TE MANA TAURANGA KUKI AIRANI
AIRPORT AUTHORITY
'THE GATEWAY TO THE WORLD...'

COOK ISLANDS

ATS infrastructure, constraints /issues and desired enhancements

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CRV Presentation

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Presentation Overview

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Introduction

The Airport Authority Cook Islands (AACI) is a State-Owned Enterprise established in April 1986, responsible for owning and operating both Rarotonga International Airport and Aitutaki Airport.

In line with our commitment to advancing modern Air Traffic Services (ATS) infrastructure, AACI submitted a request to PCCW Global on July 2, 2024, to join the Common Regional Virtual Private Network (CRV). On February 5, 2025, PCCW Global confirmed our application and service order.

As a small airport island-state ANSP, this presentation provides an overview of the challenges we have encountered and the potential improvements necessary to align with regional and global aviation standards.

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ATS Infrastructure

Rarotonga airport ATS infrastructure consist of following facilities:

- ❖ Communications
- ❖ Navigations
- ❖ Metrological systems
- ❖ Surveillance

Aitutaki airport – no ATS/FS
- ❖ Communications
- ❖ Navigations
- ❖ Metrological Systems

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Communications infrastructure

Rarotonga airport -ATS
Aeronautical Fixed Telecom Network – AFTN,Voice (PASNET- VSAT)
VHF comms – 118.1 mains / 121.9Mhz -ground
Voice Comm Switch – Frequentis VCS 3020X
HF TX/RX – Barrett Radios
HF Fixed Rx site –Barrett Radios
ADDCOM –Voice recorder
IDD – Oceanic Direct line
Satellite Phone
Maritime VHF CH 16 – Sea Search / Rescue

Aitutaki airport
VHF comms – 118.3 mains
Maritime VHF CH 16 – Sea Search / Rescue
UHF –Base /Portables RFS / Emergencies

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Navigations Infrastructure

Rarotonga International Airport

Ground Base Navigations

- Enroute Homing Facilities – Dual Selex DVOR 1150A / Selex DME 1119A

    – RG NDB – Nautel NDR 500

- CAT1 – ILS , 08 and 26 ILS dual Indra NORMAC NM7013B3 Loc / GP

- ILS DME – 08/26 dual Indra LDB 103

- PAPI – Full Precision Approach Path Indicators – 08/26 RWY

- RNAV Approaches

Aitutaki Airport

- Enroute Homing Facility - NDB Nautel 125W Vector

- PAPI – Appreviated Precision Approach Path Indicator- 14/32 RWY (LH approach only)

- RNAV Approaches

Metrological Infrastructure

Rarotonga International Airport

- AACI has it's own Vaisala Metrological System – CH1,Ch2 and CH4 (50foot)to provide ATS controllers with real-time metrological data and conditions for flight operations.

- AWOS –provide real-time automated metrological data for ATS and Pilots . AACI maintains this system . Metar via AFTN

- **Aitutaki Airport**

- AWOS system – provide real-time weather conditions Met Service CIS owns

Surveillance Infrastructure

Rarotonga Airport

- ADS-B Automatic Dependence Surveillance –Broadcast, use for monitoring purposes only – not procedural.

Aitutaki Airport

- none

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03

Constraints /Issues

Aging Infrastructure
- ❖ HV 11kv power cable >50years old
- ❖ ATS Tower >50years old relocation 2028-2029-ADB
- ❖ AI NDB aerial site erosion –cyclone

Equipment's
- ❖ AFTN – timing issue airways relinquish support -CADAS
- ❖ VCS –Frequentist – over 20 yrs
- ❖ VHF – coverage to south east of Rarotonga compromised hills south of airstrip.
- ❖ Metrological sensors –Procurement >3 months replacements
- ❖ HF – has its moments , ionospheric.
- ❖ AWOS – operational cost.

Service Level Agreements
Critical systems – Technical support costly
Marine Fiber connection – ACL/Vodafone costly

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Desired Enhancements

Modernization ATS infrastructure
- ❖ Upgrade VCS to enhance operation efficiency
- ❖ Install Alternate VHF site improve coverage and redundancy.
- ❖ Replace AFTN – CADAS (CRV- platform integration)
- ❖ ADSB- implement procedural , PASO recommendation 2024 audit
- ❖ install second ADSB –Aitutaki extend virtual coverage
- ❖ Replace HF with Space VHF,-2019 Sky kraft MOU.

Strategic Policy and investments
- ❖ Align with ICAO's Global Air Navigation Plan (GANP).
- ❖ Develop review current Service Level Agreements (SLAs) for critical facilities to enhance operational resilience and ensure compliance.

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Conclusions

❖ Modernizing our ATS infrastructure remains our top priority, ensuring our air navigation services are future-proof and inline with international standards. However, as outlined, this process presents several challenges.

❖ We wish to learn and share your experiences with integration CRV solutions network for voice and data exchange.

❖ CRV –ORG to assist us a small Pacific island –ANSP. in facilitating implementation of CRV solution.

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