

# FIJI ADS-B IMPLEMENTATION

ISPACG MEETING

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**AIRPORTS FIJI**  
L I M I T E D



# Current Status of ADS-B (STAGE 1)

Improved the situational awareness:

- Procedural Approach and Aerodrome controllers are able to view display of aircraft activity
- OCA (Area) controllers already have a plan view display by virtue of the Aurora Automation System.

# Current Status of ADS-B (STAGE 1)

Surveillance is achieved by:

- CAAF mandate. All Fijian registered aircraft are required to have transponders, (Mode-S ES) transponder preferred.
- For non-Fijian registered aircraft (international) arriving/departing Nadi MLAT surveillance installed in parallel with ADS-B. This permits surveillance of aircraft that have Mode A/C transponder.
- Subsequent migration will occur towards the primary use of an ADS-B system only.

# Current Status of ADS-B (STAGE 1)

Aurora already operational in the OCA environment.  
This serves as a proving ground for:

- System reliability
- Controller familiarity
- Training requirements
- Adaptation

# ATM Procedures (STAGE 1)

There are no changes to existing ATM procedures.

- No change to airspace design;
- No change to pilot position reporting requirements;
- Airspace structure (controlled airspace and its boundaries) remains the same;
- No change to duty/job descriptions in Fiji MATS

# Documentation(STAGE 1)

Fiji MATS to make reference to Electronic Strips (E-Strips)

Fiji MATS to legitimize the use of the ASD for situational awareness only in:

- Aerodrome control
- Approach control
- Area (OCA) control

# Licensing/Relocation (STAGE 1)

- No change to licensing.
- All controllers, OCA (Area) and Approach remain procedural controllers.

## Relocation of working positions

- There is no relocation of operational positions.
- Current workstation location and airspace responsibilities remain the same.

# Training (STAGE 1)

Equipment (ASD) Course for Aerodrome/Approach ATCO's was conducted to:

- Ensure familiarity with keyboard/mouse/commands required to interface with the Aurora system.
- Ensure that the current flight progress manipulative processes are efficiently input into Aurora
- Consider those actions specific to Aerodrome and Approach Control



# Other Training Considerations (STAGE 1)

Procedural controllers:

- Remain focused on the core task of providing procedural control.
- Read information accurately off a screen to :
  - confirm a procedural separation is in place or has been established.
  - facilitate situational awareness updates traffic flow in real time.
- Constant monitoring of screen not required(snapshot at regular intervals)

# Other Training Considerations (STAGE 1)

Aerodrome controllers:

- Remain focused on maintaining a constant watch on all operations on and in the vicinity of the aerodrome as a primary task.
- Read information accurately off a screen to facilitate situational awareness updates traffic flow in real time.

# Benefits of Stage 1

Significantly improved situational awareness by Controllers will mean:

- Conflicts start and end time will be significantly more precise.
- Much improved efficiency of airspace utilization.
- Anticipation/Traffic flow significantly improved by graphical presentation.
- Positional information/traffic information which is timely/accurate/and able to be acted upon with greater efficiency
- Possible reductions in RTF workload.
- Improved Search and Rescue facilitation.

# Stage 2 (Proposed timelines?)

Objective:

- Training and licensing of controllers to Surveillance rating standard required. At the end of this stage an Area Surveillance rating would be issued at the same time under the auspices of having an Approach Surveillance Rating.
- Introduction of Surveillance Service

# Training and licensing

- Import expertise.
- Subject to CAAF endorsement, to allow “first-of-type rating” conducted outside the “live” operational environment. (Simulator)
- Improve current training system functionality to assure CAAF of the fidelity of the training processes. AFL procurement matter, work on a final plan is ongoing and expected to be in place by the end of 2017 or if late, during the first quarter of 2018.

# Surveillance Service

- able to provide sequencing to Nadi and;
- also perform the functions of Area surveillance within the confines of the current Nadi Sector (CTA).
- vector for separation and/or sequencing for Nausori arrivals/departures only and is limited because:
  - Nausori CTR upper limit remains at 9,500 ft.
  - Nausori Approach remains procedural
  - Nadi Sector remains the same and there is limited airspace for:
    - Vectoring for separation
    - vectoring for sequencing

# Licensing

Present to CAAF a case for issuing:

- Surveillance Rating based on fidelity of the training system
- Surveillance

# Documentation

- Local questions relating to validating an Approach Surveillance Rating at Nadi required
- Position description required in FMATS
- FIS location



# Benefits of Stage 2

- Surveillance licensing process has started.
- The process of monitoring the ASD (surveillance responsibility) is more in line with the presence of the screen in the prime work space (human factors)
- Vectoring for sequencing and the application of a minimum 5 NM separation facilitates enhanced efficiency of airspace utilization
- If the extended Area Sector CTA is established at the same time (airspace change) then the greatest benefit of this Stage is the solving of conflicts in the vicinity of NEMAL & Savusavu with surveillance.

# STAGE 3 (Feb 2015-Feb 2018)

If Stage 3 required if insufficient controllers have been rated and validated for Surveillance at the beginning of Stage 2. This could occur if:

- No Surveillance rated controller(s) (e.g. radar rated controllers) are available to be imported to Fiji to provide the initial 'seed'.
- Integrity of Aurora Simulator does not reach the standard required to credit towards the 180 hours ICAO requirement for initial issue of Surveillance rating, outside the "live" operational environment.

# Objective

If the revised domestic airspace not introduced at Stage 2 then Stage 3 would apply.

Establish an Area Sector to the East that will provide:

- Extended Area surveillance
- Sequencing into NFNA
- FIS responsibilities within Vanua Sector, currently undertaken by the Local Flight Information Services Officer, or as determined otherwise by a safety assessment.

# Licensing

The stage is dependent on numbers only therefore there are no “first of type” rating and validation issues - these have been addressed in stage 2.

# Documentation

- The boundary between Nadi & Nausori sectors may need moving to the East.
- No approach surveillance NFNA
- Nausori TWR controllers remain responsible for Nausori approach, no change to existing procedures and responsibilities
- Arrivals vs. arrivals
- Arrivals vs. departures
- Arrivals vs. missed approach
- Departures vs. missed approach
- Departures vs. departures

