



## TWELFTH AIR NAVIGATION CONFERENCE

Montréal, 19 to 30 November 2012

### Agenda Item 5: Efficient flight paths – through trajectory-based operations

#### 5.1: Improved operations through enhanced airspace organization and routing

#### UPR EXPANSION IN THE OCEANIC AIRSPACE IN JAPAN

(Presented by Japan)

##### SUMMARY

This paper presents an implementation status of user preferred route (UPR) in Fukuoka FIR, Japan.

**Action:** The Conference is invited to note the information provided.

### 1. INTRODUCTION

1.1 A user preferred route (UPR) is a unique flight path for each aircraft instead of following the conventional approach of flying along predetermined aviation routes set by ATC organization.

1.2 Civil Aviation Bureau of Japan (JCAB) has been successfully implementing UPRs into the Pacific Region for these several years. This paper presents on going status of challenging effort to enhanced efficiency.

### 2. DISCUSSION

2.1 JCAB has been successfully implementing UPRs into the Pacific Region for these several years under the close coordination with Federal Aviation Administration (FAA). Although this innovative initiative is still continuously discussed for further expansion, implementation of UPR trial operation into busy Track 1 and Track 3 of the PACOTS flexible tracks, connecting Japan and North America, is one of our significant achievements in 2011/2012.

2.2 JCAB has considered the implementation of UPRs associated with fixed routes as well as flexible tracks. Regarding the flights between Japan and Oceania, filing fixed routes had only been accepted before implementing an UPR between RJAA and New Zealand in September 2007. Since then, the available airspace for UPR planning within Fukuoka FIR has been expanded. Starting from 26 July 2012, the flights connecting three airports in Japan (RJAA, RJBB and RJGG) and 6 airports in Oceania (YSSY, YBBN, YBCG, YBCS, NZAA and NWWW) can benefit from UPR trial operation which contributes to reduce fuel burns by filing more efficient routes taking into account operating aircraft types, operating time and weather information.

2.3 Flexible track system of PACOTS (Pacific organized track system) has been implemented more than ten years for the routes connecting Japan-Hawaii, Japan-North America, and Southeast Asia-North America. There is no doubt that PACOTS which is established and published on a daily basis by JCAB for east-bound tracks and FAA for west-bound tracks is more efficient than fixed routes. However, flexible tracks have some limitation compared to UPR in providing more efficient tracks caused by not being usable of the latest weather information and unable to reflect various types of aircraft.

2.4 Therefore, UPR associated with PACOTS has also been actively implemented for further operational improvements in the oceanic airspace. At present, maximum eight tracks for east-bound and eleven tracks for west-bound are established as PACOTS every day. As for the east-bound PACOTS, UPRs are allowed six out of eight tracks by adding new trial implementation to busy PACOTS Track 1 and Track 3 in 30 June 2011 and 9 February 2012 respectively.

2.5 This challenge for the expansion of UPR to the east-bound tracks has almost completed. JCAB will continue working on further expansion of UPR for the west-bound tracks, evaluating trial operation, and reviewing existing procedures for UPR planning.

2.6 JCAB and FAA have started an operation trial of dynamic airborne reroute procedures (DARP) for flights between Japan and Hawaii with successful on April 2011. JCAB will continue working on further expansion of DARP.

### 3. CONCLUSION

3.1 JCAB expects this will make great contribution to reduce fuel consumption and CO2 emission, leading to the total benefit of huge traffic volume, and will continue its study toward the implementation.

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