International Civil Aviation Organization SAM/IG/27-WP/2.10
South American Regional Office 10/05/2022
Twenty Seventh Workshop/Meeting of the SAM Implementation Group SAM (SAM/IG/27) – Regional Project RLA/06/901
(Lima, Perú, 31 May to 3 June 2022)

Agenda Item 2: **Report of activities of the GESEA and Subgroups**

b) ATM implementation. Progress of the Subgroups

UPDATE ON THE IMPLEMENTATION PROCESS OF THE *EDE* CONCEPT IN BRAZILIAN AIRSPACE

(Presented by Brazil

SUMMARY

The purpose of this working paper is to present a summary of the status of the implementation of the Strategic Direct Routing (EDE) concept in Brazilian airspace and the next steps envisaged.

Reference:

- SAM/IG/26 meeting report.

ICAO strategic objectives:	A – Safety D – Efficiency

1. Background

1.1 To mitigate the effects of the COVID-19 pandemic on air traffic demand in Brazil, the implementation of the Strategic Direct Routing (EDE) concept occurred through a phased process, with the aim of facilitating the adaptation of users and air traffic controllers of control centers (ACC).

1.2 The EDE was launched to provide airspace users with greater flexibility in respect to the fixed route network. In addition, it allows users to optimize the planning of their flights, making them more efficient and with the aim of reducing fuel consumption and, consequently, the emission of polluting gases.

1.3 The establishment of the EDE concept is one of the elements listed in the ICAO International Civil Aviation Organization's Global Air Navigation Plan (GANP) (Doc 9750), inserted in Block 0 of implementations in the Aviation System Upgrade Blocks (ASBU), receiving the identifier FRTO-0/1.

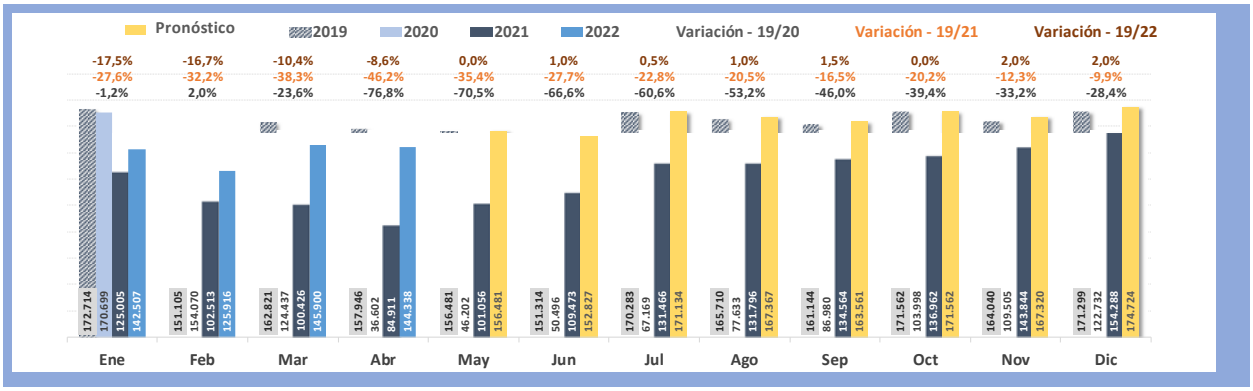
1.4 The first phase of the project began with the implementation of the EDE concept in the upper airspace of the FIR Recife (SBRE) and Amazonica (SBAZ), as of April 16, 2020, temporarily, and ended with the definitive implementation, as published in the AIP Brazil, on March 25, 2021.

2. Analysis

2.1. In 2021, Brazilian airspace already showed a recovery in air operations, after the severe reduction observed in 2020. The implementation of the EDE concept in the FIR SBRE and SBAZ presented very satisfactory results, according to the feedback received from the representatives of the Brazilian airlines, while there was no increase in the workload of the controller or impact on the complexity of the ATC sectors.

2.2. In the figure below, you can consult the movements in the main Brazilian airports in recent years and compare them with the movement prior to the pandemic (2019). Thus, in April 2020, when the EDE concept was temporarily implemented in the FIR SBRE and SBAZ, Brazilian demand was very low, operating with a reduction of 76.8% compared to April 2019. The following year, when the definitive implementation occurred in the FIR SBRE and SBAZ, operations in the main Brazilian airports already exceeded those of 2020, but the second wave of COVID-19 stopped the recovery of national demand and the observed performance was 38.3% compared to March 2019.

Figure 1 – Annual demand comparison



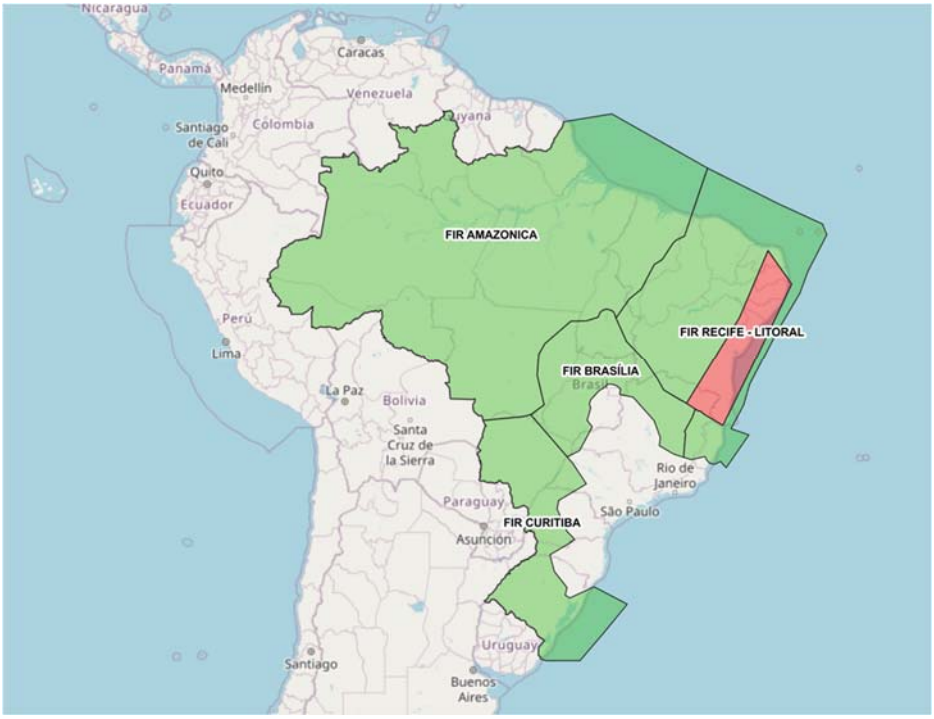
Source: CGNA

2.3. In April 2022, when the EDE was implemented in Brasilia and Curitiba FIR, Brazilian demand had practically reached the level of 2019, with a reduction of only 8.6%, mainly due to the slower recovery of international aviation.

2.4. Several meetings and studies were held during 2021 and 2022 with the aim of implementing the EDE in the FIR Brasilia and Curitiba, portions of airspace with the highest density in Brazil, with safety risk studies, issues related to the workload of the controllers and processing of flight plans.

2.5. DECEA approved the implementation of the EDE as of April 2022 in the upper airspace (above FL250, inclusive) of the Curitiba FIR, in sectors ATC S01, S02, S12, S13, S14, S15 and S16, and of the Brasilia FIR, in sectors ATC S08, S09, S10, S11 and S15. Figure 2 below presents all the EDE airspace in Brazil, as published in the national AIP.

Figure 2 - EDE in Brazilian air space



Fuente: GEOAISWEB

2.6. DCT Routes in Strategic Direct Routing are available under the following operating conditions:

a) In the case of flights from sectors located outside the Airspaces where the EDE concept is applied, but with direction or crossing of sectors where it is already implemented, the route to be completed must begin (point of entry) at a point of travel published in the AIP Brazil, at the limit between the FIR or between the ATC sectors or, failing that, at the point of travel immediately after entry into these airspaces;

b) In the case of flights initiated within the Airspaces where the EDE concept is applied, but that go to or cross sectors where this concept has not yet been implemented, the route must end (departure point) at a route point published in AIP Brazil, at the limit between the FIR or between the ATC sectors or, failing that, at the point of travel immediately prior to entry into these airspaces;

c) Flight plans that involve takeoffs from aerodromes located within the Airspaces where the EDE concept is applied and that have SID published, must maintain the lateral profile until the last point of the corresponding SID, filling the DCT route in the flight plan only after that route point;

d) Flight plans involving arrivals at aerodromes located within the Airspaces where the EDE concept is applied and that have STAR published, must include the first route point of the corresponding STAR;

e) The DCT Route must be indicated in the flight plan and must use only the route points published in the AIP Brazil, being prohibited the presentation of flight plans with DCT routes between geographical coordinates;

f) The distance between waypoints should not be greater than 300NM; and

g) The flight plan must be completed in accordance with the table of cruising flight levels in Appendix 2 of ICAO Annex 2.

2.7. The EDE concept applied in Brazilian airspace and presented in Figure 2 is authorized H24, except in the red rectangle of the SBRE FIR, where it applies only between 23:00 and 12:30 UTC (time available in the AIP Brazil). The airspace portions of the FIR Brasilia and Curitiba in which the EDE concept has not yet been approved involve the sectors responsible for the flow of arrivals and departures from the São Paulo Terminal, the largest in Brazilian airspace, and flight planning is maintained using the ATS route network.

2.8. DECEA's next steps are to study the possibility of improving the scope of the EDE authorization in the FIRs Recife, Brasilia and Curitiba, and to initiate studies to implement the Free Routes Airspace (FRA) concept in Brazil, according to the FRTO-B1 /1 of the GANP.

2.9. Although the implementation in the FIR Brasilia and Curitiba is very recent, there have already been positive comments from Brazilian airlines. One of Brazil's leading airlines presented preliminary results estimating savings of more than 1900 miles in the operation of its flights in the first week alone after the implementation occurred in April 2022.

3. Suggested actions

3.1 The Meeting is invited to:

a) Take note of the information provided in this working paper;

b) consider the results obtained as a way to develop and guide the implementation of the EDE in the countries of the SAM Region; and

c) disseminate its initiatives for the implementation of Strategic Direct Routing for the knowledge of the countries of the SAM Region.

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