

INTERNATIONAL CIVIL AVIATION ORGANIZATION**Third Meeting of the APIRG Airspace and Aerodrome Operations Sub-Group
(AAO/SG3), Virtual Meeting, 3 to 5 August 2020****Agenda Item 3: Planning and implementation****3.1 Airspace****CONOPS FOR FREE ROUTING AIRSPACE IMPLEMENTATION IN AFI***(Presented by IATA)***SUMMARY**

APIRG/22 Conclusion 22/36 urges States to consider incorporating Free Routing Airspace (FRA) in their national airspace concept and ATM Master Plan in line with ASBU B1-FRTO module and to include it into AAO/SG work program. Despite the fact that the conclusion is focused on the East African States including, Seychelles, Mauritius, Kenya, Ethiopia, Tanzania and Uganda; it is not limited to those States listed therein. In fact, in the APIRG 21 report 3.2.2.; AAO SG recognized the progress made in implementation of B0-FRTO and the need for States that are ready to progress to B1-FRTO in order to improve efficiency in the upper airspace.

Further, compounded with the demanding economic pressures on Aircraft Operators (AO) and ANSPs cause by COVID 19 outbreak, fuel and flight efficiency has become more critical than never before. Direct Routing Operations (DRO) as a starting point to implementing FRA is therefore critical for the re-start and recovery of aviation industry and should have the support of all the stakeholders.

ICAO, AFI States /ANSPs ,IATA and Airlines have worked together to introduce a set of operational improvements , taking advantage of the down turn of traffic , to enable aircraft to fly plan(not tactical) DCT segments between published waypoints defined either by 5LNCs and /or Navigation facilities (NAVAIDS), these Direct Routing Operations (DRO) allowed Airlines to flight plan shorter distance, save fuel, reduce CO2 emissions, reduce on flight time and increase payload by leaving unnecessary fuel on the ground leading to recovery and sustainability of aviation industry in an expeditious but in a safe manner.

REFERENCE(S): ICAO Global Air Traffic Management Operational Concept (Doc 9854)
ICAO Global Air Navigation Plan (Doc 9750), APIRG 21 and 22

Related ICAO Strategic Objective(s): Safety, Air Navigation Capacity and Efficiency, Economic Development of Air Transport and Environmental Protection.

1. INTRODUCTION

- 1.1 APIRG 21 item 3.2.3 discussed issues on improved Operations through Enhanced En-Route Trajectories under ASBU modules noted with appreciation that some AFI FIRs in the region were ready to begin free routing trials, and that they should build on the experience gained in other such initiatives e.g. Atlantic Ocean Random Routing Area (AORRA) and ASIO UPR. It was agreed then that AAO/SG would facilitate implementation actions by States and ANSPs that were ready to commence free routing trials and coordinate such trials between the applicable FIRs. The importance of working together was to ensure large portions of airspace covering multiple FIRs regionally implement FRA in order to realize significant benefits for users.
- 1.2 Free Route operations enable airspace users to fly as closely as possible to their preferred trajectory without being constrained by fixed airspace structures or fixed route networks. Free Route Airspace can be defined as an airspace within which users may freely plan a route from a defined entry point to a defined exit point (may require an intermediate waypoint) subject to airspace availability. In an FRA airspace, all fixed route networks are removed. However, flights remain subject to Air Traffic Control.
- 1.3 The term “Free Route” is a high-level title under which two different types of implementation can occur. Therefore, distinction is to be made between “Direct Routing Operations” (DRO) and “Free Route airspace” (FRA) operations. It is envisaged that Direct Route Operations will precede the implementation of Free Route Airspace. DRO is just but a series of directs between certain waypoints and can be flight planned (not tactical). DRO can also provide an opportunity for ANSPs to study and familiarize themselves with the concept of FRA. States that have implemented DRO can be considered to be ready to implement FRA.

2. DISCUSSION

- 2.1 COVID 19 outbreak has severely impacted the aviation industry as whole, Airlines tickets revenue has dropped, ANSPs aeronautical charges have declined accordingly.
- 2.2 Under these difficult circumstances all AFI aviation stakeholders (AFI States/ANSPs, Airspace users, ICAO, IATA) agreed to worked together, under a Collaborative Decision Making (CDM) approach, to introduce new operational improvements that will not only reduce the operating costs of Aircraft Operators (AOs), but also reduce the environmental impact of aviation CO2 emissions, boost opportunities for recovery of ANSPs revenue streams and progress the implementation of APIRG 22 conclusion 22/36 on Free routing airspace in line with B1-FRTO ASBU module.
- 2.3 ICAO WACAF ESAF offices have held series of virtual meetings with all involved parties (States/ANSPs , IATA) in order to assess ICAO WACAF and ESAF States capacity to implement DRO based on their ATM infrastructure and capabilities and to discuss the challenges associated with DRO implementation such as ATCOs, Training, Aeronautical mobile communications, surveillance infrastructure, air traffic controller conflict detection tools etc.
- 2.4 Supported by the low volume of traffic volumes and as enabled by their developed safety cases, States with the potential to implement DRO have published AICs and NOTAMs to allow DROs over their FIRs, in coordination with ICAO and IATA, for a limited period of time.
- 2.5 Considering the ICAO SARPs, lesson learnt from the current implementation of DRO in AFI region and lesson learnt from different regions around the world, ICAO and IATA

propose a draft Concept of Operations (CONOPS) for Free Routing Airspace which can provide a framework for a safe and harmonized implementation for FRA in AFI States. The CONOPS takes into consideration the existing airspace design, operational procedures, technologies and the degree of maturity of Air Traffic Flow Management (ATFM) and Flexible Use of Airspace (FUA).

2.6 The draft CONOPS provides also a set of safety requirements for Air Traffic Service Providers (ANSPs) to help them develop their safety case and start the FRA implementation at the local (State level).

2.7 IATA and ICAO also worked together to develop a draft a gap analysis checklist for ANSPs in order to assess their capacity to implement FRA based on their ATM infrastructure and capabilities.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) Take note of the contents of the Working Paper
- b) Review and examine the draft CONOPS and gap analysis checklist developed by ICAO/IATA and allocate the necessary resources (experts) to finalize the 1st edition of CONOPS “FRA implementation in AFI”
- c) Prioritize the FRA implementation project in AFI, to ensure the continuity of operational improvements/efficiencies to enable Aircraft Operators and ANSPs recover from the divesting financial impact of COVID 19, and reduce aviation environmental footprint
- d) Establish a project team to:
 - i.) Review the CONOPS for adoption by the AAO/SG and final approval by APIRG constituent bodies.
 - ii.) Develop a regional action plan in order to address the challenges associated with the FRA implementation.
 - iii.) Start the FRA implementation at the regional level, while making sure CDM principles are applied, consistency and harmonization is ensured among different states
 - iv.) Ensure FRA implementation lessons learnt from individual states implementation are shared among participating ANSPs/States in order to improve effectiveness of the processes, with focus of safety of flight operations.