



International Civil Aviation Organization
Western and Central African Office

**Eighteenth Meeting on the improvement of Air Traffic Services
over the South Atlantic (SAT/18)
Dakar, Senegal, 17 to 19 July 2013**

Agenda Item 2: Air Traffic Management (ATM)

2.3. Follow up on operations in the AORRA airspace

**Implementation of Additional Exit/Entry Waypoints to increase Flexibility in the AORRA
Airspace in the North Atlantic Airspace**

(Presented by IATA)

Summary

<p>The objective of this paper is to discuss the need to implement additional Exit/Entry Waypoints to increase Flexibility in the AORRA Airspace and between West Africa and North America. It addresses User Preferred Routes and optimizes route trajectories that provide enhanced fuel savings while reducing CO2 emissions.</p>
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<p>References</p>

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| <ul style="list-style-type: none">• SP AFI RAN 2008 Report• SAT17 Meeting Report• SAT 14/TF/1 – WP10, SAT 15 – WP03 |
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1. Introduction

- 1.1 The concept of filing and flying ‘User-preferred Trajectories’ in remote and oceanic airspace, supported by availability of volumes of ‘random-route’ airspace is not new. Starting in the mid-1960s, Random Route volumes of airspace are now commonly in use in many parts of the world: the N.Atlantic, South Atlantic, Indian Ocean and the Pacific.
- 1.2 The Atlantic Ocean Random Routing RNAV Area (AORRA) is the volume of airspace from FL290 to FL410 between Africa and South America. It was implemented on 21st December 2006.
- 1.3 Initially, a limited number of existing waypoints were used for entry and exit to/from the AORRA. Additional points were later added on to provide more flexibility and increase the number of transitions to/from continental airspace. The last improvement was in 2012, where the AORRA airspace was moved from 4°N to 0°N.

2. Discussion

- 2.1 IATA proposes additional entry/exit waypoints in order to provide operators from North America to West Africa and vice-versa with more flexibility towards a common goal of building seamless flight trajectories that are optimized for upper wind patterns and significant weather avoidance (Appendix A, B). The following waypoints are proposed;

2.1.1 Dakar/SAL FIR Boundary

N18° 40.00'	W 020° 00.00'
N15° 10.4'	W 029° 32.5'
N15° 27.4'	W 030° 41.6'
N15° 43.5'	W 031° 48.3'
N16° 16.5'	W 034° 10.0'

2.1.2 Dakar/Piarco FIR Boundary

N16° 30.5'	W 037° 30.0'
N15° 30.4'	W 037° 30.0'
N14° 28.7'	W 037° 30.0'
N13° 30.0'	W 037° 30.0'

2.1.3 Dakar/Cayenne FIR Boundary

N 12° 31.8'	W 037° 04.6'
N 10° 46.8'	W 036° 19.1'
N 08° 50.0'	W 035° 30.0'

2.1.4 Dakar/Canarias FIR Boundary

N19° 22.9'	W018° 35.6'
N20° 12.1'	W017° 42.3'

2.1.5 Sal/Canarias FIR Boundary

N20° 05.7'	W020° 06.8'
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- 2.2 Furthermore IATA proposes establishment of RNAV route between TYE (ASECNA) and AMPAS (Roberts) and associated transition routes to entry/exit AORRA airspace (Appendix C)

2.2.1 TYE-AMPAS

N 06° 21.7'	E 002° 23.6'
N 06° 25.3'	E 001° 10.6'
N 06° 28.4'	E 000° 05.5'
N 06° 29.2'	W 000° 18.1'
N 06° 31.7'	W 001° 20.7'
N 06° 35.3'	W 002° 55.9'
N 06° 35.9'	W 003° 13.6'
N 06° 36.4'	W 003° 13.6'
N 06° 37.0'	W 003° 42.6'
N 06° 38.6'	W 004° 33.4'
N 06° 39.4'	W 005° 48.6'

	N 06° 39.7'	W 006° 58.8'
	N 06° 40.0'	W 007° 49.0'
2.2.2 AMPAS-BOTBU		
	N 06° 40.0'	W 007° 49.0'
	N 08° 04.5'	W 015° 46.9'
2.2.3 AMPAS-RIRAK		
	N 06° 40.0'	W 007° 49.0'
	N 07° 30.1'	W 015° 10.3'
2.2.4 AMPAS-TINIS		
	N 06° 40.0'	W 007° 49.0'
	N 06° 57.6'	W 014° 43.2'
2.2.5 AMPAS-SOLTU		
	N 06° 40.0'	W 007° 49.0'
	N 06° 21.2'	W 013° 57.3'
2.1.6 AMPAS-GUTAS		
	N 06° 40.0'	W 007° 49.0'
	N 05° 46.7'	W 013° 20.9'
2.1.7 AMPAS-LUMKA		
	N 06° 40.0'	W 007° 49.0'
	N 05° 12.1'	W 012° 44.6'
2.1.8 AMPAS-TUROT		
	N 06° 40.0'	W 007° 49.0'
	N 04° 34.3'	W 012° 09.9'

3. Benefits

3.1 The proposed modifications will result in the following benefits:

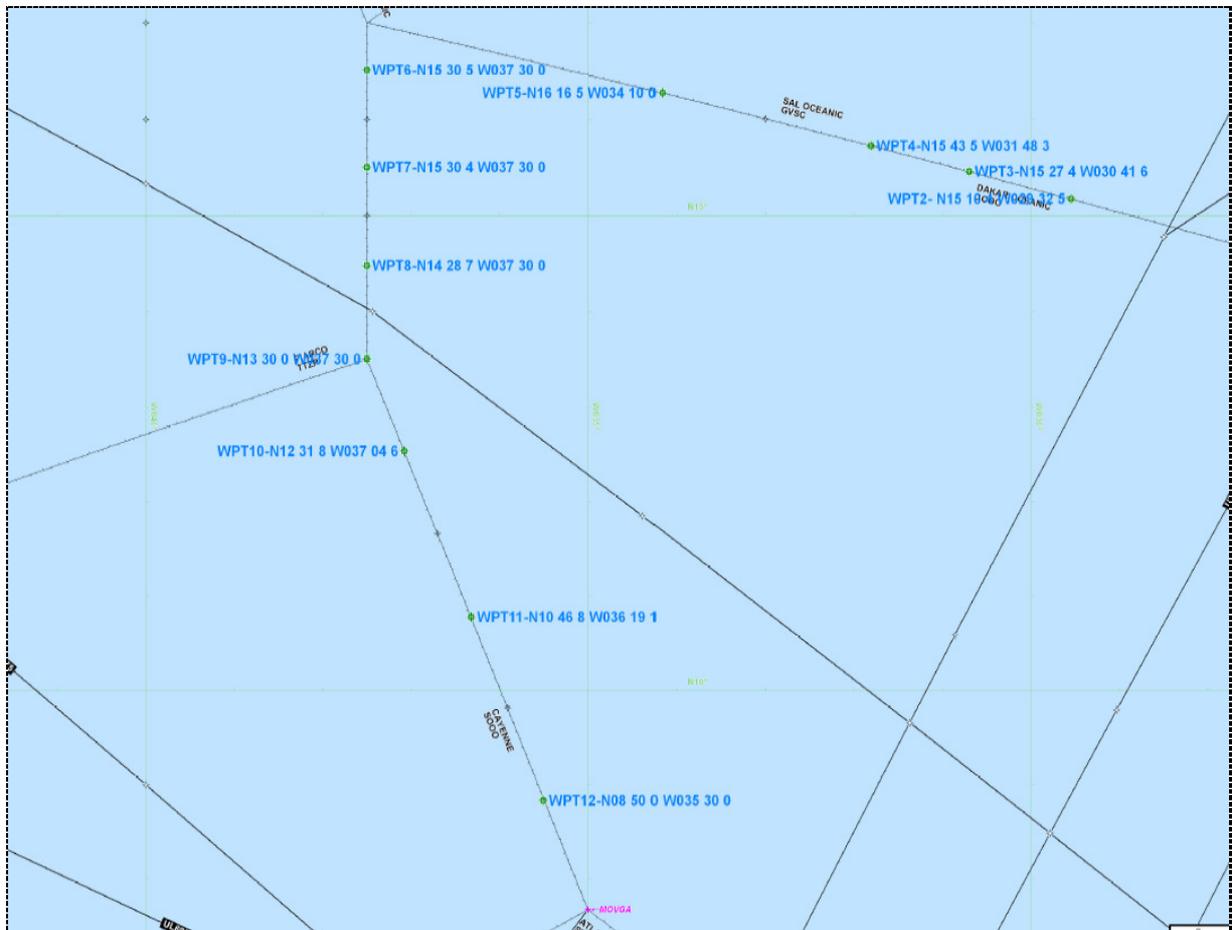
- Reduction of carbon footprint due to CO₂ emissions
- Reduced flight times due to optimized trajectories
- Decrease in aircraft fuel consumption

4. Action by the Meeting

4.1 The meeting is invited to:

- Note the information contained in this paper
 - Agree to implement proposed waypoints (paragraph 2.1) on Airac date of 22 August 2013;
 - Establish Task Force including Ghana, ASECNA (Abidjan), Roberts FIR and IATA to move implementation (paragraph 2.2) forward by Airac date of 22 Aug 2013.
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Appendix A: Dakar/SAL, Dakar/Piarco, Dakar/Cayenne



Appendix C: TYE-AMPAS-BOBTU, RIRAK, TINIS, SOLTU, GUTAS, LUMKA and TUROT

