International Civil Aviation Organization
Western and Central African Office

Twelfth Meeting of the Air Traffic Management/Aeronautical Information Management/Search and Rescue Sub-Group (ATM/AIM/SAR SG/12)
(Dakar, Senegal, 25 - 29 July 2011)

Agenda Item 4:   Performance Based Navigation (PBN) implementation

IMPLEMENTATION OF IFLEX PHASE II

(Presented by the International Air Transport Association)

SUMMARY
This working paper presents the ATM/AIMS/SAR Sub-Group with results of joint ICAO IATA flexible ATS Route Management Workshops - Phase II, as well forward for implementation.
References: Report of   • First Flexible ATS Route Management Workshop held in Dakar, Senegal, 11-13 January 2011;   • Second Flexible ATS Route Management Workshop held in Dubai, UAE, 15-17 February 2011;   • Third Flexible ATS Route Management Workshop held in Paris, France, 8-10 March 2011;

1.   **INTRODUCTION**

1.1.   On the 26 August 2010, the SAT States completed the implementation of phase 4 of a Random Route area for aircraft operating between Africa and South America called Atlantic Ocean Random Routing RNAV Area (AORRA).

1.2.   Thereafter, the iFlex project has been introduced at the initiative of IATA and with the support of ICAO to further more flexible airspace structure. Using what is already available on the aircraft and within ATC ground system, the move from Fixed to Flexible can be accomplished in a progressive, orderly and efficient manner. Success requires engagement of all stakeholders working together to implement user-preferred trajectories and reduce the reliance on the fixed route system wherever safely possible

1.3.   In view of the above, thru a process of three iFlex workshops, IATA and ICAO together with States and ANSPs embarked on the implementation of additional flexible tracks in Oceanic and Terrestrial airspace. The flexible tracks and RNP 10/RNAV 5 routes were to be implemented on 7 April 2011. iFlex Oceanic involved having additional crossings in the EUROSAM corridor in order to provide flexible routing to North America-South Africa traffic. iFlex terrestrial involved providing more access routings to AORRA airspace. To support iFLEX tracks, additional RNP 10/ RNAV5 routes had been created.

1.4.   As there was no confirmation, in writing, that all safety assessment work had been completed by all States concerned, ICAO and IATA agreed to postpone the implementation date and divide the implementation process in two phases:

Phase I

Implementation of user-preferred trajectories concept within Dakar Oceanic FIR, Sal FIR, Piarco FIR, Cayenne Rochambeau FIR, Dakar Terrestrial FIR and Accra FIR commencing with a trials from 30 June 2011 to 25 August 2011 and only limited to Emirates Airlines and Delta Air Lines. The outcome of the trials will define further availability of those user-preferred trajectories to other operators.

Phase II

To enhance access to and from the Atlantic Ocean Random Routing Area (AORRA) and user preferred trajectories implemented in Phase I, to implement additional RNP10/RNAV5[1] routes over continental AFI and MID airspace.

2.   DISCUSSION

2.1.   Phase I having been launched, the next step is to commence the implementation process of Phase II - RNP 10/RNAV 5 routes[1,2] on the implementation date 20 October 2011 as depicted in **Appendix A**.

2.2.   The timelines agreed upon by IATA and ICAO as per the timetable will be complied with, including;
2.2.1.   Immediately
   • Complete pending coordination with States/ANSPs/FIRs that weren't present during Flexible ATS Route management Workshops.
   • States who haven't done it yet, to complete hazard analysis and safety assessment in accordance with ICAO Annex 11 and PANS ATM. Example of template meeting ICAO requirements is attached as **Appendix C**.

2.2.2.   12 August 2011
   • <u>Confirmation in writing, from States to ICAO, that all safety assessment work has been completed</u>.

2.2.3.   25 August 2011 (AIRAC)
   • Publish implementation of RNP 10/RNAV 5 routes via AIP supplement / AIC effective 20 October 2011. No trial period is required.
   Except for the ATS routes in the Cairo FIR, Jeddah FIR, Bahrain FIR, Emirates FIR and Sanaa FIR all ATS routes will be on RNP 10 specification. The ATS route in Cairo FIR, Jeddah FIR, Bahrain FIR, Emirates FIR and Sanaa FIR will be on RNAV 5 specification[3].

2.3.   Following further assessments on the airspace classification, including availability of surveillance, the change to another NAV specification (RNAV 5, or more stringent, depending on airspace requirements) may be made.

2.4.   Coordinate with ICAO Regional Offices change of route designations (UQ) to regional designation in accordance with Annex 11 to the Chicago Convention.

3.   ACTION BY THE MEETING

3.1.   The meeting is invited to:
   a) Request States and Air Navigation Service Providers to proceed towards implementation of the air route requirements effective 20 October 2011.

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[1] Second Flexible ATS Route Management Workshop Report – Appendix C

[2] First Flexible ATS Route Management Workshop Report iFLEX within Luanda FIR, Brazzaville FIR and Sao Tome TMA initially envisioned as flexible tracks, however on recommendation of iFLEX working group, it had been proposed to implement those tracks rather as RNP 10 routes.

[3] MIDANPIRG/12 CONCLUSION 12/9: RNAV 5 IMPLEMENTATION IN THE MID REGION
   That, States that have not yet done so, be urged to:
   a) update their AIP to change RNP 5 to RNAV 5; and
   b) take necessary measures to implement RNAV 5 area in the level band FL 160 - FL460 (inclusive)

b) Request ICAO Regional Offices to initiate the corresponding amendment to AFI ANP, Table ATS1.

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Appendix A

Appendix B

Type of operation or activity	Generic Hazard	Specific components of the hazard	Hazard-related consequences	Existing defenses to control risk(s) and risk index	Further action to reduce risk(s) and resulting risk index	Responsible unit
Air Traffic Services Operations	Flexible routing crossing existing airways or other flexible routing	1. Aircraft maintaining same flight level converging at crossing points	1. Loss of separation 2. Airproxes 3. Increased ATC workload	Examples: 1. TCAS and STCA 2. Vertical and 10 minute's longitudinal separation. 3. ATC Procedures 4. ADS-C/CPDLC 5. HF coverage 6. IFPB 7. Radar map 8. FIR chart 9. Pilots providing estimates at crossing points 10. Radar coverage **Risk Index:** TBA **Risk tolerability:** TBA	Examples: 1. Install high performance HF/SELCAL 2. Update Local ATS instruction(LATSI) 3. Use of IFPB 4. Intersections must be made compulsory reporting points **Risk Index:** TBA **Risk tolerability:** TBA	
		2. Unfamiliar (new) way points and flexible trajectories		Examples 1. FIR charts 2. ATC procedures 3. Procedural control 4. Operational trials 5. Named crossings **Risk index:** TBA **Risk tolerability:** TBA	Examples 1. Update FIR chart 2. Update LATSI 3. Train controllers on new changes **Risk index:** TBA **Risk tolerability:** TBA	
		3. Unreliable air-ground communication		Examples 1. ADS-C/CPDLC 2. HF 3. IFBP 4. SATCOM 5. LOPs 6. STCA/TCAS **Risk index:** TBA **Risk tolerability:** TBA	Examples 1. Update LOPs with adjacent FIRs 2. Improve HF **Risk index:** TBA **Risk tolerability:** TBA	

| | | 4. Non availability of FPL | | Examples
1. Create FLP from pilot reporting
2. Coordinates with neighbouring FIRs

Risk index: <mark>TBA</mark>
Risk tolerability:
<mark>TBA</mark> | Examples
1. Improve AFTN network
2. Address route cause of missing FPL

Risk index: <mark>TBA</mark>
Risk tolerability:
<mark>TBA</mark> | |