INTERNATIONAL CIVIL AVIATION ORGANIZATION

Seventh Meeting of the APIRG Airspace and Aerodrome Operations Sub-Group (AAO/SG7)

Nairobi, Kenya, 12 - 16 August 2024.

Agenda Item 3: Achievements in Airspace and Aerodrome Operations .

3D1. USER PREFERRED ROUTES (UPR) TRIALS TO SUPPORT FREE ROUTE AIRSPACE IMPLEMENTATION IN THE CONTINENTAL AFI AIRSPACE

(Presented by AFRAA)

SUMMARY	
This paper presents the report of the work carried out by the African Aviation Industry Group (AAIG) on the UPR trials carried out in the AFI continent airspace since APIRG/26. **Action by Meeting** The Action by the meeting is as per paragraph 3 of this paper.	
REFRENCE(S)	
ICAO Strategic Objective(s)	Safety, Air Navigation Capacity and Efficiency, and Environmental Protection

1 INTRODUCTION

1.1 The meeting will recall APIRG/26 Conclusion 26/09, encouraging States, ANSPs, and African Aviation Industry Group (AAIG) to continue conducting user preferred routes (UPR) trials and collecting critical operational data to support the implementation of the AFI free route airspace (FRA) Project in collaboration with the AFI FRA PMT.

1.2 Implementing User-Preferred Routes (UPRs) through trial flights is an essential practical phase that precedes the Free Routing Airspace (FRA), which aims to provide more efficient and flexible airspace management while reducing fuel burned, carbon footprint, and airline operating costs.

1.3 Conducting UPR trial flights required close coordination among neighboring Flight

Information Regions (FIRs) and revealed operational challenges. However, by implementing a set-by-set approach—one day/one way, three days/two ways, seven days/two ways, and thirty days/two ways—stakeholders were able to overcome these challenges.

1.4 The trials start with a one-off UPR flight, continue with a three-day trial, a week of trial flights, etc. This step-by-step approach helps involved parties identify operational challenges.

2. DISCUSSION

2.1 Implementing user-preferred routes (UPRs) in Africa require the collaboration between Air Navigation Service Providers (ANSPs) and the airlines to ensure safe flight operations along user-preferred designed trajectories. However, the effectiveness of such UPR flights hinges on the coordinated support of ANSPs. Generally, the UPRs require new entry-exit points along FIR boundaries. Consequently, a new UPR is submitted to all relevant ANSPs for review, eventual modifications, and validation after thorough coordination among ACCs of adjacent FIRs. The successful trials can only result from effective coordination among all stakeholders, including airline Flight Dispatch/Flight planning Officers, Air Traffic Controllers (ATCOs), the management, and other supporting stakeholders i.e., AFRAA, CANSO, IATA, ICAO, and the FRA Project Management Team (PMT).

2.3 The primary challenge in effectively implementing the UPRs is a lack of communication and coordination. In the trails carried out so far, there was communication breakdown including in some instances:

- Crew not briefed by the flight dispatcher on duty.
- ATCO is on duty and unaware of a UPR trial.
- Missed coordination between adjacent FIRs.
- Pilot or ATCO missed communication.

2.4 Other challenges include:

- Sharing of information such as NOTAMs, weather, etc.
- Identifying the crossing points between trial trajectories and existing routes.
- Adherence to flight-level restrictions/conditions approved by Air Navigation Service Providers (ANSPs) during the trial flight.
- Lower participation in sharing reports/data by stakeholders after a trial flight.

Note: *Regarding flight operations from Eastern to and from Southern Africa, the*

UPR trials remains a challenge as one ANSP has restricted such flights at FL400 and above. Either the commercially suitable aircraft performance or the useful load limits the plane to fly below FL400 in the said FIR. The subgroup's identifying avenues to remove such a restriction on flying at FL400 and above will overcome the challenge and unlock significant trial benefits.

2.5 To address the challenges, extensive stakeholder coordination was achieved before launching trial flight sets. The coordination involves establishing a core team that includes the Airline, ANSPs, and other relevant parties.

2.5.1 Coordination flow:

- Collaborative planning between ANSPs can help develop solutions for effective coordination. This can include creating joint UPR working groups or establishing cross-border airspace management teams by nominating an ANSP focal point.

- Briefing airline pilots and ATCs before each trial flight and displaying the trial flight information to the airline OCCs and the ATC centers.

2.5.2 Critical Information Sharing/Restrictions:

- Sharing information [last-minute change, others] to cancel or continue the concerned trial flight as soon as possible.

2.5.3 Coordination, communication, and collaboration among ANSPs, airlines, and relevant stakeholders are needed to ensure that the UPR/FRA trial flights are conducted effectively and can move seamlessly across FIR boundaries. (The UPR/FRA Trial Procedure for Coordination among Stakeholders is as at Appendix 1 to the working paper).

2.5.4 The UPR/FRA Trials project has confirmed the expected benefits, enhancing airline efficiency, reducing operating costs [fuel saving, timesaving, etc.], and lessening CO_2 emission. Significant efficiency improvement provides optimized logistics for intra-Africa tourism and AfCFTA implementation in Africa, all in safe airspace.

3 ACTION BY THE MEETING

3.1 The meeting is invited to:

a) Note the information contained in this working paper.

b) Recommend avenues for removing flight-level restrictions during the trials for effective FRA implementation in AFI.

c) Provide input to enhance the UPR/FRA trial flight implementation.