International Civil Aviation Organization SAM/IG/27-WP/2.11
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
(Virtual, 31 May to 3 June 2022)

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

b) ATM implementation. Progress of the Subgroups.

SISCEAB FIVE-YEAR DEMAND FORECAST

(Presented by Brazil)

SUMMARY

The purpose of this Working Paper is to present a summary of the process of preparing and disseminating the five-year demand forecast of the Brazilian Airspace Control System (SISCEAB) prepared by DECEA.

References:

- Guide for the implementation of the ATFM service in the SAM Region 2020-2025, ICAO
- SAM/IG meeting reports.

Strategic objectives of ICAO:	*A – Safety* *D - Efficiency*

1 Introduction

1.1 ATFM is based on two essential pillars for its effective application: the forecast of demand and the declared capacity of ATM system. Therefore, it is necessary to know the flight intentions of commercial aviation and study the behavior of the other segments to prepare and disseminate demand forecasts in the short, medium and long terms, for strategic and pre-tactical planning purposes, in addition to tactical decisions.

1.2 Since 2020, ATFM in Brazil has undergone a major reformulation after the restructuring of the Air Navigation Management Center (CGNA), the Brazilian central agency for air navigation management, investing in the development of post-operations analysis and monitoring of ATM performance indicators developed by the International Civil Aviation Organization (ICAO).

1.3 The scenario imposed by the COVID-19 pandemic demanded the need to adapt the capacity of the Brazilian Airspace Control System (SISCEAB) to the new demand. Considering the transitory nature of this scenario, it was necessary to develop an action plan to balance SISCEAB capacity with the gradual increase in demand: the Operations Plan – COVID-19 Recovery. In the Operations Plan it was possible to present and discuss with the aviation industry the short-term flight intentions of commercial aviation in the Brazilian airports.

2 Analysis

2.1 The DECEA Plan of Operations proved to be a very useful tool in several ways. In terms of demand forecasting, it enabled a closer relationship between PSNA/regulators and airspace users, making airline planning transparent to Brazilian airport operations. During the pandemic, the impact caused by sanitary measures and other restrictions imposed by governments on flight planning in the short and medium terms became evident.

2.2 Plan of Operations meetings were weekly at the start of the process (June 2020), when commercial aviation had limited predictability of up to 15 days, based on planning sent to CGNA a month in advance, with weekly reviews. At the end of 2020, predictability was adequate up to 45 days in advance. Currently (IATA Summer 2022 season), the predictability of ninety days ahead already undergoes few variations (except holidays and specific events such as military exercises or major festivities).

2.3 The EUROCONTROL forecast model is considered as benchmarking in the work carried out in Brazil, with the results of its calculation forecast, its methodology and the follow-up of the results being available on different networks such as the institutional page on Facebook and different discussion forums. . The methodology for applying three scenarios (realistic, optimistic and pessimistic, considering the evolution of the pandemic) was inspired by the product made available by EUROCONTROL at the following link:

https://www.eurocontrol.int/covid19

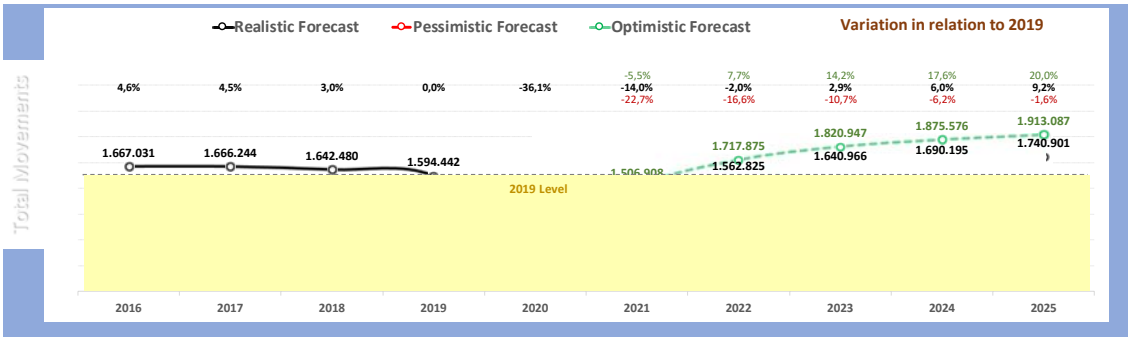
2.4 The Brazilian government, through the Civil Aviation Secretariat (SAC), launched a National Air Plan in 2018, which will be updated in 2022. This report has the air traffic forecast for various airports for the next 30 years. This report helped to understand the policies of the aviation sector, the current moment and the expectations for the future.

2.5 Aviation was recovering from a crisis in the period from 2016 to 2018, but the 2020 pandemic generated a new unprecedented crisis in the sector that could serve as a parameter for a future recovery. The monitoring of the GDP recovery, the reduction of health barriers due to the reduction in Covid-19 cases, the second wave with the greatest impact at the beginning of 2021 and the planning of the IATA seasons were permanent exercises to give greater predictability to the network of Brazilian commercial flights. The other aviation segments, mainly in the North and Northeast regions, allowed a faster recovery of the airports in these regions.

2.6 The follow-up of the demand was connected to the number of takeoffs and landings of the main Brazilian airports. Due to the progress in the use of databases, since 2021 it is possible to follow the evolution of the number of movements of the FIRs of Brazil and the CRCEA-SE (which includes the São Paulo and Rio de Janeiro Terminals), including calculating the number of flights from Brazil that passed through one of the air traffic control systems, eliminating double counting when two or more systems are used.

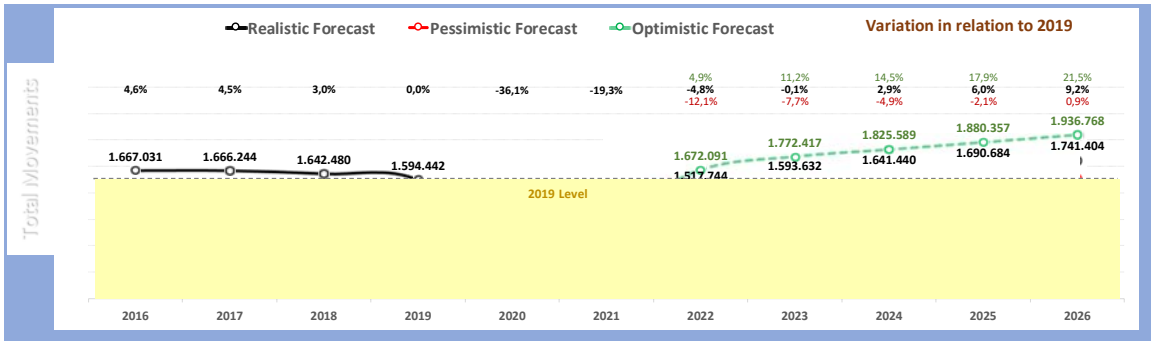
2.7 In early 2021, the five-year forecast of air movements in Brazil was published for the first time by DECEA. This forecast was monitored through the assertiveness rate, which was strongly impacted by the second wave of Covid-19 in Brazil in the first quarter of 2021, when a scenarios between the realistic and pessimistic forecasts was recorded. Monthly evaluations and revision of the annual forecast served as lessons for future predictions.

Figure 1 - 2021 – 2025 Forecast



Source: CGNA.

Figure 2 - 2022 – 2026 Forecast

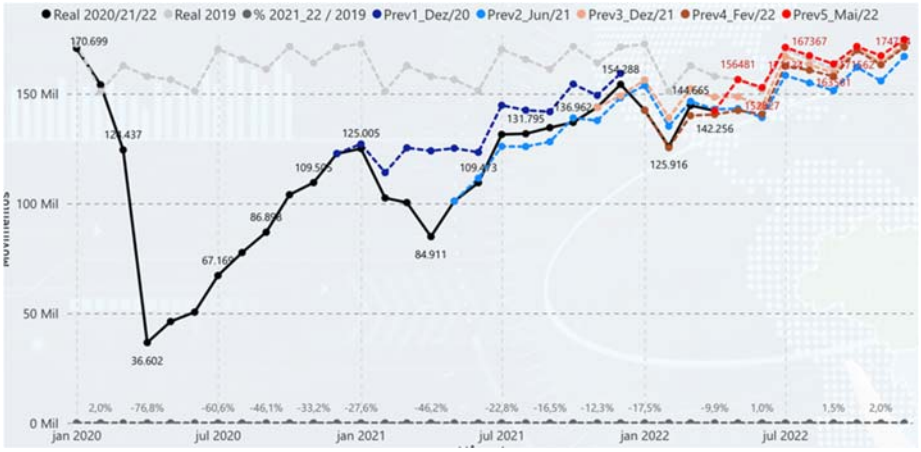


Source: CGNA

2.8 A dashboard with monthly, annual and five-year demand forecasts was created and made available, integrating predictive methodologies and allowing the success rate to be monitored. There was transparency with the review of the annual forecasts at each end of the month, so that we had the best numbers to carry out the most appropriate airspace planning.

2.9 A new version of the five-year air traffic forecast is currently available, which serves as a reference to know if we are below or above forecast during the months of the year. It is also possible to monitor, in the available dashboard, if the forecast for previous years was fulfilled or if the result was very different due to some specific factor in the recovery of demand.

Figure 1 - Dashboard



Source: CGNA

3. Suggested actions

3.1 The States participating in the Meeting are invited to:

a) take note of the information provided in this Working Paper; and

b) Encourage States to seek methodologies for the preparation and dissemination of short, medium and long-term forecasts.

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