

## NACC and SAM Regions Common Framework for Airspace Optimization

The International Civil Aviation Organization (ICAO) recognizes the critical importance of airspace optimization in ensuring safe, efficient, and sustainable air traffic management. The North American, Central American, and Caribbean (NAM/CAR) region and the South American (SAM) region, though diverse in their complexities and operational environments, share a common goal of enhancing airspace management. This document serves as an overarching framework to foster collaboration between the two regions, supporting individual and collective efforts toward airspace optimization.

### Regional Overview

#### NAM/CAR Regions

The NAM/CAR Regions are characterized by a diverse airspace environment, with a significant portion of the Caribbean region being overwater, which presents unique challenges in airspace management. These regions are focused on implementing advanced technologies and procedures to enhance en-route and terminal operations, optimize airspace structure, and improve Air Traffic Flow Management (ATFM).

#### SAM Region

The SAM region, encompassing a vast and diverse geographical area, faces different operational complexities, including high-altitude terrain and varied traffic densities. The SAM Region is dedicated to modernizing its air traffic management infrastructure, improving communications, navigation and surveillance (CNS) capabilities, and enhancing safety and efficiency through collaborative efforts.

### Collaborative Goals and Objectives

#### 1. Harmonization of Standards and Procedures:

- Develop and implement harmonized air traffic management (ATM) standards and procedures to ensure seamless operations across regional boundaries.
- Promote the adoption of best practices and innovative technologies to enhance airspace safety and efficiency.

#### 2. Capacity Building and Training:

- Facilitate joint training programs and workshops to build capacity and enhance the skills of aviation professionals in both regions.
- Encourage knowledge sharing and exchange of expertise to address common challenges and leverage collective strengths.

#### 3. Data-Driven Decision Making:

- Utilize data analytics and performance metrics to inform decision-making processes and measure the effectiveness of airspace optimization initiatives.
- Implement Key Performance Indicators (KPIs) aligned with ICAO's Global Air Navigation Plan (GANP) to track progress and ensure accountability.

#### 4. Enhanced Communication and Coordination:

- Establish robust communication channels and coordination mechanisms between the NAM/CAR and SAM regions to support collaborative planning and execution of airspace optimization projects.
- Foster a culture of cooperation and mutual support to address regional disparities and ensure no country is left behind.

#### Key Initiatives and Projects

- Free Route Airspace Implementation:  
Both regions will work towards implementing Free Route Airspace (FRA), enabling aircraft to fly more direct routes, reducing fuel consumption, and minimizing environmental impact.
- Air Traffic Flow Management (ATFM) Enhancement:  
Collaborative ATFM initiatives will be undertaken to improve traffic flow, reduce delays, and optimize airspace capacity.
- Upper Airspace Agreement:  
An agreement between the NAM/CAR and SAM regions will be established to facilitate seamless operations in upper airspace, enhancing safety and efficiency for overflying aircraft.

#### Short Term common Initiatives on Airspace Optimization in CAR and SAM Regions

- Publication of current and future SDR and UPR based on the models of **Appendixes A and B**.
- Harmonization of SDR publication in AIP ENR 2.6 and UPR publication in the AIP ENR 3.5.
- Use of UPRs playbook published in the ANSPs and/or in the ICAO office's webpages.
- Optimize Longitudinal Separation for 20 NM in non-ATS surveillance airspace and 10 NM in ATS Surveillance Airspace.

#### Conclusion

The collaboration between the ICAO NAM/CAR and SAM regions is vital to achieving the overarching goals of airspace optimization and ensuring the safe, efficient, and sustainable management of global air traffic. By working together, leveraging shared expertise, and addressing regional complexities, both regions can enhance their airspace capabilities and contribute to the global aviation community's advancement. This document serves as a bridge, reinforcing the commitment to collaboration and continuous improvement while respecting the unique needs and goals of each region.

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## Appendix A

### Publication model – UPR

#### User-preferred routes

User-preferred routes (UPR) are routes requested by airlines that optimize routing between specific city pairs. UPRs must be approved by all air navigation service providers (ANSPs), through their flow management units, area control centre managers, or civil aviation authorities, as appropriate, responsible for providing air traffic services on any segment of the UPR. Upon publication, airlines can use these segments for any city pair until their cancellation or modification.

UPRs may undergo a trial period, in which case they will be available for a specific period (that is, a trial period) and for a particular airline. Route trials are intended to determine the operational viability of routes and once operational viability has been verified, the routes will be published following the process described below.

1. Aircraft shall use the UPR starting from one of the following waypoints:
  - a. published ATS route; or
  - b. last waypoint of a published departure procedure (SID); or
  - c. boundary of an area where strategic direct routing (SDR) is applied.
2. UPRs are published on the website of the air navigation service provider at: TBD
3. The complete UPRs, which go beyond the boundaries of national FIRs, can be found on the ICAO SAM Office portal/website: TBD

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## Appendix B

### Publication model - SDR

#### IMPLEMENTATION OF STRATEGIC DIRECT ROUTING IN THE UPPER AIRSPACE OF THE XXXX FIR

##### 1. Purpose

1.1. The purpose of this AIP Supplement is to inform users of the upper airspace of the XXXX FIR about the implementation of ASBU element FRT0 B0/1 - Direct Routing (DCT) outlined in the sixth edition of the Global Air Navigation Plan of the International Civil Aviation Organization (ICAO), known as Strategic Direct Routing (SDR), under the procedures described below.

##### 2. Introduction

2.1. Over the last 10 years, a complete restructuring of the South American (SAM) ATS route network has taken place, involving the realignment and/or elimination of inefficient paths, as well as the implementation of new routes, resulting in a more direct and optimized fixed route structure.

2.2. The use of fixed ATS routes can no longer provide the efficiency required by airspace users. SDR implementation has been established in order to offer users additional options when selecting more efficient paths/routes, and to optimize flight planning and fuel consumption, through the filing of flight plans (FPLs) with direct routes.

2.3. SDR implementation is a natural evolution in airspace use optimization and a transition to the use of the free-route airspace (FRA) concept, as envisaged in the Global Air Navigation Plan (GANP).

##### 3. Operational Procedures

3.1. Area of application

3.1.1. Strategic Direct Routing (SDR) will be applied in the upper airspace, in the area between the following points/coordinates and time schedules:

(on a State-by-State basis)

3.2. Flight plans

3.2.1. Flight plans will be filed in accordance with the tables of cruising level contained in Appendix 3 to ICAO Annex 2.

3.2.2. The flight plan must be based on published significant points (waypoints) or radio navigation aids and the distance must not exceed xxx NM.

3.2.3. The flight plan shall contain a significant point (waypoint) or reporting point (LAT/LONG) at FIR boundaries.

3.3. Contingency

3.3.1. SDRs may be temporarily suspended in that part of airspace subject to:

- a) partial or full activation of contingency plans;
- b) impairment of ATS surveillance service;
- c) degradation of VHF communications; or
- d) degradation of the flight plan system.

#### 4. Additional Information

4.1.1. Additional information can be obtained through the following VHF contact:

(on a State-by-State basis)

Note 1: It will be up to each State to adapt this model to meet local specificities.

Note 2: A chart representing the area of SDR application may be attached if the State does not have a DASA-equivalent system.