

**Twenty First Meeting of the  
Informal South Pacific ATS Co-ordinating Group (ISPACG/21)**

Auckland, New Zealand, 6-8 March 2007

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Agenda Item 4: Review progress on open action items.  
AI 17-2

**Implementation of User Preferred Routes in the South Pacific**

(Presented by the Federal Aviation Administration)

**SUMMARY**

This working paper provides background on the expansion of User Preferred Routes in the Pacific.

**1. Introduction**

- 1.1 Oakland Air Route Traffic Control Center (ZOA) and the other South Pacific Air Navigation Service Providers (ANSP) have been supporting User Preferred Routes (UPR) since December 2000. UPRs have proven to be a very cost effective means for airspace operators to flight plan.
- 1.2 The UPR concept is a method of flight planning that allows airspace operators to choose optimum (random) routes based on individual airframes. UPRs are not constrained in the same manner as fixed oceanic Air Traffic Service (ATS) routes. This allows operators to maximize individual route efficiency during flight planning.
- 1.3 Initial data from the User UPR Trial in the Central East Pacific indicates an operational advantage to airspace operators. The trial has shown a potential savings of 12 minutes flying time and over 3000 pounds of fuel. The potential savings may be greater during winter weather patterns.
- 1.4 Air New Zealand conducted a UPR paper trial on flights between New Zealand and Japan. The paper trials indicate a potential for large savings.
- 1.5 In support of the International Civil Aviation Organization (ICAO) efforts to reduce operator costs and ecological impacts due to aircraft engine emissions, FAA is working with the other ANSPs to expand use of the UPRs wherever they are feasible.

**2. Discussion**

- 2.1 ZOA in conjunction with the airspace operator community began UPR trials in the Central East Pacific (CEP) between California and Hawaii to determine if UPRs would provide savings. To evaluate the feasibility of expanding UPR routes in the

- 2 -

CEP, United, Continental and American Airlines have conducted several paper trials and flown UPR trial flights. Other airspace operators have also expressed interest in participating in the trials.

- 2.2 Though initial trials indicate savings can be achieved, it is yet to be determined that a total UPR environment in the CEP will maintain the efficiency levels afforded by the current ATS route structure. While it may be possible to allow unrestricted UPRs in the CEP airspace, the impact on altitude assignment would potentially erase any UPR savings. En route step climbs would also be impaired by the increased number of aircraft conflicts.
- 2.3 FAA has commissioned a study to determine the feasibility of changing the current CEP ATS Route structure into some sort of Flexible Route system. Flexible routes would allow airspace operators to take advantage of changing upper wind patterns yet still maintain the current CEP efficiency levels. Initial data from this study should be available in October 2007.
- 2.4 2.5 The UPR paper trial between New Zealand and Japan indicates a potential savings of 2 million dollars annually for Air New Zealand. Based on these projected savings the ANSPs have been working to move into Airborne Trials.
- 2.6 Currently, Oakland, Auckland, Brisbane and Nadi Control Centers are ready to begin Airborne UPR Trials between New Zealand and Japan.
- 2.7 FAA presented a paper at the IPACG 25 meeting in Japan on UPR Routes between New Zealand and Japan. Though JCAB is not ready to begin Airborne Trials,, Japan's Air Traffic Controller Association (ATCA) will meet with ZOA representative at ZOA on March 26, 2007 to discuss UPRs and other subjects.
- 2.8 Port Moresby is coordinating with Air Services Australia to obtain the training. Until the training is completed they can not support Airborne UPRs.
- 2.9 To allow airspace operators to begin recognizing some benefits of UPRs, Oakland proposes to begin Airborne UPR Trials between New Zealand and Japan within the FIRs that are ready to start. This proposal would allow airspace operators to flight plan their UPR within the Auckland, Nadi, Brisbane and Oakland FIRs. Any flight segments through the Port Moresby and Fukuoka FIRs would be restricted to the current routes in those FIRs.
- 2.10 Another area to consider for the use of UPRs is between Australia and Japan. There is currently no data available to validate potential savings. The traffic flows between Australia and Japan are much heavier and complex. More data needs to be gathered to determine the potential for savings and impacts on traffic.
- 2.11 FAA will continue to work together with the other ANSPs to expand the use of UPRs from the South Pacific to Japan.

### **3. ACTION BY THE MEETING**

- 3.1 The group is requested to support beginning UPR Paper Trials between Australia and Japan. The data from the paper trial may allow the ANSP and Users to carefully evaluate the impacts of these UPRs.
- 3.2 Users are encouraged to participate in the CEP UPR Trial. Anyone interested in participating in the trial should contact the Oakland Center International Airspace and Procedures Office at 510-745-3320.