

Webinar on Disaster Response for the SAM Region - June 27th, 2023

Airport Status Information Tool (ASIT)



ICAO



Block.Aero

We are a 20+ strong community of professionals who **love** aviation



Block.Aero



Todd Siena
Founder & CEO

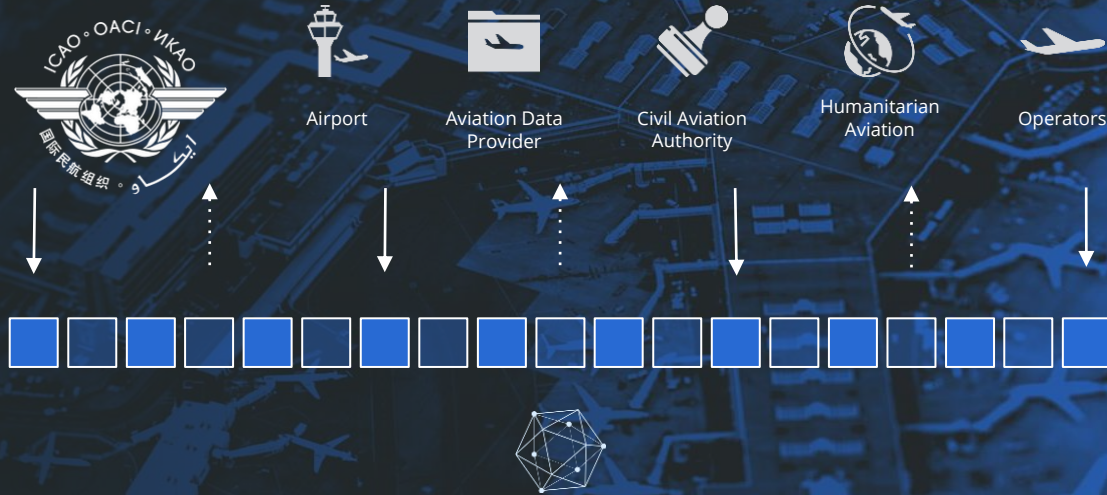
15+ years of experience in aviation, entrepreneurship, management consulting, and supply-chain. Named *Top 40 Under 40* by Aviation Week and listed in the *Future of Aviation* by ICAO. Aerospace industry thought leader and public speaker.



Adam Siena
Co-Founder & CTO

13+ years of enterprise software experience. 7+ years at the innovation and technology division of UnitedHealth Group. BS in Computer Science from the University of Connecticut

Building Resilience with Blockchains





What is a Blockchain?

What are Digital Assets?

...in Humanitarian Aviation?

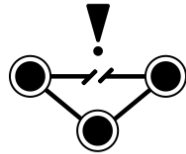


Why Blockchain?

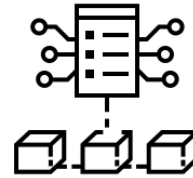
- Key advantages



Encryption /
Immutability and
Role-Based
Access Control



System Redundancy /
No Single Point of Failure



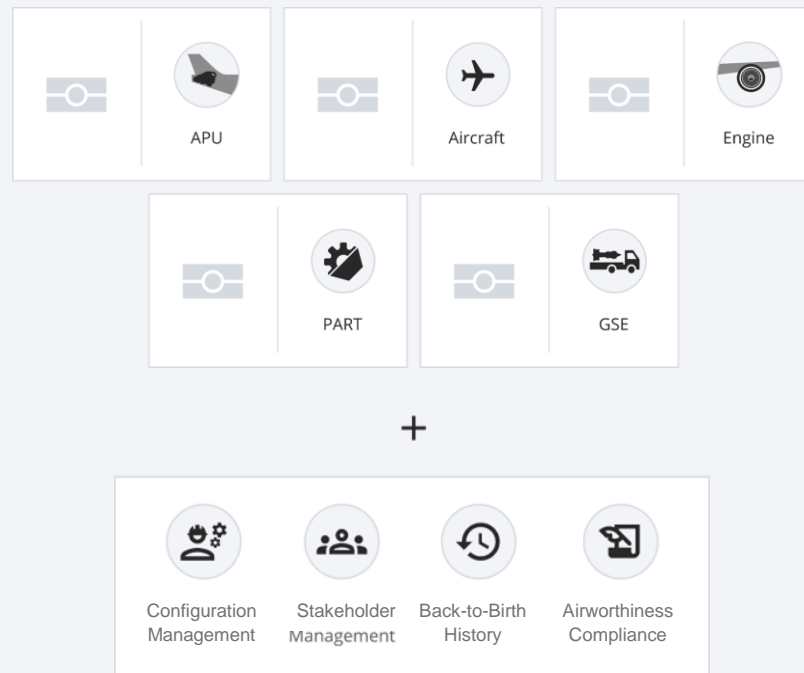
Data Process and
Reporting Standardization
and Automation



Multi-Stakeholder
Status
Management

Data Blocks

- Blocks of data representing certificates, operational status histories, documents, and other formats of standardized records can be appended to Blockchain Aviation Assets (BAA) by asset stakeholders.
- Immutability and encryption of the digital asset profile makes it easy to manage data throughout the lifecycle.



An aerial photograph of an airport terminal building, overlaid with a semi-transparent blue filter. Numerous white airplane icons are scattered across the terminal and surrounding areas, suggesting flight activity. The text "Our ASIT Story" is positioned in the lower-left quadrant of the image.

Our ASIT Story

Current *modus operandi*

- Request for information regarding airport status:

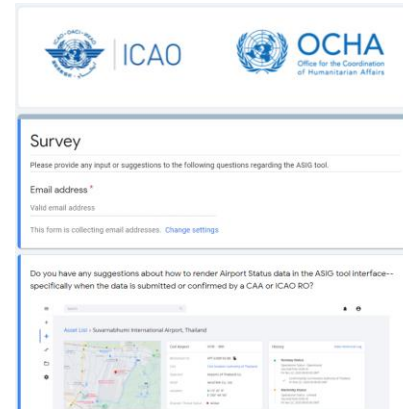
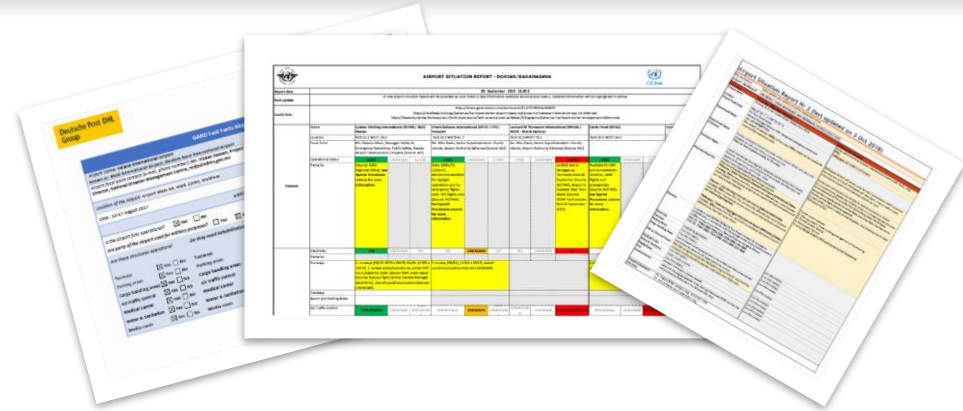
- Triggered by OCHA
- Multiple formats
- Multiple sources
- Multiple versions
- Verified vs Unverified
- Official vs Unofficial
- Timeliness
- Disambiguation



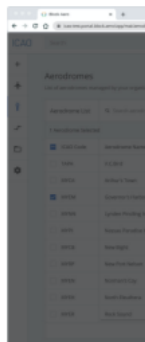


Innovation Partnership

- R&D Process:
 - Review existing ASR reports
 - Survey humanitarian, ICAO RO & state CAA stakeholders
 - Input from subject matter experts
 - Weekly workshops to facilitate design, development & innovation in C19 remote collab environment
 - Leverage existing Block Aero and Hyperledger frameworks for rapid prototyping and deployment
 - Agile approach to start with MVP and improve each iteration



Step 3: A popup will open and you "Confirm".



Field Name

Disaster Threat Status

By changing the disaster threat

- Aerodromes will start to receive runways, and special procedures

By changing the disaster threat

- Aerodromes will start to receive runways, and special procedures
- Begin generating ASR report
- Send information requests to

By changing the disaster threat status to "Normal":

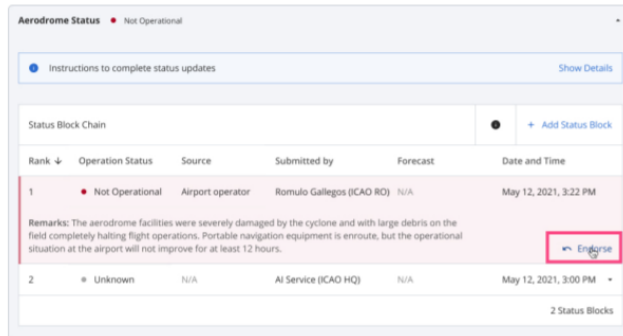
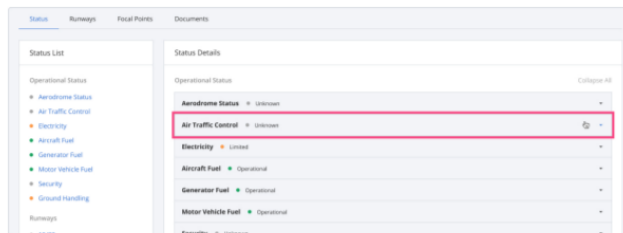
- Aerodromes will cease receiving automatic data feeds and no longer generate new ASRs.

- ICAO AI Services will result in all status lists having a nearly real-time update status (15 mins).

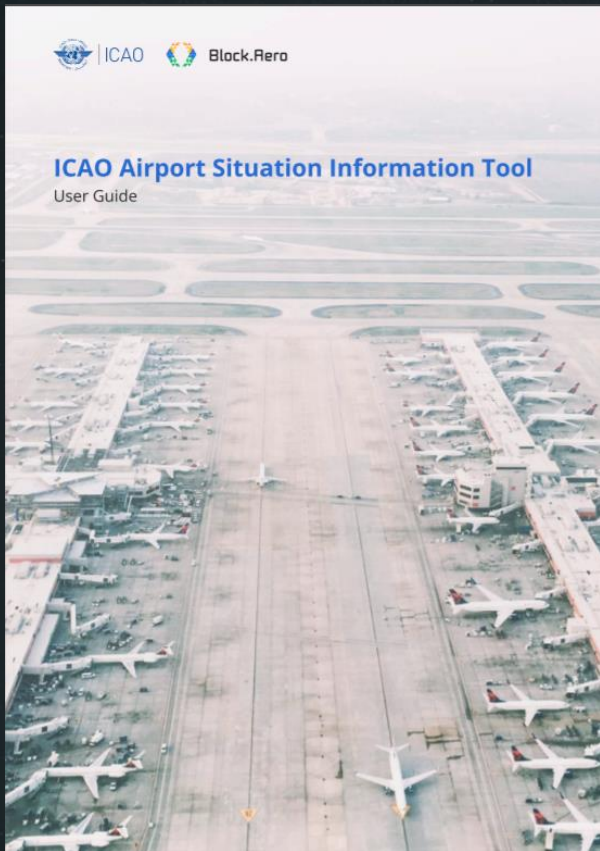
5.3 Endorsing a Status update

Status blocks on the chain of updates, whether from an automated source or manually entered can be endorsed by a user from the CAA or RO.

Step 1: Expand the status that you would like to update and click on "Endorse".



Status Endorsement





- Organizational Roles
 - Aerodrome (CAA)
 - ANSP (CAA)
 - ICAO RO

The screenshot displays the ICAO portal interface for an aerodrome. The main content area shows the 'Status' tab, which includes a 'Status List' and 'Operational Status' details. A modal dialog titled 'Endorse Status?' is open, providing instructions on how to endorse status updates and adding a new entry to the Status Block Chain. The dialog includes a table with the following data:

Operation Status	Source
Operational	NOTAM
Forecast Condition	Forecast Time (hours)
→ N/A	N/A

Remarks: PIARCO MORNE CATHERINE SSR U/S DUE MAINT. CREATED: 27 Feb 2023 14:10:00 SOURCE: TTPPYNX

Submitted by: ICAO API (International Civil Aviation Organization) Submitted at: Feb 27, 2023 3:00 pm

Buttons: Cancel, Endorse

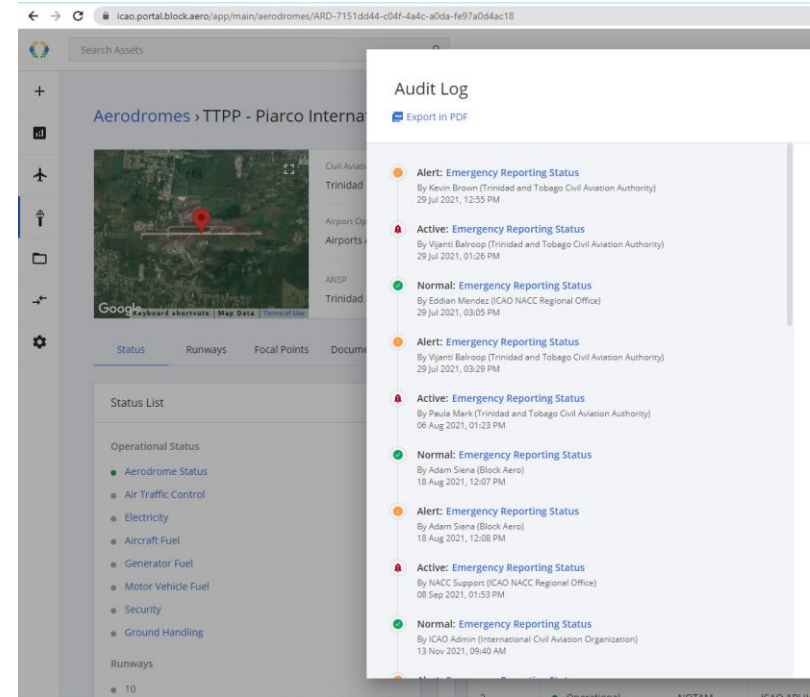
Below the dialog, a 'Status Block Chain' table is visible:

R...	Operation Status	Source	Submitted By	Date and Time
1	Operational	NOTAM	ICAO API (Internation	27 Feb 2023, 3:00 pm
2	Operational	NOTAM	ICAO API (Internation	27 Feb 2023, 2:00 pm
3	Operational	NOTAM	ICAO API (Internation	21 Feb 2023, 4:00 am

At the bottom, the 'Air Traffic Control' status is shown as 'Unknown'.



- Simulation Participant Roles
 - Facilitator
 - ASIT App Operator
 - Focal Point Role Players
 - Observers





Two Approaches on Each Type of Scenario

- **Scenario 1: Slow Onset**
 - Still rapidly Evolving
 - More demanding test of baseline flow
 - More closely following script
- **Scenario 2: Rapid Onset**
 - Strive to assess matching of ASIT with State emergency management communication protocols
 - Free play / sandbox



ASIT Information Management Flows

- Direct Method with CAA on ASIT
- Indirect Method with RO Coordination
- NOTAM Method with ICAO API Service



ICAO



Block.Fero



Scenario 1 / Turn 2

Description

- On April 7th 2021, ICAO NACC Regional Office, Eastern Caribbean (E/CAR) States, receive news from UWISRC that volcanic eruption is imminent within next 48 hours.
- ECCAA **decides** to delegate coordination role to Trinidad and Tobago CAA in the event of eruption.
- ICAO NACC Regional Office and Eastern Caribbean (E/CAR) States make decision to change disaster status threat to **Active** to appropriate airports.



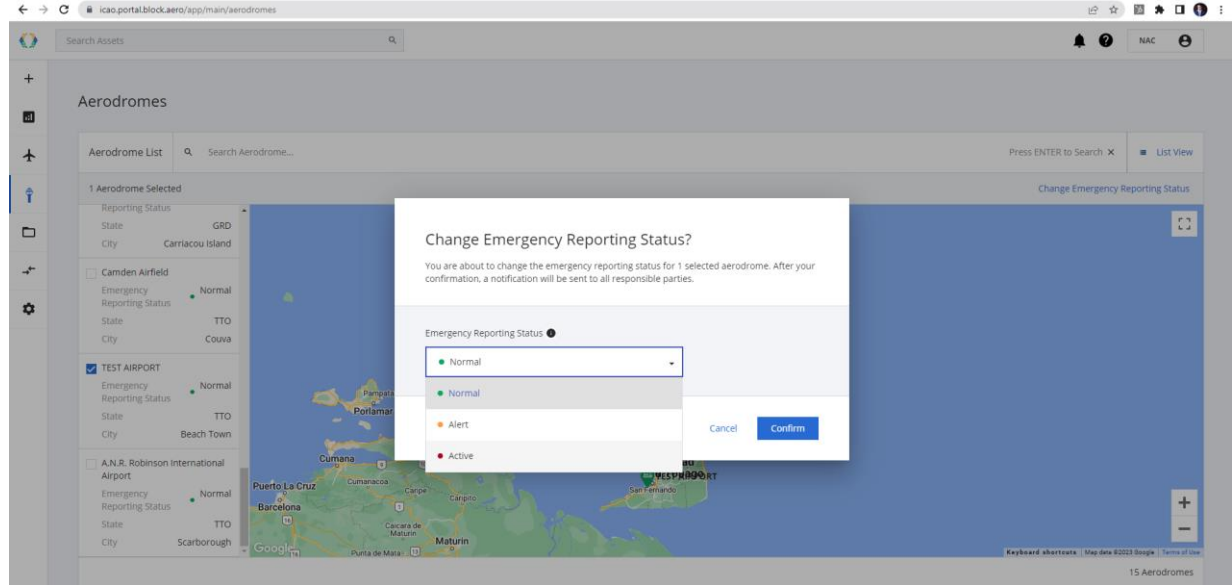


- Each Turn
 - Scenario Setting
 - Information Brief
 - Action
 - Discovery



Description SOTO

- A Hurricane is approaching
- TTCAA and NACC decide to set disaster status for TEST airport to 'active'





Action

- Set active disaster threat status at TEST
- Make sure focal points are up-to-date

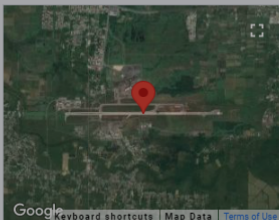


Search Assets

Aerodromes > TTPP - Piarco International Airport

Send ASR

Change Emergency Reporting Status



Civil Aviation Authority
N/A

Airport Operator
Airports Authority of Trinidad and Tobago

ANSP
Trinidad and Tobago Civil Aviation Authority

Location
Piarco, Trinidad & Tobago

FIR Code
TTZP

Audit Log

- ✔ **Operational: Aerodrome Status**
By ICAO API (International Civil Aviation Organization)
27 Feb 2023, 02:30 PM
- ✔ **Operational: Aerodrome Status**
By ICAO API (International Civil Aviation Organization)
27 Feb 2023, 02:00 PM

[View All](#)

Status Runways Focal Points Documents NOTA

Focal Points List

🔍 Search Focal points...

1 Focal Point Selected

<input type="checkbox"/>	Service Agency	Contact Title
<input checked="" type="checkbox"/>	Air traffic control units	Manager Air
<input type="checkbox"/>	Aerodrome administration	Unit Chief Ae
<input type="checkbox"/>	Air traffic control units	Unit Chief AC
<input type="checkbox"/>	Air traffic control units	Air Traffic Co

Add Focal Point

Please notice that focal points list can be viewed by all member organizations of the network.

Service Agency

Airport Status Type

Contact Title

Contact Name

Contact Number

Contact Email

Cancel Save Focal Point

+ Add Focal Point

Delete

Email Airport Status Type

ate@caa.gov.tt

@caa.gov.tt

@caa.gov.tt

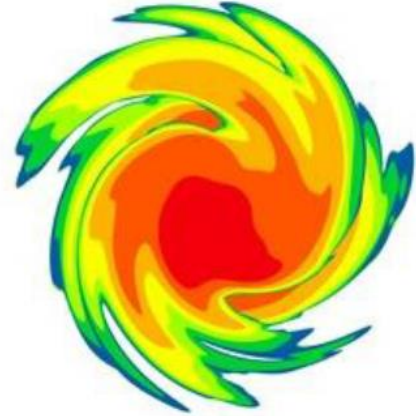
@caa.gov.tt

4 Focal Points



Description S0T1

- A Hurricane has hit TEST airport





Action

- Please read the briefs for your team
- Clarify the situation at TEST airport with ASIT

The slide is a presentation slide for an ASIT Tool Simulation Exercise. It features the ICAO logo and 'UNITING AVIATION' text in the top left, and 'NO COUNTRY LEFT BEHIND' with an airplane icon in the top right. The main title is 'ASIT Tool Simulation Exercise' in large blue font, followed by 'SIMULATION INFORMATION BRIEF' in a smaller blue font. The content includes a warning 'You have no internet!' and a request to 'Clarify the operational status of TTPP if the RO is able to make contact with you.' followed by a numbered list of seven items detailing operational issues at an airport.

ICAO | UNITING AVIATION NO COUNTRY LEFT BEHIND

ASIT Tool Simulation Exercise

SIMULATION INFORMATION BRIEF

You have no internet!

Clarify the operational status of TTPP if the RO is able to make contact with you.

1. TTAA informed you emergency generators and aircraft refueling equipment have been damaged by hailstones from the volcano.
2. Grid power is browning out and the airport generators need to be activated.
3. TTAA informed you that only 1 of the backup generators is still operational. The generator fuel depot is not affected.
4. There are security staff onsite and the situation is not escalating.
5. Ground handling is out of service and mainly focused on helping repair GSE equipment.
6. Ashfall has clogged filters and short-circuited ground handling equipment. Now, only 1 of 4 K-loaders are currently available.
7. The water system shut down due to the heavy ashfall and is making it difficult to repair equipment. In about 12 hours several large water tanker trucks are scheduled to arrive at POS to aid in the cleanup.



Search Assets

Trinidad and Tobago Civil Aviation Authority POS

Aerodrome Status ● Operational

View All

Status Runways Focal Points Documents NOTAMS

Add Aerodrome Status

Please provide the latest available information on aerodrome. This update will be added to the Status Block Chain.

Operation Status: Source:

Forecast Condition - Optional: Forecast Time - Optional:

Remarks - Optional:

Cancel Submit

Operational Status

- Aerodrome Status
- Air Traffic Control
- Electricity
- Aircraft Fuel
- Generator Fuel
- Motor Vehicle Fuel
- Security
- Ground Handling

Runways

- 10
- 10/28

Special Procedures

- Slot Allocation
- Prior Permission

Air Traffic Control ● Unknown

Electricity ● Unknown

Aircraft Fuel ● Unknown

27 Feb 2023, 3:00 pm

27 Feb 2023, 2:00 pm

21 Feb 2023, 4:00 am

3 Status Blocks



Search Assets



Trinidad and Tobago Civil Aviation Authority POS

Operational

[View All](#)

Status Runways Focal Points Documents NOTAMS

Status List

Operational Status

- Aerodrome Status
- Air Traffic Control
- Electricity
- Aircraft Fuel
- Generator Fuel
- Motor Vehicle Fuel
- Security
- Ground Handling

Runways

- 10
- 10/28

Special Procedures

- Slot Allocation
- Prior Permission

Add Aerodrome Status

Please provide the latest available information on aerodrome. This update will be added to the Status Block Chain.

Operation Status

● Limited

Source

Civil Aviation Authority

Forecast Condition - Optional

↕ Deteriorating ×

Forecast Time - Optional

Next 12 hours ×

Remarks - Optional

Heavy ashfall is expected to hit the aerodrome imminently

Cancel

Submit

[Collapse All](#)

[Show Details](#)

● + Add Status Block

Date and Time

27 Feb 2023, 3:00 pm

27 Feb 2023, 2:00 pm

21 Feb 2023, 4:00 am

3 Status Blocks

Air Traffic Control ● Unknown

Electricity ● Unknown

Aircraft Fuel ● Unknown



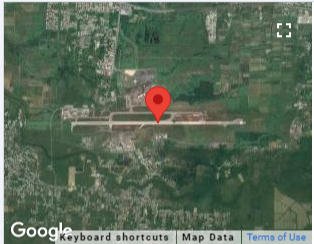
Search Assets



Aerodromes > TTPP - Piarco International Airport

[Send ASR](#)

[Change Emergency Reporting Status](#)



Civil Aviation Authority	Location	FIR Code
Trinidad and Tobago Civil Aviation Authority	Piarco, Trinidad & Tobago	TTZP
Airport Operator	ICAO RO	Emergency Reporting Status
Airports Authority of Trinidad and Tobago	ICAO NACC Regional Office	● Active
ANSP	IATA Code	Aerodrome Status
Trinidad and Tobago Civil Aviation Authority	POS	● Operational

Audit Log

- **Operational: Aerodrome Status**
By ICAO API (International Civil Aviation Organization)
27 Feb 2023, 03:00 PM
- **Operational: Aerodrome Status**
By ICAO API (International Civil Aviation Organization)
27 Feb 2023, 02:00 PM

[View All](#)

Status Runways Focal Points Documents NOTAMS

All Document Type Any date

- [ASR](#)
18 Nov 2022
e3b0c44298f1c14...
- [ASR](#)
01 Jul 2022
bcfe2205aaace6479...
- [ASR](#)
29 Jun 2022
deec694d6bcd68...
- [ASR](#)
28 Jun 2022
aa880a84f6b2c2f4...
- [ASR](#)
28 Jun 2022
cc8b5975005945c...
- [ASR](#)
28 Jun 2022
b5e990a3ce8e25e...
- [ASR](#)
21 Jun 2022
ce7914c51ab1e03...
- [ASR](#)
21 Jun 2022
762fe40c2ea7d2e...
- [ASR](#)
21 Jun 2022
8338b1170c29708...



Description S0T2

- In the aftermath, CAA is having difficulty to access the ASIT tool





Action

- Please read the briefs for your team
- Clarify the situation at TEST airport with ASIT



ASIT Tool Simulation Exercise

SIMULATION INFORMATION BRIEF

You have no internet!


Clarify the operational status of TTPP if the RO is able to make contact with you.

1. TTAA informed you emergency generators and aircraft refueling equipment have been damaged by hailstones from the volcano.
2. Grid power is browning out and the airport generators need to be activated.
3. TTAA informed you that only 1 of the backup generators is still operational. The generator fuel depot is not affected.
4. There are security staff onsite and the situation is not escalating.
5. Ground handling is out of service and mainly focused on helping repair GSE equipment.
6. Ashfall has clogged filters and short-circuited ground handling equipment. Now, only 1 of 4 K-loaders are currently available.
7. The water system shut down due to the heavy ashfall and is making it difficult to repair equipment. In about 12 hours several large water tanker trucks are scheduled to arrive at POS to aid in the cleanup.



ica.portal.block.aero/app/main/aerodromes/ARD-7151dd44-c04f-4a4c-a0da-fe97a0d4ac18

Search Assets



Airport Operator: Airports Authority of Trinidad and Tobago
 ICAO RO: ICAO NACC Regional Office
 Emergency Reporting Status: Active

ANSP: Trinidad and Tobago Civil Aviation Authority
 IATA Code: POS
 Aerodrome Status: Operational

Status Runways Focal Points Documents NOTAMS

Status List

- Operational Status
 - Aerodrome Status
 - Air Traffic Control
 - Electricity
 - Aircraft Fuel
 - Generator Fuel
 - Motor Vehicle Fuel
 - Security
 - Ground Handling
- Runways
 - 10
 - 10/28
- Special Procedures
 - Slot Allocation
 - Prior Permission

Status Details

Operational Status

Aerodrome Status ● Operational

Instructions to complete status update

Status Block Chain

R...	Operation Status	NOTAM	ICAO API (Internation	27 Feb 2023, 2:00 pm
1	● Operational			
2	● Operational	NOTAM	ICAO API (Internation	27 Feb 2023, 2:00 pm
3	● Operational	NOTAM	ICAO API (Internation	21 Feb 2023, 4:00 am

Air Traffic Control ● Unknown

Endorse Status?

You're about to endorse status updates. This action will add a new entry to the Status Block Chain.

Operation Status	Source
● Operational	NOTAM
Forecast Condition	Forecast Time (hours)
→ N/A	N/A
Remarks	
PIARCO MORNE CATHERINE SSR U/S DUE MAINT. CREATED: 27 Feb 2023 14:10:00 SOURCE: TTPPYNYX	
Submitted by	Submitted at
ICAO API (International Civil Aviation Organization)	Feb 27, 2023 3:00 pm

Cancel **Endorse**



How to Get Started with ASIT



ASIG Solution Features

- New tool implemented with blockchain + API + cloud technology:
 - Automated API data feeds
 - Standardized reporting format
 - Standardized reporting process
 - Known sources
 - Version control and traceability
 - Validation by state authorities
 - Immutable record of events
 - Analytics for continuous improvement of emergency information management

Document Details

Document ID
DOC-d616aaef-43c1-47de-90eb

Document Type
asr

Document Number
N/A

Revision Date
N/A

Issuer Organization
N/A

Submitted by
NACC Support

149%
TTTPP
Aerodrome ID
A60-71510e66-c08f-4a4c-a92a-fc87a064c111

ICAO Powered by Block-Pass

Airport Status Overview | TTPP - Piarco International Airport 18 Nov 2022, 02:05 PM UTC

Airport Status Overview

Operational Status

Aerodrome Status	Limited
Air Traffic Control	Limited
Electricity	Limited
Aircraft Fuel	Operational
Generator Fuel	Operational
Motor Vehicle Fuel	Not Operational
Security	Unknown
Ground Handling	Unknown

Runways

Runway -10	Unknown
Runway -10/28	Unknown

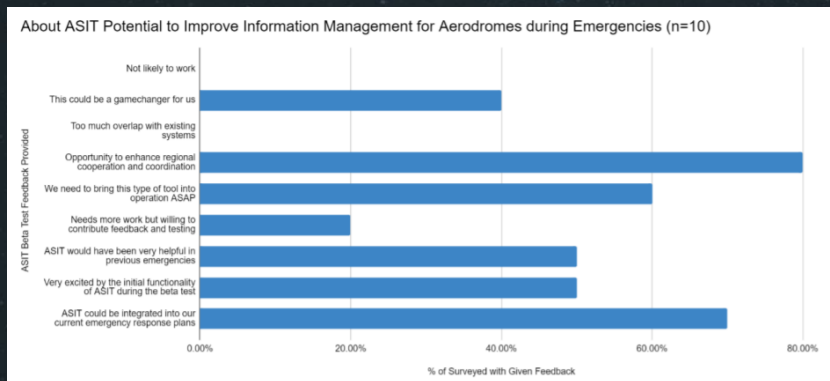
Special Procedures

Slot Allocation	Required
Prior Permission	Unknown

< 2 / 16 >

Survey on ASIT benefits for Information Management at Airports

- ▶ Opportunity to enhance regional cooperation and coordination
- ▶ ASIT could be integrated into our current emergency response plans
- ▶ Could be a gamechanger





For example:

- **Operational Status Types**
 - What about water facilities? Storage facilities?
 - X is unclear because it might cause Y
 - ABC could be helpful, if it included XYZ
- **Documents**
 - What about grid maps?
 - What about emergency plans?
- **ASRs**
 - I would like to see X, Y, and Z
 - Because it would help me A, B, C

Airport Situation Report

TTPP - Piarco International Airport
Piarco, , Trinidad & Tobago

Revision Date: 29 Jun 2022, 10:15 GMT

Aerodrome Name Piarco International Airport	ICAO Code TTPP
CAA Trinidad and Tobago Civil Aviation Authority	ICAO RO ICAO NACC Regional Office
Airport Operator Airports Authority of Trinidad and Tobago	Disaster Threat Status • Normal
ANSP Trinidad and Tobago Civil Aviation Authority	Aerodrome Status • Operational
Location Piarco, , Trinidad & Tobago	
FIR Code TTTP	
Aerodrome ID ABD-7151d4d4-c0df-4a4c-a0da-fe97a0d4ac18	

ICAO | Powered by BlackArc

Airport Status Overview | TTPP - Piarco International Airport

29 Jun 2022, 10:15 GMT

Let's start a conversation and schedule your first ASIT demo

✉ cdamar@icao.int

todd.siena@block.aero

