

Session 2 – Use of data link for operational improvements and linkage to CNS performance requirements

“A South Pacific Perspective from Auckland Oceanic (NZZO)”

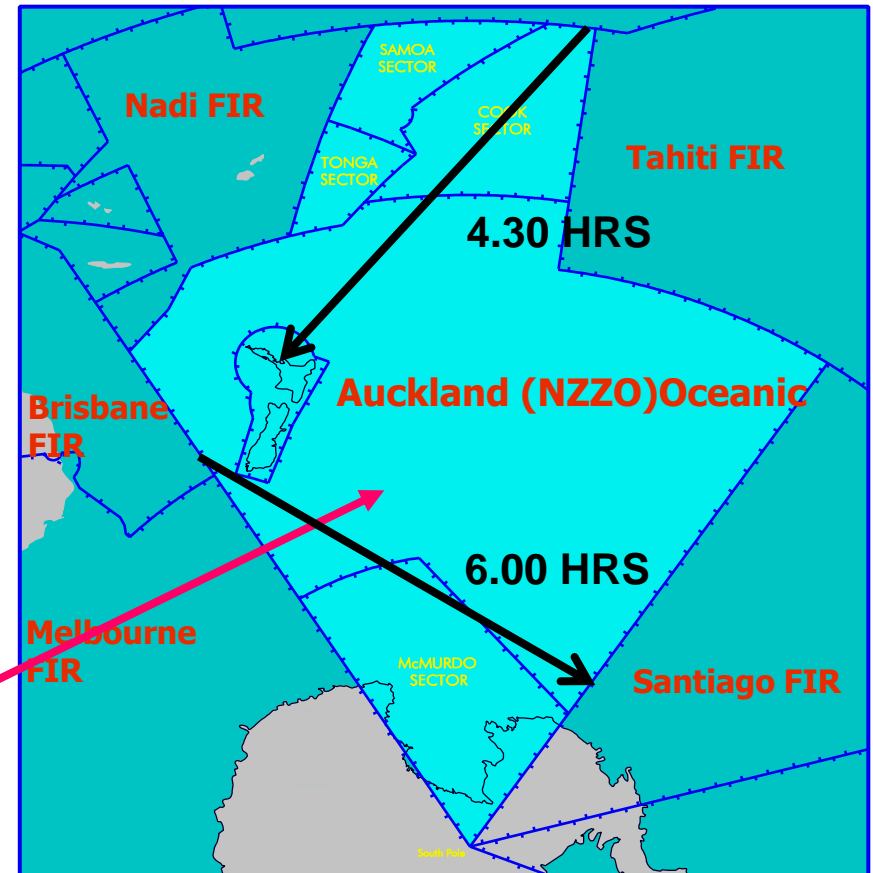
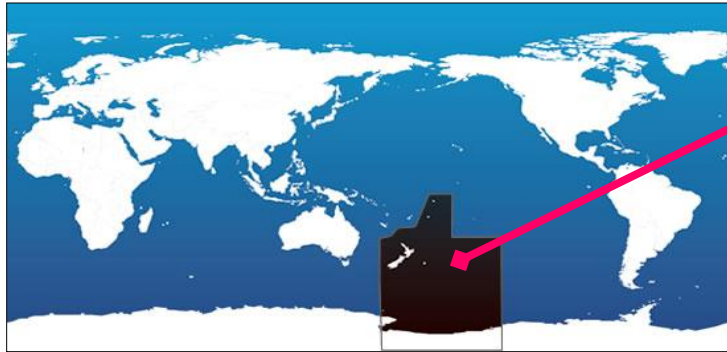
NAT PBCS Seminar

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Overview – Auckland (NZZO) Oceanic FIR

- Normally single sector operation.
- ATM Ground System
 - Oceanic Control System (OCS).
 - Integrated FANS1/A
 - Conflict probe
 - AIDC
- 300 flights on a (very) good day.
- 50% flights are FANS1/A equipped.
 - Nearly 100% long haul FANS1/A



Data link - Enabling Benefits

- **Operational improvements using FANS1/A CPDLC and ADS-C data-link are predicated on certain communications, surveillance, and navigation requirements.**
- **We have an obligation to ensure that aircraft and operators are meeting these requirements.**
- **Operational improvements from FANS1/A data-link are often supported by other infrastructure e.g. ground system automation and AIDC, if the data-link benefits are to be fully implemented with an appropriate level of safety.**
- **Operational improvements with global applicability also require globally agreed procedures.**



Data link – Supporting infrastructure

- **Supporting infrastructure to enable operational benefits:**
 - **In Oceanic/Remote airspace significant benefits can be realised through DARP.**
 - ❖ **DARP requires AIDC to communicate route changes to downstream ANSP.**
 - ❖ **No AIDC = No DARP.**
 - **In Oceanic/Remote airspace significant benefits can be realised through separation reduction.**
 - ❖ **Requires effective performance monitoring and problem reporting to ensure data link performance meets required standards**
- **Need a performance based system and a culture of continuous performance improvement.**



Data Link Benefits – User Preferred Routes

- **Some SOPAC ANSP required data link for User Preferred Routes (UPR) although this has never been a requirement in NZZO.**
- **UPR provide considerable benefit to operators.**
 - ❖ **Some restrictions on Tasman Sea routes between New Zealand and Australia.**
 - ❖ **Most long-haul flights transiting NZZO between Australia/New Zealand and North/South America operate UPR.**
 - ❖ **UPR are also available between New Zealand and Japan.**



Data Link Benefits – DARP

- DARP (Dynamic Airborne Re-route Procedures) also known as AOC initiated re-routes provide significant benefit to operators and are available in SOPAC.
- NZZO has no restrictions however some ANSP while accepting DARP re-routes are not yet initiating them.
- Uptake from Airlines has been slow. Reasons for this include:
 - ❖ AOC staffing
 - ❖ AOC automation
- AIDC between participating ATSP's is a pre-requisite.



Data Link Benefits – Separation Reduction

- **NZZO is applying 50NM Longitudinal on RNP10 aircraft equipped with FANS1/A.**
- **NZZO has been applying 30NM Lateral and 30NM Longitudinal Distance Based Separation on approved operators that have RNP4 navigational capability and FANS1/A since January 2005.**
- **Separation standards are applied to targets of opportunity within the FIR and we accept aircraft entering NZZO airspace at the reduced separations as required.**
- **ATSP LOA ensure log-on and ADS-C contracts are established prior to AIDC co-ordination.**



Data Link Benefits – Enhance Safety

- **Route Conformance Monitoring.**
- **Level Conformance Monitoring.**
- **Speed Conformance Monitoring**
 - ❖ **Reported ADS-C Mach updates flight data record if in conformance.**



Data Link Benefits – On the near horizon

- **ADS-C Climb and Descent Procedure (CDP)**
 - ❖ Under trial in some SOPAC FIR
- **ADS-B In Trail Procedure (ITP)**
 - ❖ Under trial in some SOPAC FIR
 - ❖ Requires ADS-B IN so few candidates
- **RNP2 Oceanic Separations**
 - ❖ With SASP
 - ❖ Ideally implement when in PANS-ATM Doc 4444





Thank you

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