ANSP Advisory Committee (ACC): South-East Asia-Oceania Free-Route Operations Trial

ICAO Free Route Airspace Webinar

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Background

- The APAC ANSP Committee Workstream 4 (AAC WS4) was tasked with promoting operational efficiency, enhancing coordination and addressing issues of common interest amongst oceanic ANSPs.
- A Free Route Operations (FRTO) trial was identified to capitalize on existing and emerging User Preferred Route (UPR) programs in the region.
- Potential to leverage off Indonesia / Australia cross-boundary trial
- Four ANSPs (CAA Singapore, AirNav Indonesia, Airservices Australia, and Airways NZ) agreed to collaborate with IATA and selected member airlines (SIA, GIA, QFA and ANZ) to create a suite of city-pairs for four airlines to flight plan trial UPRs with minimal constraints or operational restrictions.

UPR Trial

- Trial commenced in August 2024 using a suite of 37 city-pairs selected between Singapore, Indonesia, Australia and New Zealand
- Effectively ‘connecting’ the FIRs of the ANSPs provided opportunity for UPR flights to be planned for maximum distance with minimal restriction between the agreed city-pairs
- The initiative set out to demonstrate several benefits and goals:
  - Progress cross-border collaboration on FRTO initiatives
  - Optimize flight planning efficiency for operators
  - Reduce operational cost for aircraft operators and airlines

UPR Trial

- A review of the trial and identification of benefits and expansion opportunities took place in Q1/2025.
- Data collated represented total savings achieved for UPR vs fixed routes for the restricted set of city-pairs used in the trial.
- The data represents what can be achieved in total when multiple States work in cooperation, not just the incremental saving from the trial itself, as much of the UPR efficiencies already existed in other individual programs.

Benefits Analysis

- NB: the data collated represents total savings achieved for UPR vs fixed routes for the restricted set of city-pairs used in the trial
- It is not the incremental saving from the trial itself as much of the UPR efficiencies existed already in Indonesia and Australia
- It represents what can be achieved in total when multiple States work in cooperation
- The trial city-pair flights are only a small component of total UPRs that can be accessed in the participating States
- Data only collected from 3 of 4 participating airlines so represents lower savings.

Benefits Analysis

Reported benefits - Airline 1:

Month	Total No. of Flights on UPR	Total UPR Fuel Savings	Total UPR CO_2 Savings*
Aug 2024	160	24T	75.8T
Sep 2024	154	29T	91.6T
Oct 2024	152	19T	60.0T
Nov 2024	147	26T	82.2T
Dec 2024	151	20T	63.2T
5-Month Trial	764	118T	372.8T

*CO_2 emissions = 3.16 x fuel consumed (ICAO CORSIA CO2 emissions factor)

- Participation was approx 35% flights, with average fuel saving 150kg per flight
- Flight time and track mile differences were not tracked however estimated to be below 5 minutes (average flight time saving) and 25NM (average track mile saving).

Benefits Analysis

Reported benefits - Airline 2:

	Time Savings per flight	Total UPR Fuel Savings	Total UPR CO_2 Savings*
City Pair (out)			
Single leg	6 mins	864kgs	2,730kgs
Weekly (x4)	24 mins	3,456kgs	10,921kgs
City Pair (return)			
Single leg	7 mins	839kgs	2,651kgs
Weekly (x4)	28 mins	3,356kgs	10,605kgs
Weekly Total	52 mins	6,812kgs	21,526kgs
5-Month Total (~x 20 Weeks)	~1,040 mins	136,240kgs	430,518kgs

*CO_2 emissions = 3.16 x fuel consumed (ICAO CORSIA CO2 emissions factor)

Benefits Analysis

Reported benefits - Airline 3:

	Total UPR Fuel Savings	Total UPR CO_2 Savings*
Dry Season (6th Aug 24 to 13th Sep 24) - 37 days of data		
(from city-pair averages)	46,685kgs	147,525kgs
Average participation 32%		
Wet Season (1st Nov 24 to 3rd Jan 25) - 64 days of data		
(from city-pair averages)	314,041kgs	992,370kgs
Average participation 48%		
Totals	360,726kgs	1,139,895kgs

*CO_2 emissions = 3.16 x fuel consumed (ICAO CORSIA CO2 emissions factor)

Benefits Analysis

Total reported UPR city-pair benefits from ¾ participating airlines:

Total UPR Fuel Savings	Total UPR CO_2 Savings*
614,966kgs	1,394,134kgs

NB: calculations are full UPR vs fixed-route – not solely the incremental change from pre-trial UPR availability.

*CO_2 emissions = 3.16 x fuel consumed (ICAO CORSIA CO2 emissions factor)

Learnings

- Early days: it took airlines a period while to get started. Some faced system setup challenges and change management issues, but once they began, participation and tracking became more consistent.
- Participation: Average rates were relatively low to medium, but as noted above, it took some time to get going, and some sectors rarely showed gains. In these cases, it wasn't worth participating as there was no gain.
- Fuel savings: The flights to/from Indonesia had the least opportunity to benefit, and even some SIN services didn't show significant benefit, whereas the overflying traffic could take full advantage. There were some significant savings for HKG city-pair (averages of around 2000kg).

Learnings

- Administration: Airlines request that the manual processes (e.g., email and commentary on the FPL) be removed as these have an impact on participation. The reality is that a busy dispatch centre will choose the path of least resistance in times of high workload rather than go through these manual steps.
- Next steps: Airlines support making this trial BAU. Jetstar was proposed as a new participant as they have Thailand and Vietnam destinations that can achieve significant benefits.

Review Outcomes

- From the review it was agreed to extend the trial until 31 October 2025
- Expand by adding two ANSPs (NiuSky Pacific and Fiji Airports), and four airlines (CPA, EVA, FJA, and JST)
- Expanded suite of city-pairs to up to 70 flights per day
- The data results and lessons learnt from the trial will be utilized by the project team to develop future guidance material to encourage and support other ANSPs to transition to FRTO environment in the future.

Airline Updates from Phase 2

- No significant issues reported
- MNL-SYD: 500kgs average fuel saving per flight
- MNL-BNE: 250kgs average fuel saving per flight
- Some northbound sectors are not seeing any benefit yet, possibly due volcanic activity and depressurization procedures that are still being developed by the airline

Thanks!

Questions?

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