INTERNATIONAL CIVIL AVIATION ORGANIZATION

AFI PLANNING AND IMPLEMENTATION REGIONAL GROUP
EIGHTEENTH MEETING (APIRG/18)
Kampala, Uganda (27 – 30 March 2012)

Agenda Item 3.2: Air Traffic management and Search and Rescue (ATM/SAR)

IMPLEMENTATION OF RANDOM ROUTING AIRSPACE IN THE INDIAN OCEAN AND ARABIAN SEA

(Presented by IATA)

SUMMARY
This working paper presents APIRG 18 with a concept on operators' requirements for *Random Routing in the Arabian sea and Indian Ocean* based on ICAO GPI that supports User Preferred Routes, and appeals to States and Air Navigation Service Providers to consider implementation of the Random routings in the Indian Ocean.
REFRENCE(S): ASIOACG/5 Report and ASIOACG/6 Draft Report BBACG/21 Report iFLEX I and II Global Air Navigation Plan Doc 9750 ICAO Global Plan Initiative, GPI-7
Related ICAO Strategic Objective(s): A & C

1.   **INTRODUCTION**

1.1.   It is widely accepted that User Preferred Routes represent the most efficient form of routing for aircraft. The ability to optimize 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 UPR is a well-established principle of ICAO with GPI 7 in the GANP specifically referencing it. The implementation of UPR is also a cornerstone of many of the environmental programs currently in effect (e.g. iFLEX I and II and AORRA).

1.3.   IATA presented this proposal to the 5th meeting of the informal Arabian Sea Indian Ocean ATS Coordination Group (ASIOACG) in April 2010. The roadmap for implementation for phased implementation of ASIO UPR was discussed and adopted in ASIOACG/6 in Cape Town in November/December 2011.

      a) Flex tracks Paper Trials Q1, 2012
      b) Flex Operational Trials Q2/Q3 2012
      c) UPR Operational Trials Q1-Q3 2013
      d) Full UPR Q4 2013 or Q1 2014

1.4.   Paper Study and data collection was done for flights operating in ASIO airspace every Wednesday from 01- 25 February 2012. Analysis of this data will be done in late April 2012 and shared with States and Air Navigation Providers.

2.   DISCUSSION

2.1.   The Indian Ocean traffic flows represent an ideal environment for the benefits of UPR. 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 recognizes 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 ASIO region. 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.   A study was undertaken to review the benefits of UPR for one city pair between JNB-HKG operated by CX. A reduction in flight time of 399 minutes, reduction in fuel burn of 46300kg and reduction in CO2 emissions of 145800kgs was recorded in one month. This is the benefit of 1 flight each direction per day by 1 airline.

2.5.   A similar study on a flight from NBO-BKK showed a potential savings averaging 1.5 tons a flight. In one month with a daily frequency, each direction, the total savings amounts to 90,000 kg of fuel and 283500 kg of CO2.

2.6.   IATA recognizes that the traffic density in some parts of the region is such that the introduction of UPR will actually restrict operations in the short term. IATA also recognizes that UPR may not necessarily be provided gate to gate due traffic complexity.

2.7.   To this end, IATA proposes a geographical area be defined, after clear consideration of the busy published traffic routes and a safety assessment, implementation of UPR/Random Routes in ASIO airspace in a phased approach whereby, eventually all published routes are removed and Random Routing is implemented.

2.8.   An example of the geographic area under consideration is as per **Appendix A** of this WP. It is envisaged that eventually the ASIO UPR will cover the whole of the Arabia Sea Indian Ocean Geographical region **(Appendix B)**.

2.9.   Noting the crossing nature of the two traffic flows (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.

2.10.   Implementation of the routes published by ICAO ESAF in AFI in 2010/2011 will continue in parallel with the implementation of ASIO UPR. There is a need to engage ICAO ASIA/PAC to implement Mumbai FIR part of the routes.

2.11.   Additional routes as indicated in appendix C have been requested by operators and are already under discussion with management of the relevant States and Air Navigation Service Providers.
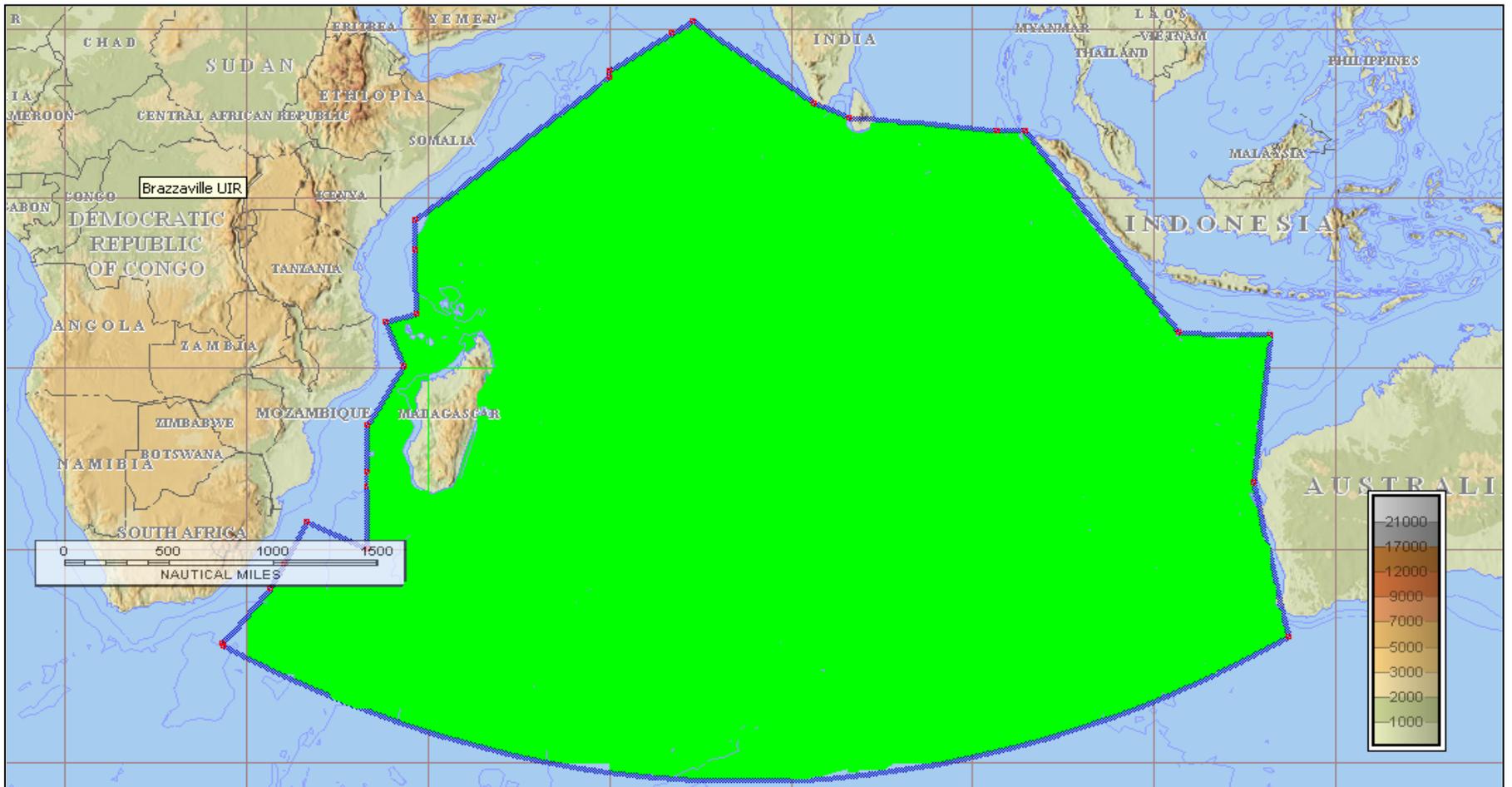
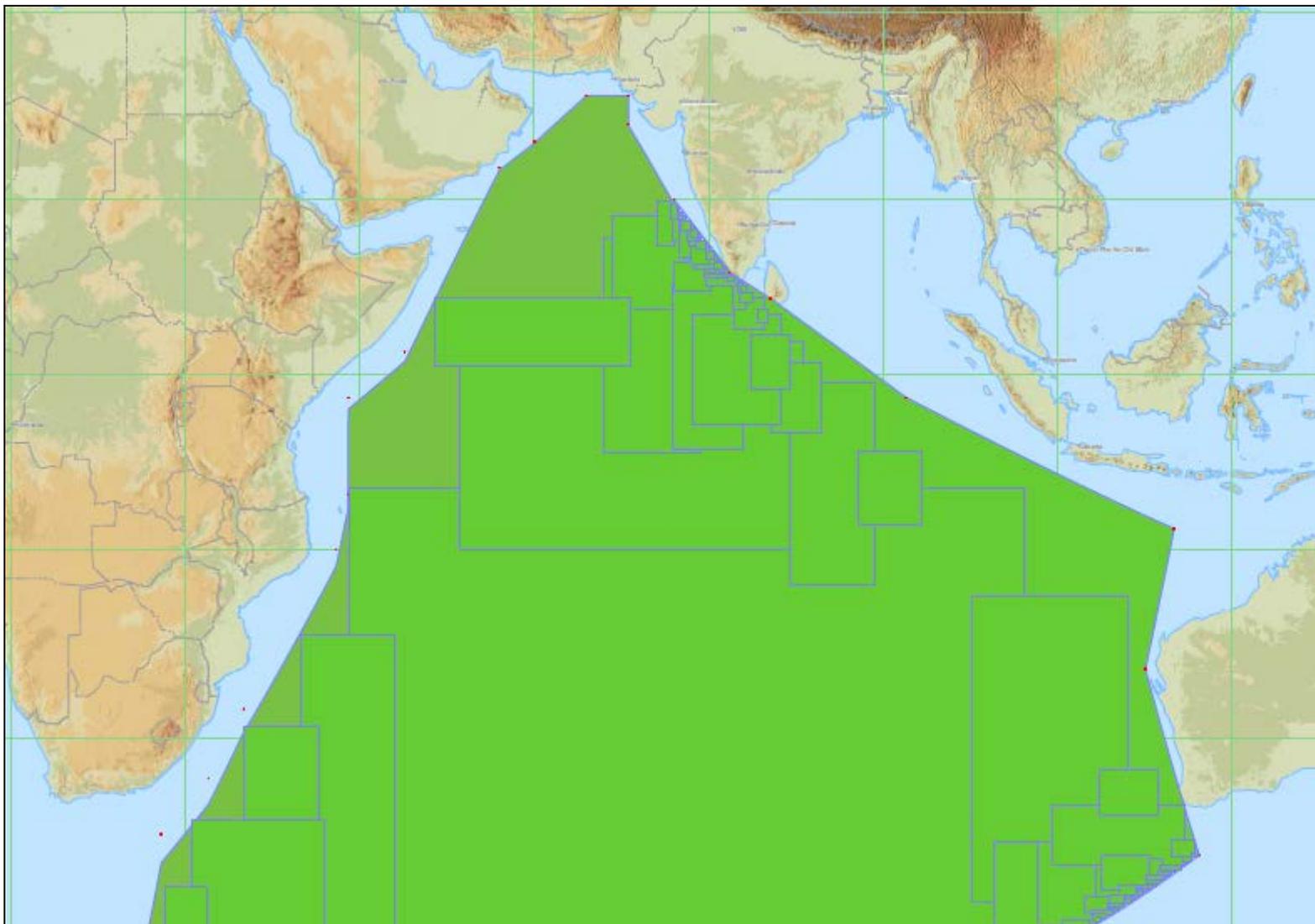## 3.   ACTION BY THE MEETING

The meeting is invited to:

    a) Note that UPR represent an efficient utilization airspace;

    b) Endorse the principle of UPR for the Indian Ocean;

    c) Identify limitations in the existing infrastructure;

    d) Incorporate the establishment of UPR as part of the work plan in coordination with the adjacent ICAO Regions;

    e) Note the continuance of route implementation requested by operators in 2010/2011 RouteLab 3 (and three additional ones) will run parallel with the implementation of the ASIO UPR since the operators need to realize savings that is available now.

-END-

Appendix A

Appendix C