



International Civil Aviation Organization

**The Twenty-first Meeting of the Bay of Bengal ATS Coordination Group
(BBACG/21)**

Bangkok, Thailand, 07 – 10 March 2011

Agenda Item 6: ATS Route Developments

User Preferred Routes

(Presented by IATA)

SUMMARY

This paper outlines a proposal to establish a UPR geographic area clear of busy traffic routes as presented to ASIOACG/5

1. INTRODUCTION

- 1.1 It is widely accepted that User Preferred Routes represent the most efficient form of routing for aircraft. The ability to optimise the route based on prevailing environmental conditions and the actual aircraft configuration of the day can deliver enormous benefits on a per flight basis. Not only can there be a reduction in fuel burn and a reduction in environmental emissions but also a potential increase in payload.
- 1.2 The principle of UPRs is a well-established principle of ICAO with GPI 7 in the GANP specifically referencing.
- 1.3 The implementation of UPRs is also a cornerstone of many of the environmental programs currently in effect (e.g. ASPIRE and AIRE).
- 1.4 IATA presented this proposal to the 5th meeting of the informal Arabian Sea Indian Ocean ATS Coordination Group (ASIOACG) in April 2010.

2. DISCUSSION

- 2.1 The Indian Ocean traffic flows represent an ideal environment for the benefits of UPRs. With the two primary flows of traffic between Asia – Africa and Middle East – Australasia, it is still relatively low density traffic. Flights are generally medium/ long haul in nature and the majority of traffic is modern wide bodied aircraft.
- 2.2 ICAO recognises Asia/ Australasia – Africa as major traffic flow AR1 in the GANP.

- 2.3 The capabilities of States have increased in recent times with datalink either already available or under trial in most FIRs serving the AS-IO region enabling the application of reduced separations. The advent of ATM automation with AIDC and CPAR functionality also greatly increases the capacity of ATC enabling controllers both increased capabilities and reduced work load.
- 2.4 As an example of the benefits of UPRs, a study was undertaken to review the benefits for one city pair. In this case data was analysed for 1 month for flights between JNB-HKG operated by CX. Average savings were 6.5 min per flight in both directions with potential savings as much as 15min. The accumulated benefits in one month totaled a reduction in flight time of 399 min, reduction in fuel burn of 46300kg and reduction in CO2 emissions 145800kgs. **This is the benefit of 1 flight each direction per day by 1 airline.**
- 2.5 IATA recognises that the traffic density in some parts of the region (i.e. SEA-IND-MID) are such that the introduction of UPRs will actually restrict operations in the short term. IATA also recognises that UPRs cannot necessarily be provided gate to gate due traffic complexity.
- 2.6 To this end, IATA proposes a geographical area be defined (clear of busy published traffic routes) where UPRs are available. IATA also suggests that in the area where UPRs are available, a phased plan is developed whereby eventually published routes are removed and the primary means of navigation is by UPR.
- 2.7 An example of the geographic area under consideration is:



- 2.8 Noting the crossing nature of the two traffic flows (ref para 2.1) , IATA believes it is important that these flows are considered collectively to ensure the operational impacts are clearly understood and that the implementation is introduced to meet the needs of all stakeholders.
- 2.9 Furthermore IATA proposes States consider the harmonization of navigation requirements associated with the proposal with the requirement for RNP 10 (RNAV10) on a geographic basis and phased implementation of the availability of RNP4 where appropriate to meet the ICAO target of the regional PBN plan.

2.10 Recognising that the concept of UPRs is new to many States in this region, IATA considers this should be included as part of the future work plan. The IATA proposal for the extension of the AUSOTS trial is a first step to support the eventual establishment of a UPR geographic area.

2.11 The enablement of UPRs forms a key part of the ASIOACG workplan.

3. **ACTION BY THE MEETING**

3.1 The meeting is invited to:

- Note that UPRs represent the most efficient form of navigation for aircraft
- Endorse the principle of UPRs for the Indian Ocean
- Identify limitations in the existing infrastructure
- Incorporate the establishment of UPRs as part of the workplan (in coordination with ASIOACG)
