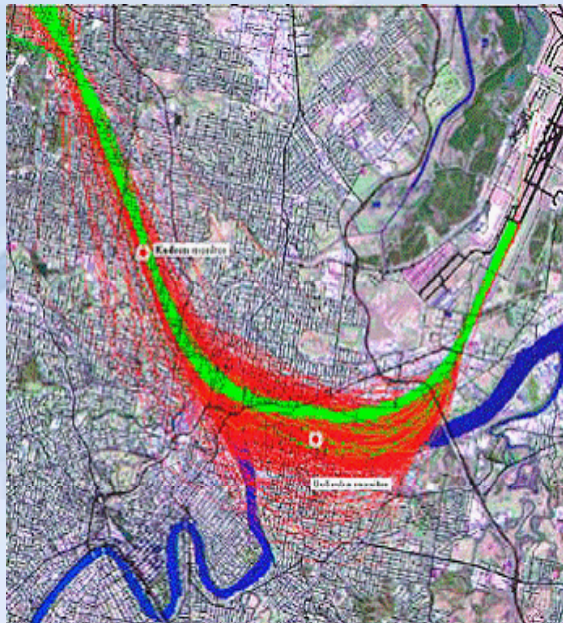


Implementation of Terminal Area RNP



Implementation of Terminal Area RNP In Australia

Phil Owen
PBN Program Director
Airservices Australia.



Implementation of Terminal Area RNP

RNP AR in Australia



NAVERUS



The Brisbane Trial
RNP-AR Procedures introduced at: **Brisbane**. Included ADSB monitoring to aid safety argument for RNP regulatory safety argument. (Jan07)

Jetstar commence operations into **Brisbane and Gold Coast** (Jun08)

Air New Zealand commence operations with A320 into **Brisbane and Gold Coast** (Dec 09)

ITAR PROJECT



Qantas launched RNP AR procedures into and out of **Queenstown**. (Sep04)

CASA issue instrument to authorise Qantas RNP-AR trial at Australian ports (Jan06)

RNP-AR procedures introduced to **Canberra** (May06)

RNP-AR Procedures introduced at: **Hobart Ayres Rock Townsville and Alice Springs** (Sep-Dec06)

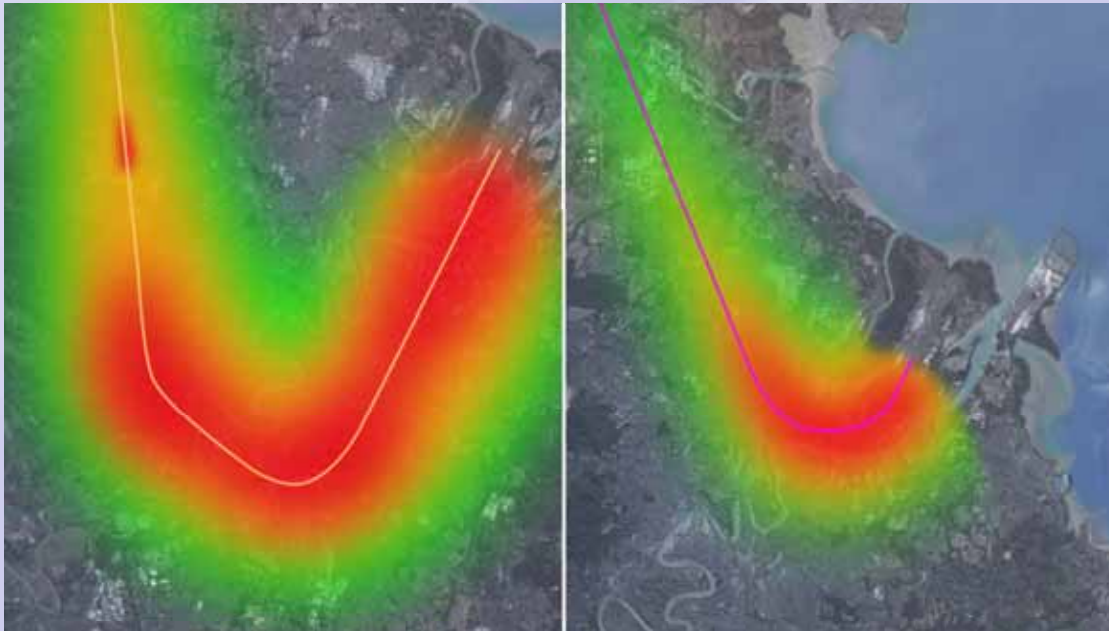
RNP-AR Procedures introduced at: **Gold Coast Cairns** and one initial approach to **Sydney** (Jan-Apr07)

RNP-AR Procedures introduced at: **Broome Kalgoorlie Mt Isa** (Jan08) and **Port Hedland** (Jun08)

RNP-AR Procedures introduced at: **Darwin** (Jan09) **Adelaide** (Oct 09) **Melbourne** (Dec09)



The Brisbane Trial – Noise Footprint



Standard ILS Approach

RNP Approach



Brisbane Trial

- RNP operations commenced Jan 07
- Data collection and monitoring installed to support regulatory change
- RNP operations limited to Qantas B737NG
- By Oct 08 10,915 RNP AR approaches
- 3,402 flights saving:
- 8952 minutes (149hrs / 6 days!)
- 39,391 track miles
- 492,388kg of fuel
- 1,575,640kg of CO2

Implementation of Terminal Area RNP



Current Status

- **CASA sponsored 'Trial' is still ongoing**
 - » 15 Airports
 - » Qantas, B737-800
 - » Jetstar and Air New Zealand A320 (Brisbane and the Gold Coast)
- **Airservices RNP-AR Program (ITAR)**
 - » 7 Airports
 - » Multi Variant Designs will replace trial procedures at these ports over the next 18 months
 - » GE Naverus designing procedures
 - » CASA approved

Implementation of Terminal Area RNP



RNP-AR Multi-Variant Design (MVD)

- » Approach and Departure procedures engineered for multiple airframe and engine combinations by combining aircraft into groups, allowing airframes of similar capability to utilise a single lateral flight path. MVD are divided into four groups
- » **MVDR** - for regional airframes (DHC-8-400, E170, E190)
- » **MVDN** - for narrow body (jet) airframes (B737-7/800, A320/1)
- » **MVD2** - for wide body twin engine airframes (B767, B777-2/300ER, A330-2/300)
- » **MVD4** - for wide body four engine airframes (B747-400, A340-3/5/600, A380)

Implementation of Terminal Area RNP



Courtesy Airservices Australia



Project Objectives

- Deliver customer requirements in terms of RNP-AR approach and departure procedures at Australian airports (7 initially)
- Develop an enhancement to the ATC System to support RNP operations (Label highlight)
- Develop Safety Cases to support creation of new separation standards (RNP0.3 and Parallel RWY)

Implementation of Terminal Area RNP



SAFETY



Forecast Benefits

- 7 ports
- 70 - 80% of RPT arrivals will be RNP AR
- Easier integration
- Surety of arrival significantly improved
- Savings Over 1 year
 - ~ 200,000 approaches
 - 24.5 million Kg of fuel
 - 73.5 million Kg of CO₂
 - A\$26 million

Implementation of Terminal Area RNP



Implementation Process

- Have an Implementation Strategy in place
- Develop a Community Consultation protocol
- Compile 'Port Profiles' (Business Intelligence)
- Take an holistic approach
- The technical work is the easy bit!

Implementation of Terminal Area RNP



Consult!

- Create community awareness
 - Educate and reassure
 - Manage expectations
- Use existing communications networks eg Noise committees BUT do not rely on these alone
- Publish Environmental Assessments
- Be prepared to negotiate
- Stay engaged



QUESTIONS