



ICAO

**INTERNATIONAL CIVIL AVIATION ORGANIZATION**

**Twenty-Seventh Meeting of the AFI Planning and Implementation Regional Group  
(APIRG/27)**

**5 to 6 November 2024**

**Agenda Item 3: Implementation of air navigation goals, targets and indicators, including the priorities set in the Regional Air Navigation Plan**

**STATUS REPORT ON USER PREFERRED ROUTES (UPR) TRIALS TO SUPPORT FREE ROUTE AIRSPACE IMPLEMENTATION IN THE CONTINENTAL AFI AIRSPACE**

*(Presented by AFRAA on behalf of the African Aviation Industry Group – AAIG)*

<b>SUMMARY</b>	
<p>This paper presents the report of the work carried out by the African Aviation Industry Group (AAIG) on the UPR/FRA trials conducted in the AFI continent airspace since APIRG/26 in response to APIRG Conclusion 26/09.</p>	
<p><b>Action by Meeting</b></p> <p>The proposed action to the meeting is as per paragraph 3 of this paper.</p>	
<b>REFERENCE(S)</b>	<ul style="list-style-type: none"> <li>- APIRG 26 report</li> <li>- AFI UPR trials report.</li> </ul>
<b>ICAO Strategic Objective(s)</b>	<p><b>A-</b> Aviation Safety, <b>B-</b> Air Navigation Capacity and Efficiency, and <b>E</b></p> <p>- Environmental Protection</p>

**1 INTRODUCTION**

1.1 The APIRG/26 Conclusion 26/09, passed in Cotonou, Benin, in 2023, encourages States, ANSPs, and the 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. Implementing user-preferred routes through trial flights has demonstrated that ANSPs and airline coordination safely benefit flight operations across various FIRs for the participating airlines, including reduced fuel burned and avoided CO<sub>2</sub> emissions.

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, thirty days/two ways, and ninety 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 learn lessons and document the preparatory plan for an effective FRA implementation in Africa.

## 2. DISCUSSION

2.1 Implementing user-preferred routes (UPRs) in Africa requires 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).

2.2 The primary challenge in effectively implementing the UPRs is a lack of communication and coordination. In the UPR trials carried out so far, there was a 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.

2.3 Other challenges include:

- Sharing 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 remain challenging 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.*

2.4 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.

#### *2.4.1 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 ATCOs before each trial flight and displaying the trial flight information to the airline OCCs and the ATC centers.

#### *2.4.2 Critical Information Sharing/Restrictions:*

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

2.4.3 *Lessons learned:* Learning from the trials, coordination, communication, and collaboration among ANSPs, airlines, and relevant stakeholders were satisfactory for most of the flights. Identifying new crossing points (defined by Lat Long coordinates or abeam to an existing point) smoothed the flights across FIR boundaries. From November 2023 to August 2024, the trial program matured. Hence, an efficient UPR/FRA Trial Procedure has been developed for Coordination among Stakeholders; a copy is in Attachment 1 to the working paper).

2.4.4 *Benefits:* The UPR/FRA Trials project has confirmed the expected benefits, enhancing airline efficiency, reducing operating costs [fuel saving, timesaving, etc.], and lessening CO<sub>2</sub> emission. Significant efficiency improvement provides optimized logistics for intra-Africa tourism and African Continental Free Trade Area (AfCFTA) implementation in Africa, all in safe airspace.

2.5 Actual Savings and Projected 1-year savings are at **Attachment 2** to this working paper.

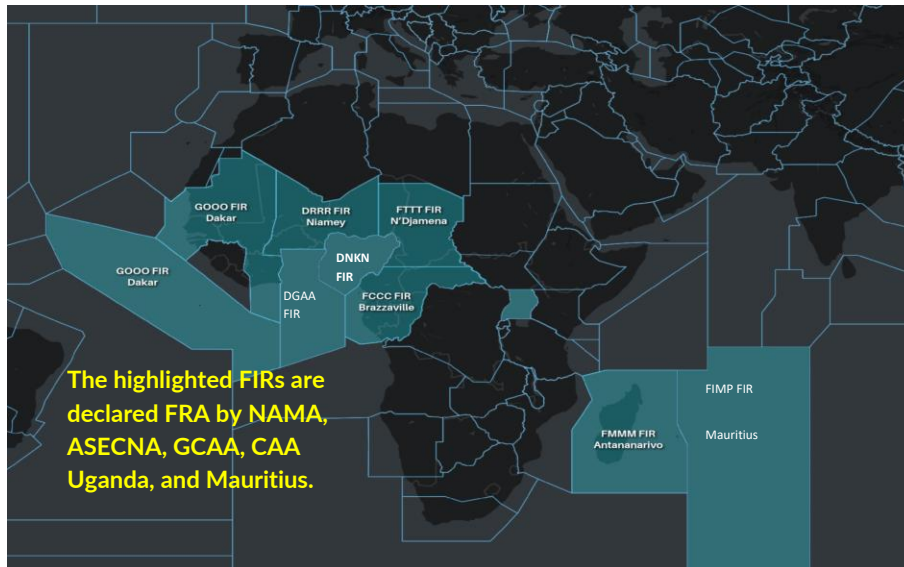
## **2.6 New Volunteer Airlines**

2.6.1 *African carriers.* AFRAA shared the trial outcome with its Executive Committee (EXC#192) to eventually attract additional airline volunteers to participate in the trials along many city pairs. This strategy has been successful, as 03 new volunteer Airlines [Egypt Air, RwandAir, and Royal Air Maroc] expressed their interest and have been brought onboarded. During the AFRAA courtesy visit to AirlinK on July 4th, 2024, the CEO also showed a strong interest in being part of the project.

2.6.2 *Non-African carriers.* During the recent IATA Regional Coordination Group (RCG) meeting on September 11th in Johannesburg, South Africa, three non-African carriers—Qatar Airways, Air Arabia, and Brussels Airlines—confirmed their participation in conducting trials.

## 2.7 FRA Implementation Roadmap

2.7.1 The AFI FRA PMT, in collaboration with the UPR trial team, held a workshop from 21 to 25 October 2024 in Nairobi, Kenya. The workshop reviewed the collected trial data. Since the initial trial flights on 2 November 2023, more than 100 cross-border flights have been conducted from Eastern to Western Africa following the step-by-step approach. About 10 trial flights were operated from Eastern to Southern Africa. Through FRA-declared FIRs or not-declared FIRs, Operators and ANSPs learned valuable operational lessons.



2.7.2 While in Nairobi, the workshop successfully coordinated and implemented two UPR flights from Cairo to Kinshasa and from Casablanca to Banjul. Egypt Air and Royal Air Maroc operated these flights on 23 and 24 October 2024, respectively. Furthermore, the workshop identified additional UPR trajectories for Accra – Dakar, Accra – Freetown, Casablanca – Abidjan, and Addis Ababa – Windhoek.

2.8 The next step will involve the parties in a three-month period in East-West trials, where most of the Western Cluster FIRs are declared as FRA. Data collected so far and those expected in the next three months should lead to the FRA's effective implementation by 2025 in the Western Cluster.

2.9 During the Nairobi workshop, CANSO informed the participants that the CADENCE Operational Information Sharing OIS had been renamed CANSO OIS. Hence, the site dedicated to supporting Africa is identified as CANSO AFRICA OIS. A dedicated training session on the platform was also conducted.

2.10 The CANSO AFRICA OIS will provide the UPR trial stakeholders with a handy coordination and follow-up analysis tool. The FRA PMT and the trial project core team will determine how best to use the platform.

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

#### 3.1 The meeting is invited to:

- a) Note the trial progress report contained in this working paper;
- b) Encourage States and ANSPs to fully support UPR trials on the continent by facilitating access to optimum flight trajectories during the trials for effective FRA implementation in AFI;
- c) Request that AFRAA, IATA, and CANSO pursue and intensify the trials with the increasing number of participating air operators, collecting and analyzing UPR trial data and supporting data-driven FRA implementation; and
- d) Urge the PMT, AFRAA, IATA, and CANSO to plan and implement Free Route Airspace in the Western and Eastern Clusters by 2025.