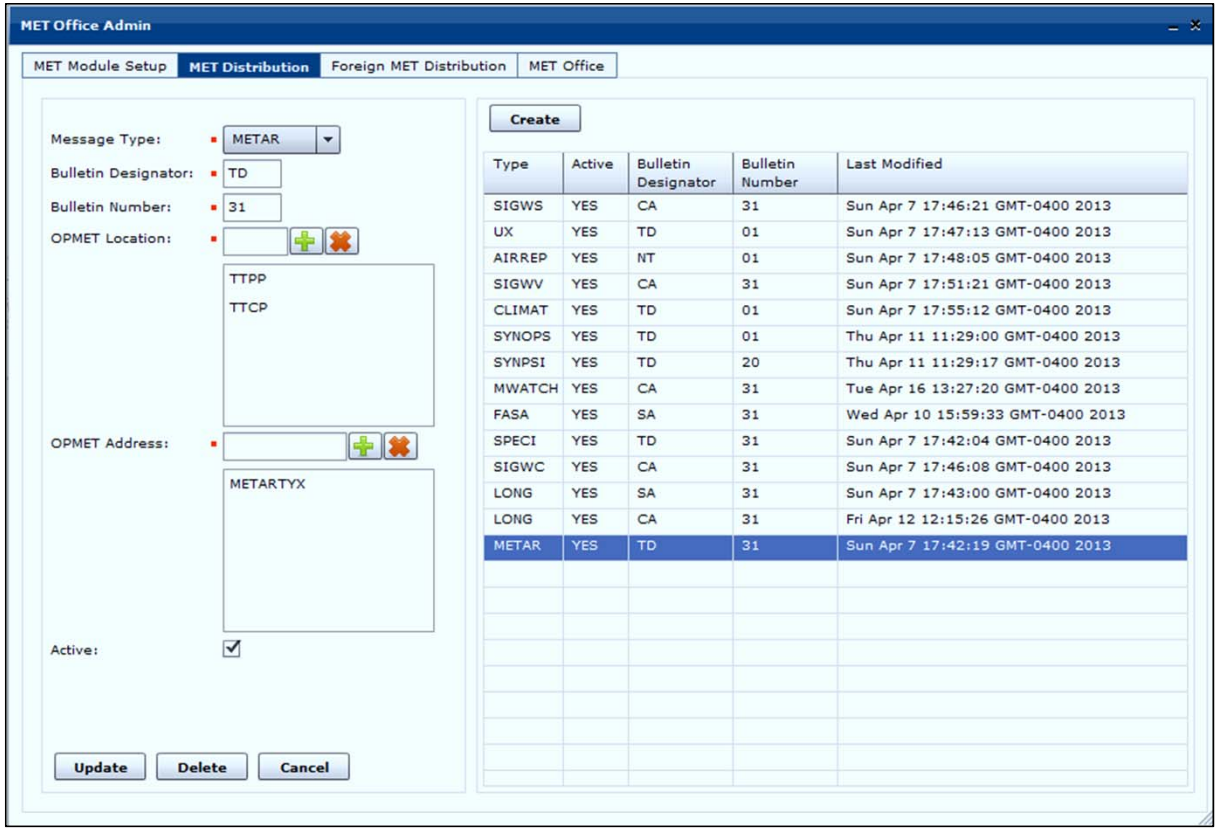
Possible Configuration of Spatia MET Parameters for Twelve (12) E/CAR States



Type	Active	Bulletin Designator	Bulletin Number	Last Modified
SIGWS	YES	CA	31	Sun Apr 7 17:46:21 GMT-0400 2013
UX	YES	TD	01	Sun Apr 7 17:47:13 GMT-0400 2013
AIRREP	YES	NT	01	Sun Apr 7 17:48:05 GMT-0400 2013
SIGWV	YES	CA	31	Sun Apr 7 17:51:21 GMT-0400 2013
CLIMAT	YES	TD	01	Sun Apr 7 17:55:12 GMT-0400 2013
SYNOPS	YES	TD	01	Thu Apr 11 11:29:00 GMT-0400 2013
SYNPSI	YES	TD	20	Thu Apr 11 11:29:17 GMT-0400 2013
MWATCH	YES	CA	31	Tue Apr 16 13:27:20 GMT-0400 2013
FASA	YES	SA	31	Wed Apr 10 15:59:33 GMT-0400 2013
SPECI	YES	TD	31	Sun Apr 7 17:42:04 GMT-0400 2013
SIGWC	YES	CA	31	Sun Apr 7 17:46:08 GMT-0400 2013
LONG	YES	SA	31	Sun Apr 7 17:43:00 GMT-0400 2013
LONG	YES	CA	31	Fri Apr 12 12:15:26 GMT-0400 2013
METAR	YES	TD	31	Sun Apr 7 17:42:19 GMT-0400 2013

Spatia System Configured for Trinidad and Tobago MET Services only.

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AIM On-Going Projects

- Flight Plan Monitoring Group – Piarco FIR
- Centralized Flight Planning Unit
- AMHS Testing and Implementation with FAA
- NOTAM Contingency – Letter of Intent signed with Curacao
- AIDC, CPDLC, ATFM, Aviation MET
- ETOD, Charting

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Thank You for Your Attention


QUESTIONS?