



**Twenty Second Meeting of the Africa-Indian Ocean Planning and Implementation Regional  
Group (APIRG/22)  
(Accra, Ghana, 29 July – 02 August 2019)**

**Agenda Item 4: Other Air Navigation Issues**

**FREE ROUTING AIRSPACE**

*(Presented by IATA)*

<b>SUMMARY</b>
<p>Free Route Airspace (FRA) is concept that allows States/ANSPs to overcome the challenges in ATM efficiency, capacity and environmental issues facing aviation. The full benefits of efficiency of FRA can only be achieved if it is deployed over large areas and; appropriated measures are taken to reduce the associated safety risks. FRA implementation is an incremental process where implementation should start at the State/ANSP level and extend over a cluster of States/ANSPs into a region. Therefore, coordination with neighboring states is key, not only to reduce the risks associated with the change of the airspace design (as a result of implementing FRA) and update of LOAs, but also to ensure a smooth transition from a local FRA (State) to cross boarder FRA (over many states), where airspace users can flight plan direct point-to-point (DCT) length to maximize route optimization. One of the biggest challenges in AFI is the real-time acceptance or rejection of flight plans and the capacity for airlines operations control center to determine that the flight has ben accepted on the requested routes.</p>
<p><b>REFERENCE(S):</b> ICAO Global Air Traffic Management Operational Concept (Doc 9854) ICAO Global Air Navigation Plan (Doc 9750)</p>
<p><b>Related ICAO Strategic Objective(s):</b> Safety, Air Navigation Capacity and Efficiency, Economic Development of Air Transport and Environmental Protection.</p>

**1. INTRODUCTION**

1.1. FRA is a specified airspace within which users may freely plan a route between a defined entry point and a defined exit point, with the possibility to route via intermediate (published or unpublished) waypoints, without reference to the ATS route network, subject to airspace availability. Within this airspace, flights remain subject to air traffic control.

1.2. FRA implementation provide Air traffic controllers with the possibility to remove constraints imposed by fixed route structure in order to optimize airspace capacity, flight efficiency, flexibility and environmental protection. Regions that have developed and successfully implemented FRA concept of operations have demonstrated that there are clear benefits to airspace users as well as improvement of airspace utilization.

1.3. For States/ANSPs, the implementation of FRA supported by the requisite ATM systems and infrastructure, can improve predictability and ensure a better spread of possible conflicting points compared to concentration of conflicts arising from the current fixed route network, thereby improving safety.

1.4. FRA concept is associated with ASBU modules B1-FRTO, i.e. introduction of free routing in defined airspace, where the flight plan is not defined as segments of a published route

network or track system to facilitate adherence to the user-preferred profile. Within FRA environment, airspace users will move from routes to free routing subject to airspace availability, which offer a number of efficiency benefits, such as the use of shorter routes, saving fuel, reducing CO2 emission and payload optimization.

1.5. There are States in the AFI region that have implemented adequate infrastructure to implement FRA concept of operations. This is a proven fact, judging by the number and frequency of clearances give to flights for point-to-point and direct-direct routing requests by airlines.

## **2. DISCUSSION**

2.1 Implementation of Free Route Airspace (FRA) in AFI region should be incremental. The approach should involve;

- a) the identification of States/ANSPs that have the capacity to implement free routing based on ATM systems infrastructure and capability e.g. communication and surveillance (VHF coverage, ADS-B, ADS-C/CPDLC, Radar), requisite separation standards, air traffic controller conflict detection tools, controller training and capacity enhancement.
- b) Develop the concept of operations and an implementation plan which shall include; definition of the applicable ‘specific airspace’, the airspace design, time of operationalization (e.g. night, weekend), applicable flight level blocks (e.g. above FL360 only), procedures and requirements for flight planning, procedures for transitioning from free route to fixed route and vice a versa and entry/exit points (for complex airspace) defined by Lat/Long etcetera.
- c) Implementation of FRA should be preceded by a safety case and a definite trial period before full implementation. In the meantime, States/ANSPs identified under above should start to allow flight plannable waypoint-to-waypoint DCT routes.

## **3. ACTION BY THE MEETING**

- a) The meeting is invited to take note of the contents of the Working Paper,
- b) States to consider FRA concept into their national airspace master plan in line with the B1-FRTO ASBU module and AAO Sub-Group project plans,
- c) Eastern Africa States including, Seychelles, Mauritius, Kenya, Ethiopia, Tanzania and Uganda to develop and implement FRA as a case study for implementation of Free Routing Airspace in AFI region as part of B1-FRTO ASBU module.

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