

# CADENCE Task Force

## (CANSO ATFM Data Exchange Network for Cooperative Excellence)

For: ISPAC Group

Date: Aug 18, 2022

# Introduction

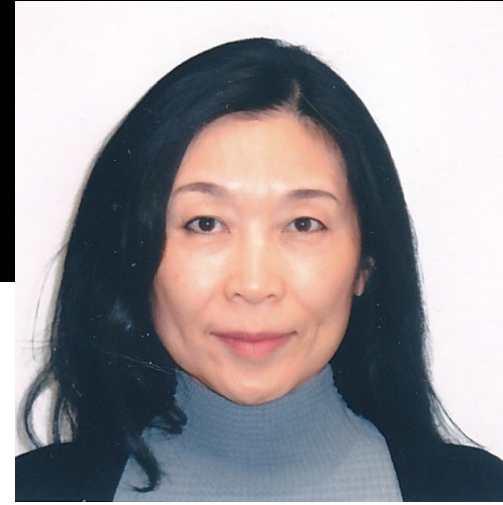
The CANSO ATFM Data Exchange Network for Cooperative Excellence Task Force (CADENCE TF) is the newest member of the OSC Operations Programmes.





**Mr. Joe Hof**

**Co-Chair CADENCE Task Force**  
**CGH Technologies**



**Ms. Midori Tanino**

**Co-Chair CADENCE Task Force**  
**FAA**

# Purpose of CADENCE TF

The CADENCE TF is a strategic initiative designed to help develop, or enhance, a network for

**operational coordination** and

**information sharing**

among air navigation service providers (ANSPs) in flight information regions (FIRs) around the world.

# Background of CADENCE - CADENA

The core capabilities offered by the CADENCE TF are based on the successful operational work accomplished by the CAN SO ATFM Data Exchange Network for Americas, **CADENA**.

- CADENA is a multi-nodal, regional ATFM/CDM system operated under the policy of transparency, inclusiveness, collaboration, and simple-to-achieve solutions.
- CADENA became operational quickly and all ANSPs can participate with relatively small investment.
- CADENA's effectiveness to improve ATFM/CDM is proven in the Latin America and Caribbean Regions.



# CADENA Key Regional Stakeholders

## ANSPs

- EANA (Argentina)
- COCESNA (Central America)
- UAEAC (Colombia)
- ECNA (Cuba)
- DC-ANSP (Curacao)
- IDAC (Dominican Republic)
- DGAC (Ecuador)
- FAA (USA)
  - ZMA, SJU, ZHU, ATCSCC
  - Space Operations Office
- OFNAC (Haiti)
- JCAA (Jamaica)
- SENEAM (Mexico)
- TTCAA (Trinidad & Tobago)
- INAC (Venezuela)

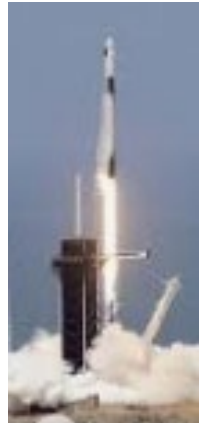
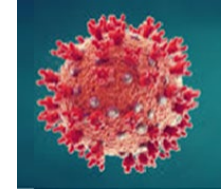
## State/Territory/Group

- ANSA (Aruba)
- DGAC (Costa Rica)
- MWCR (Grand Cayman)
- CARRG (Caribbean Aviation Resilience and Recovery Group)



# Background of CADENCE - CADENA

CADENA has established effective ATFM/CDM in the Latin America and Caribbean Regions.



- CADENA has proven that the CADENA OIS web application is an effective means to exchange operational information.
- The value of information exchange and collaboration is most recognized during irregular operations.
  - Reduced MIT, CO2, and airlines' operational costs.

# Background of CADENCE - CADENA

CADENA became operational quickly and all ANSPs can participate with a small investment

- 2016 Jun – Established
- 2016 Dec – Started regional ATFM/CDM Operational Planning Web Conferences
- 2017 Aug – Initial version of the CADENA Operational Information System (OIS) launched



1. Computer
2. Internet Access
3. Human Resource



# Background of CADENCE

## LOA between CGH Technologies and CANSO



- The agreement secures the provision of a purpose-built collaborative software platform based on the successful regional initiative, CADENA.
- CADENA OIS version 3.2 is the baseline for the CADENCE OIS v1.0.
- The baseline CADENCE OIS is offered at no cost to regions and functional groups for 20 years.
- CGH Technologies will support the CADENCE OIS for 20 years.

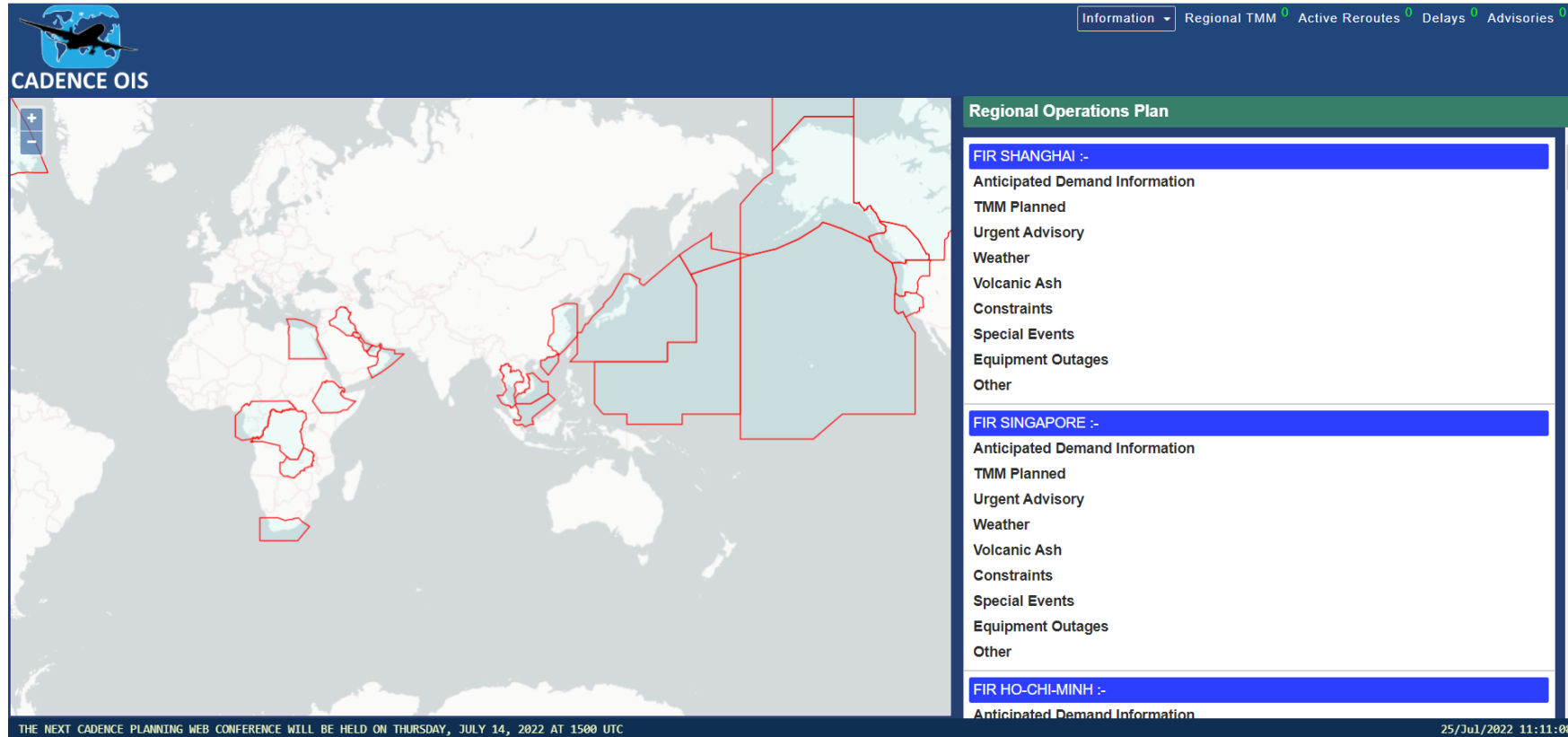
CANSO and CGH Technologies virtual signing – CADENCE  
(March 22, 2021)

CGH Technologies built the CADENA OIS under the contract with the FAA.

CADENA OIS technology has been transferred from the FAA to CGH Technologies.

# CADENCE OIS

– baseline version available at no cost



## Exchange:

- MS documents (Word, PPT, Excel)
- Text, pdf, and picture files

## Enter:

- ATFM Solutions
- Advisories/Notices
- Airport delay
- ATFM Daily Plan
- Calendars
- PASA Route Requests

<https://www.cadenois.org> CADENA OIS version 3.3.1 is the CADENCE OIS baseline. Public domain for read only. Member domain to read and upload information.

# OIS BENEFITS - Operational Examples

## La Soufrière Volcano in Saint Vincent and Grenadines

La Soufrière volcano began visibly active in December 2020, before a full-blown eruption on 9 April 2021



### **Event is Communicated via**

- WhatsApp CADENA Group
- CADENA OIS Urgent Advisories and the associated push email notifications
- CADENA Ops Group email notifications
- Weekly Operational Web Conferences
- Piarco ACC updates posted on the CADENA OIS

# CADENA Status Update of La Soufrière Volcano



Status Briefing  
uploaded to the  
CADENA OIS

CADENA

LA SOUFRIERE

VOLCANO ERUPTION

UPDATE

  
can so  
civil air navigation services organisation

SATURDAY, APRIL 10, 2021

1400Z



CADENA



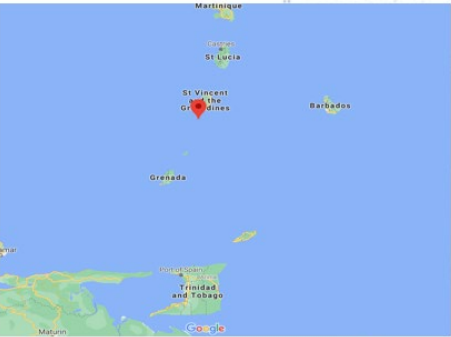
THE PIARCO FIR





CADENA

LA SOUFRIERE OVERVIEW



LA SOUFRIERE VOLCANO UPDATE – 1400 UTC – APRIL 10, 2021

PIARCO UTA/CTA/FIR GENERAL  
INFORMATION

EQUIPMENT OUTAGES	TMMS PLANNED	REMARKS
TBPB A0539/21 NOTAMR A0534/21 Q) TTZP/QNMW/IV/BO/AE/000/99 9/1304N05929W175 A) TBPB B) 2104092325 C) 2104101600 E) DVOR/DME 'BGI' 112.7 MHZ CH74X COMPLETELY WITHDRAWN. DO NOT USE	REROUTES WILL BE IMPLEMENTED TACTICALLY PLEASE REFER TO SLIDE 7 FOR ROUTE IMPACTS	NONE



LA SOUFRIERE VOLCANO UPDATE – 1400 UTC – APRIL 10, 2021

PIARCO UTA/CTA/FIR GENERAL  
INFORMATION

DEMAND	Weather	Staffing
Low to Medium	VOLCANIC ASH – Affecting large portion of the Piarco UTA/CTA/FIR. Please see SIGMET on next page.  No other Significant Weather in the forecast within the Piarco FIR.	Adequate

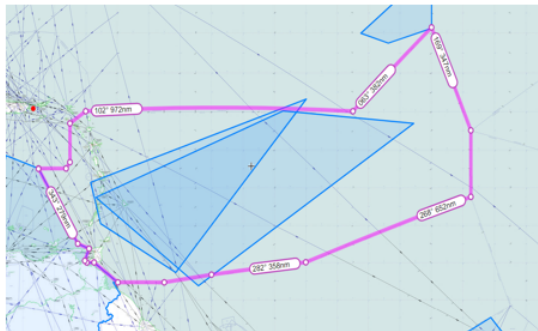




# CADENA Status Update of La Soufrière Volcano

## LA SOUFRIERE VOLCANO UPDATE – 1400 UTC – APRIL 10, 2021

### PIARCO UTA/CTA/FIR IMPACT – ASH SIGMET

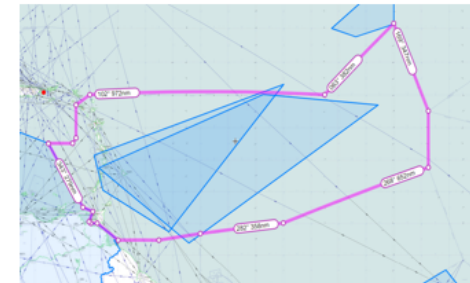


WVCA31 TTPP 101232 RRA  
TTZP SIGMET 2 VALID 101230/101830 TTPP -  
TTZP PIARCO FIR VA ERUPTION SOUFRIERE ST VINCENT  
PSN N1319 W06110 VA CLD OBS AT 0940Z  
SFC/FL520 N1447 W05710 - N1204 W05415 - N0927 W05616  
-  
N1317 W06109 - N1407 W05932 - N1447 W05710 MOV SE  
35KT  
SFC/FL470 N1838 W04758 - N1409 W05401 - N1204 W06103  
-  
N1335 W06117 - N1456 W05822 - N1838 W04758 MOV E  
35KT  
SFC/FL080 N1450 W05846 - N1414 W05939 - N1335 W06119  
-  
N1416 W06141 - N1450 W05846 MOV E 10KT  
FC-ST 10/1530Z VA CLD  
SFC/FL520 N1503 W05553 - N1138 W05037 - N0844 W05450  
-  
N1325 W06113 - N1503 W05553  
SFC/FL470 N1801 W04926 - N1722 W04108 - N1340 W04914  
-  
N1328 W06121 - N1443 W05736 - N1801 W04926  
SFC/FL520 N1503 W05553 - N1138 W05037 - N0844 W05450  
-  
N1325 W06113 - N1503 W05553



## LA SOUFRIERE VOLCANO UPDATE – 1400 UTC – APRIL 10, 2021

### PIARCO UTA/CTA/FIR ROUTE IMPACT



#### TMMs POSSIBLE REROUTES TO BE APPLIED TACTICALLY

USERS ARE ADVISED THAT THE FOLLOWING AIRWAYS, OR PORTIONS THEROF ARE HEAVILY IMPACTED: TACTICAL REROUTES/DEVIATIONS MAY BE IN EFFECT.

UT349 - BTWN OMKI-NOSOB  
UA632 - BTWN ANU-100MILES SOUTH BGI  
UA555 - BTWN DUNTA-100MILES SOUTH BGI  
UM791 - BTWN BGI TO 100MLS SOUTH BGI  
UL576 - BTWN CTRS - PIPUV  
UL454 - BTWN ILURI - ROSLU  
UL329 - BTWN SORRL - 100MILES SOUTH YOLKK  
UA312 - BTWN PPR - DALGA  
UL205 - BTWN ANU - POS  
UA551 - BTWN PERRY - FOF  
UA511 - FULL ROUTE IN TTZP  
UL776 - BTEWN GEECE - KORTO  
UA324 - FULL ROUTE  
UA561 - FULL ROUTE  
UR515 - FULL ROUTE  
ALL EUROPEAN LANDERS INTO TFFR, TFFF, TLPL, TBPB, AND OTHER ECAR TMA FROM THE 18N LINE OF LONGITUDE (AND VICE VERSU S)



## LA SOUFRIERE VOLCANO UPDATE – 1400 UTC – APRIL 10, 2021

### TMA AIRPORTS IMPACT

AIRPORT CLOSURES	AIRPORT OPENING	NOTAM
TVSA – ARGYLE INTL CLSD TILL APRIL 11 1200Z	OPENING APRIL 11 @ 1200z	A0523/21
TVSB – BEQUIA	OPENING TIME TO BE UPDATED	A0545/21
TVSM – MUSTIQUE	OPENING TIME TO BE UPDATED	A0544/21
TVSU – UNION	OPENING TIME TO BE UPDATED	A0543/21
TBPB – ADAMS CLOSED TILL APRIL 10 AT 1800Z	OPENING APRIL 10 @ 1800Z	A0541/21

IMPACTED AIRPORTS	REMARKS
TLPL – HEWANORRA (St. Lucia)	STATUS – OPEN
TLPC – GEORGE CHARLES (St. Lucia)	CONCERNS - MAY BE IMPACTED BY VOLCANIC ASH MATERIAL, AND MAY CLOSE AS NECESSARY.



## LA SOUFRIERE VOLCANO UPDATE – 1400 UTC – APRIL 10, 2021

### OTHER MEASURES

- ATS Management has established WhatsApp group and will convene ad-hoc web conferences, as necessary, to disseminate the latest and most accurate information in a timely manner;
- Contingency plan has been activated and disseminated by ATS team to mitigate issues such as:
  - Impact of VA Clouds,
  - GA aircraft departing impacted to shelter at other TMA airports and airports within adjacent FIRs,
  - Coordination of Humanitarian Flights,
  - Continuous Coordination/Collaboration in order to disseminate the most accurate information in a timely manner.
- Piarco will continue to update the CADENA OIS in a timely manner with the latest and most accurate information.







# OIS BENEFITS – Operational Examples

## COVID Situation

- Display of:
  - The daily COVID-19 operational limitations report
  - Alternate aerodromes information
  - Airline and ANSP outlook for future air traffic operations
- Coordination regarding:
  - ATC-Zero events (ACC closures)
  - Vaccine Priority Flights
  - PASA Route Requests
- Push email notifications

# PASA E2E Requested contingency routes

CADENA OIS

Main

Weekly Conf

Hurricane Conf

Contingency Form

ADP Link Files


PASA Route Requests

Contact List

Lessons Learned

CADENA Manual

≡

 **DELTA** Delta Air Lines

Español

Chat 1

Help

Settings

Logout

▼ Create new PASA Route Request

To ANSP(s) 

Send to ▼

Requestor

City Pair 

SPJC KATL

En-Route ☐

Flight # 

DAL150

Flight Date 

22/Apr/2021

Dept Time 

22

 : 

00

UTC

Route

SPJC ISREN2F ISREN DCT GYV DCT TINPA DCT LEVOR DCT GCM DCT IKBIX Y183 PEAKY Q87 MATLK Q77  
SHRKS DCT LAIRI DCT LARZZ JJEDI2 KATL

Plot


Save as Template

Submit


Some locations or airways in the route ISREN2F, Y183, Q87, Q77, JJEDI2 are not found in the System.  
They are ignored in the plotting, but the route request can still be submitted.  
If you think they are valid locations or airways and should be part of the System, please let Cadena Support know.

+


−



F



A



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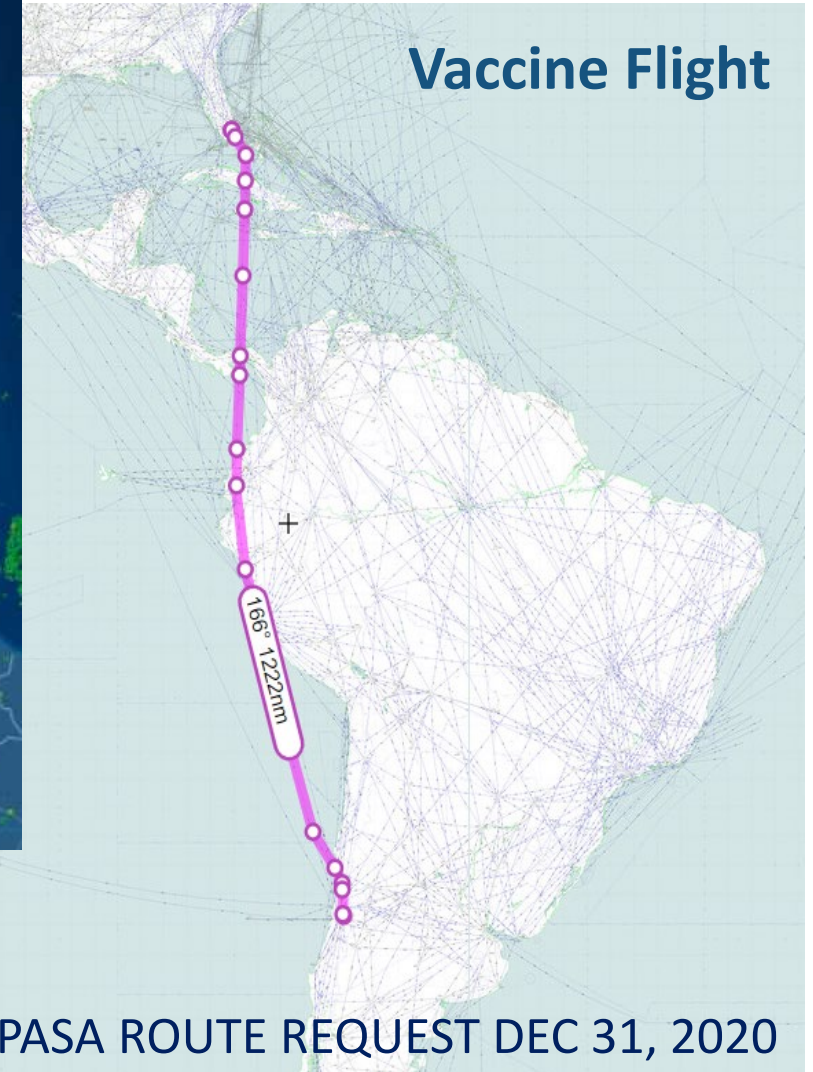
# PASA End-to-End Route Requests - Samples

PASA ROUTE REQUEST  
NOV 16, 2020



PASA ROUTE REQUEST OCT 7, 2020

Vaccine Flight



PASA ROUTE REQUEST DEC 31, 2020

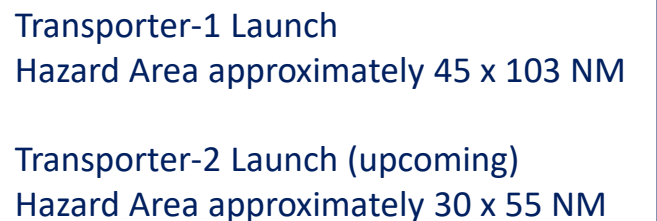
# OIS BENEFITS

## Operational Examples – Space Operations

- FAA Space Operations and CNES share operational information, such as:
  - ✓ Launch schedules
  - ✓ Launch sites
  - ✓ Launch AHAs with coordinates
  - ✓ Re-entry AHAs with coordinates



- ## Transporter Hazard Area Size Comparison





# OIS BENEFITS – Operational Examples

Qualitative Benefits - understood intuitively

- More information sharing, better decisions
- Better coordination, better decisions
- Better decisions, more benefits



Quantitative (monetary - \$USD) Benefits

- UAL - Hurricane Maria Recovery Operation Case Study – \$1.0M-\$5.4M
- JBU - Return Home from Hurricane Maria Case Study – \$182.0K
- AAL - Jamaica Loss of Radar Surveillance Case Study – \$225.0K
- CMP - Jamaica Loss of Radar Surveillance Case Study – \$175.5K
- UAL - Colombia Loss of Satellite Comm Case Study – \$192.0K
- DAL - PASA optimization pilot test (ATL-LIM) - \$368.9K/yr, 1,118,000kg of CO2
- VOI – Filed FPLs via CADENA OIS while AFTN outage - \$690.8K

Numbers in this briefing should not be interpreted literally; however, **the savings achieved by stakeholders are real !**

# Next Steps



- CADENCE TF is available to meet with ISPACG stakeholders to provide:
  - ✓ Additional operational and technical information.
  - ✓ High level demonstrations to management.
  - ✓ In-depth demonstrations to Operational Staff.



**Thank you!**