# Operations Plan

## Recovery COVID-19

**Extraordinary Edition**
**version 2.0**
December 2020

**SISCEAB**
Sistema de Controle
do Espaço Aéreo Brasileiro

DECEA
Departamento
de Controle do Espaço Aéreo

CGNA
Centro de Gerenciamento
da Navegação Aérea

## EXECUTIVE SUMMARY

### General Context

As a consequence of the declaration of coronavirus pandemic (COVID-19) by the World Health Organization (WHO), several States declared the closure of their borders and, consequently, of their airports for international operations and, in some cases, even domestic flights.

In Brazil, the total number of air movements registered in April 2020 had a reduction of 74.6% in comparison with the same month in 2019. Amongst the three main segments of aviation in the country, commercial, general and military, the impact was even more expressive for commercial aviation, which fell by 89.5% compared to the same period in 2019. The other two aviation segments also had considerable, but smaller, declines. Following a trend already observed in other countries, general aviation has suffered less impact than commercial aviation. Nevertheless, there was a reduction of 47.2% in comparison with the figures for the same period last year.

Such scenario imposes a need to adapt the capacity of the Brazilian Airspace Control System (SISCEAB) to the new demand. However, considering the transitional nature of the current scenario, it is necessary to develop an action plan aimed at balancing SISCEAB's capacity with the gradual increase in demand that will certainly occur in the coming months.

The Operations Plan - Recovery COVID-19 is an extraordinary edition of the SISCEAB Operations Plan, developed by Air Navigation Management Center (CGNA) collaboratively along with all SISCEAB stakeholders, under the exceptional circumstances of the COVID-19 pandemic.

### Objective

The Operations Plan - Recovery of COVID-19 objective is to structure the following actions during the period of air operations recovery:

a) to adjust SISCEAB's capacity to the gradual increase in demand through the following measures:
   i. development of a mechanism for closely monitoring demand and possible capacity constrains;
   ii. optimization of airspace so that the restrictions usually existing due to high demand are temporarily suspended, or even eliminated, depending on the new scenario;
   iii. search for the feasibility of executing the optimal flight profiles planned by users; and

iv. maintenance of delay rates at adequate levels, depending on demand and possible capacity restrictions.

b) to contribute to the recovery and sustainability of the air transport system at a national, regional and global levels in the new projected scenario, through the prioritization of projects currently underway that aim to improve the SISCEAB performance, pursuing schedules and deliveries.

**Scope**

This Plan applies to the 22 million km$^2$ of airspace under Brazilian jurisdiction - 8.5 million km$^2$ in continental area and 13.5 million km$^2$ over the Atlantic Ocean, according to international treaties, corresponding to the following areas of the Flight Information Regions (FIR): Brasília, Curitiba, Amazônica, Recife and Atlântico.

**Validity and update**

The present Plan started on June 1st, 2020, and will be updated periodically, whenever necessary, up to December 31, 2021, and may be cancelled or extended according to the recovery period required for the air transportation system at national, regional and global levels.

**Rio de Janeiro, December 1st, 2020.**

**Marcelo Jorge Pessoa Cavalcante Colonel**
**Commander of CGNA**

**Brigadier Fernando César da Costa e Silva Braga**
**Head of SDOP of DECEA**

**Liutenant-Brigadier Heraldo Luiz Rodrigues**
**General Director of DECEA**

**VERSION HISTORY**

| Version | Date | Reason | Sections affected |
|---|---|---|---|
| 1.0 | 15/05/2020 | First version | All |
| 2.0 | 01/12/2020 | a) Inclusion of the Annex I – Severe Weather Avoidance Plan (SWAP);<br>b) Inclusion of the Annex II – Alternate Plan;<br>c) Update on the results obtained in the optimization of airspace;<br>d) Inclusion of the implementation of RNP APCH procedures for visual runways; e<br>e) Update of the generated products. | Annex I<br>Annex II<br>Chapter 1 (item 1.5)<br>Chapter 2 (item 2.11)<br>Chapter 3 (Table 5) |

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## ABBREVIATIONS

The abbreviations used in this Plan have the following meanings:

| | | |
|---|---|---|
| ABEAR | - | Brazilian Association of Airlines |
| ACC | - | Area Control Center |
| AIP | - | Aeronautical Information Publication |
| AIS | - | Aeronautical Information Service |
| AMHS | - | ATS Message Handling System |
| APP | - | Approach Control |
| ATC | - | Air Traffic Control |
| ATFM | - | Air Traffic Flow Management |
| ATM | - | Air Traffic Management |
| ATS | - | Air Traffic Services |
| CCO | - | Airline Operations Control Center |
| CDM | - | Collaborative Decision Making |
| CGNA | - | Air Navigation Management Center |
| CIRCEA | - | Airspace Control Circular |
| COVID | - | *Coronavirus Disease* |
| DECEA | - | Airspace Control Department |
| EMBRAER | - | Brazilian Aeronautical Company |
| FIR | - | Flight Information Region |
| FMC | - | Flow Management Cell |
| FPL | - | Flight Plan Message Presented |
| FRTO | - | *Free Route Airspace* |
| FUA | - | Flexible Use of Airspace |
| GEPEA | - | Study Group of Airspace Planning |
| IAF | - | Fixed initial approach |
| IATA | - | International Air Transport Association |
| IPEV | - | Flight Research and Testing Institute |
| NOTAM | - | Notice to Airmen |
| OACI | - | International Civil Aviation Organization |
| OPC | - | Optional Route |

| | | |
|---|---|---|
| PFF | - | Performance Framework Form |
| RPL | - | Repetitive Flight Plan |
| RRSM | - | Reduced Separation Minimum between Aircraft Using the same Runway |
| SID | - | Standard Instrument Departure |
| SIGMA | - | Integrated Air Movement Management System |
| SISCEAB | - | Brazilian Airspace Control System |
| STAR | - | Standard Instrument Arrival |
| SWAP | - | Severe Weather Avoidance Plan |
| TMA | - | Terminal Area |

## 1 INITIAL SCENARIO

Shortly after the declaration of a pandemic on the new COVID-19 and, consequently, the adoption of the first actions in terms of isolation and social distance were announced by the Brazilian authorities, the CGNA initiated the actions below detailed in order to optimize flights in the departure, route and arrival phases in the main terminal areas (TMA) in order to meet the new demand scenario with the greatest efficiency possible. These actions were held by the GEPEA *Adhoc* Group CDM Routes, whose coordination is under its responsibility along with the participation of representatives from the main Brazilian air traffic control units (ATC), airlines, the International Air Transport Association (IATA) and the Brazilian Association of Airlines (ABEAR).

### 1.1 Route Optimization

The optimization work started with enroute airspace and was divided into phases. In Phase 1, 211 Preferential and Alternative Routes in the Route Playbook were analyzed. Of this total, 184 routes were immediately turned into Optional Routes (OPC) and are no longer mandatory, allowing airspace users a greater flexibility in flight planning.

In Phase 2A, a feasibility analysis of direct routes between city pairs was carried out, with the objective of connecting the last point of the Standard Instrument Departure (SID) from the airport of origin to the first point of the Standard Instrument Arrival (STAR) of the destination airport. The Group concluded that it was possible to implement such changes and then a total of 34 direct routes were created.

In Phase 2B, the feasibility analysis of an early implementation of the Free Route Airspace concept (FRTO ASBU/0) throughout Amazônica and Recife FIR was carried out. Such concept is also being conducted by CGNA via GEPEA *Adhoc* Group Airspace Management. The specialist team concluded that it was feasible to implement the FRTO ASBU/0 in Amazônica and Recife FIR and decided that the procedures would be included in the respective AIS publications.

### 1.2 Arrivals and Departures Optimization

The enroute optimization was carried out and the optimization feasibility analysis on the arrivals and departures of the main TMA was initiated, based on the use of intermediate points of SID and STAR, as well as the shortening of aircraft to the Initial Approach Fixed (IAF) of the approach procedures. It

should be noted that such optimization was already being carried out at the initiative of the responsible ATC units at tactical level. However, we sought to standardize and structure this procedure within the scope of each ATC unit, allowing greater predictability to airspace users.

The Group concluded that it was feasible to optimize arrivals and departures, having implemented forty routes, which were denominated Programmed Tactical Routes and are available on the CGNA Operational Portal, at RESOURCES tab.

### 1.3 Flexible Use of Airspace (FUA)

In order to improve the efficiency of flights in Brazilian airspace, and based on the FUA concept, CGNA reinforced its coordination with users of certain restricted areas in order to increase the availability of these areas for the use of civil aviation, optimizing air operations in all phases of the flight.

Thus, taking into account the difficulties of civil aviation in maintaining its flights regularity in the current scenario, coordination was done with the Flight Research and Testing Institute (IPEV) and with the Brazilian Aeronautical Company (EMBRAER) in order to develop a plan in a way that test flights would be concentrated as much as possible within ENSAIO areas, avoiding XAVANTE A and B areas. In this way, UZ10 airway, which is used by aircraft approaching to Campinas and Guarulhos airports, would be available for the operation of civil aviation, without any constraints.

### 1.4 Flight plan

Regarding the flight plan presentation, NOTAM was issued stating that this presentation must be done via INTERNET or TELEPHONE, in order to avoid crowding in AIS units.

Additionally, considering the current scenario of uncertainties and the consequent difficulties in planning of flights, CGNA and airlines, collaboratively, decided to use, on a temporary basis, the complete Flight Plan (FPL) in lieu of the Repetitive Flight Plan (RPL), via SIGMA or AMHS.

### 1.5 Results

The initiatives on optimizing departures, enroute and arrival phases inside the main Brazilian TMAs resulted in fuel savings for the three largest national companies between the months of April and September 2020 equivalent to a sum of 2950 flight segments between São Paulo and Rio de Janeiro, as detailed in Table 1.

**Table 1 – Results of optimization**

| | Operations | NM | Min | FUEL (kg) | $CO_2$ (kg) |
|---|---|---|---|---|---|
| **AZUL** | 2239 | 39687 | 10790 | 959717 | 3032704 |
| **GOL** | 7414 | 153403 | 29002 | 2122121 | 6705904 |
| **LATAM** | 4475 | N/A | 14038 | 2849844 | 9005507 |
| **TOTAL** | **14128** | **193090** | **53830** | **5931682** | **18744115** |

## 2 OPERATIONS RECOVERY SCENARIO

Once having adopted the immediate airspace optimization actions listed in the previous Chapter, it is mandatory to develop new actions aimed at the resumption of operations considering this a challenging scenario, due to its dynamism and lack of precedents. Such actions should adapt SISCEAB's capacity to the gradual increase in demand and besides contribute to the recovery and sustainability of air transport system at a national, regional and global levels in this new projected scenario.

Regarding the adequacy of SISCEAB's capacity to the gradual increase in demand, the following actions allow:

a) to define a process for closely monitoring of demand and possible capacity constraints;
b) to optimize the airspace so that restrictions caused by high demand are temporarily suspended or even eliminated according to the new scenario;
c) to search the performance of optimal flight profiles planned by the users; and
d) to maintain the delay rates at adequate levels.

Regarding the contribution to the recovery and sustainability of the air transport system as a whole in this new projected scenario, it is necessary to prioritize projects that aim to improve SISCEAB performance, pursuing schedules and deliveries. Within these projects, which are detailed below, we highlight AGILE GRU, AGILE RIO, AGILE VCP, GEPEA and the Airport Infrastructure Committee, as they are an industry initiative, making use of a collaborative and cooperative environment and, consequently, representing their own necessities.

### 2.1 Enroute Optimization

The maintenance of the enroute optimization achieved in Phases 1 and 2 mentioned in the previous chapter will be pursued as far as possible due to the gradual increase of air traffic demand.

Regarding the Optional Routes, its maintenance will be evaluated on a case-by-case basis, giving priority to those that bring the greatest benefit to airspace users, considering the volume of traffic and the reduction in distance flown. In this sense, small adjustments in the published routes and/or resectorization of an ACC/APP may be necessary, among other measures.

Regarding the Free Route Airspace concept (FRTO ASBU/0) implemented in Amazônica and Recife FIR, the feasibility of implementing it on a permanent basis should be evaluated.

### 2.2 Arrivals and Departures Optimization

The maintenance of the arrivals and departures optimization achieved (see previous Chapter) will be pursued as far as possible according to the gradual increase in demand. The use of the Tactical Programmed Routes on a permanent basis will be analyzed as well. The intention is to allow its use in times of low demand or during times when other busy airports within the same TMA are closed to air traffic, such as São Paulo and Rio de Janeiro; during the closing operations period of Congonhas (SBSP/CGH) and Santos Dumont (SBRJ/SDU) Airports, which would be beneficial for air traffic departing and arriving at Guarulhos and Galeão Airports, respectively.

### 2.3 Flexible Use of Airspace (FUA)

The maintenance of the flexible use of areas XAVANTE A and B achieved (see previous Chapter) will be pursued as far as possible so that optimization in all phases of flight is fully achieved.

In addition to that, a thorough mapping of the main restricted areas in Brazil is being carried out in order to propose solutions for making their use even more flexible, through the PFF005 of the SIRIUS BRASIL Program and the GEPEA *Adhoc* Group Airspace Management, both under CGNA's coordination, among other solutions. Instruction areas of the Air Force Academy and the BARREIRO and PARAÍBA 1 areas are also being studied in order to optimize them as well.

### 2.4 Flight Plan

The maintenance of the actions taken in relation to the flight plan presentation (see previous Chapter) will be pursued as far as possible due to the gradual increase in demand. In addition, the lessons learned in the use of FPL by airlines and their impact on CGNA/ATC operations should be considered when resuming the application of the RPL, considering that the information from the FPL is more accurate than that from the RPL. An assessment of the maintenance of the use of FPL by users in the resumption of air traffic demand should be based on the impact for the airlines and the need to receive the flight intentions with reasonable advance for analyses at the ATFM strategic level.

### 2.5 Severe Weather Avoidance Plan

The Severe Weather Avoidance Plan (SWAP) is an initiative of the AGILE GRU Project and was implemented on an experimental basis for Guarulhos Airport on December 15, 2019. SWAP aims to guide actions at the strategic level, adopted at the tactical on the occasion of operational scenarios with severe weather conditions that imply the need to avoid a certain airspace, contributing to the maintenance of minimum levels of operational efficiency in SISCEAB.

Due to the characteristics of the climate in Brazil, in which the severe convective weather appears more frequently from September, the possibility of activating SWAP between May and September is remote. However, in view of the work program of the SWAP *Adhoc* Group of the AGILE GRU Project, coordinated by IATA, meetings have been held in order to identify opportunities for improvement and to revise the Plan actually in force to increase its efficiency in the high season (2020/2021).

Among the main opportunities for improvement identified, the improvement of the decision-making process must be mentioned, which involves the ATFM service, aeronautical meteorology, the airlines CCO and the SWAP Routes Playbook.

SWAP is expected to contribute to a reduction in the number of alternate flights, as well as a reduction in the number of holding patterns and as an experience for the plan to be expanded to other airports soon.

### 2.6 Reduced Minimum of Separation Between Aircraft Using the Same Runway (RRSM)

The implementation of Reduced Separation Minimum between Aircraft Using the same Runway (RRSM) will provide additional conditions for greater operational efficiency in landing and take-off operations, contributing to the reduction of the number of flights holding, reduction of the TAXI OUT time and increase of runway capacity.

Although the implementation of RRSM is already underway at Guarulhos and Viracopos Airports, as an initiative of the AGILE GRU and AGILE VCP Projects, the implementation at other airports is being motivated by CGNA due to its contribution to increase runway capacity.

### 2.7 Runway Occupancy Reduction Program and Optimization of Aircraft Separation

The Runway Occupancy Reduction Program and Optimization of Aircraft Separation program was an initiative of the AGILE GRU Project, having been implemented at Guarulhos Airport, with the updating

of information at Brazil AIP, using a specific campaign folder and a monitoring of operational performance indicators.

The implementation of the program provided an increase in efficiency, contributing to the application of the minimum separation of 3NM on final approach, increasing runway capacity, reducing number of holdings and reducing TAXI OUT time.

The experience at Guarulhos Airport contributed to the start of implementation at Campinas Airport, as an initiative of the AGILE VCP Project, in order to contribute to the application of the minimum separation of 5NM, with an interleaved take-off, or 3NM between successive approaches. such implementation in other airports is being fostered by CGNA due to its importance in the increase of runway capacity.

### 2.8 TMA-SP's New Airspace Concept (TMA-SP NEO)

The new airspace concept of the São Paulo TMA is an initiative of the TMA-SP NEO Project and aims to increase airspace capacity and reduce its complexity, absorbing future demand.

The implementation of the new airspace concept will provide a reduction in the number of flight holdings, due to the use of the Point Merge concept, and a reduction in TAXI OUT time at the main airports, due to the increase in capacity of the departure ATC sectors.

### 2.9 Runway Capacity

Recent developments in terms of runway capacity at major Brazilian airports are an initiative of the Airport Infrastructure Committee (CIA). Created in 2018 by DECEA, this Committee established targets for increasing runway capacity values for the main airports between S18 and W20 seasons. The approved values for each season are shown in the table 4.

**Table 4 – Increase in hourly runway capacity per season**

| Airport | S18 | W18 | S19 | W19 | S20 | W20 |
|---|---|---|---|---|---|---|
| SBGR | 52 | 55 | 55 | 57 | 57 | 57 |
| SBKP | 31 | 31 | 33 | 35 | 37 | 40 |
| SBBR | 53 | 64 | 68 | 72 | 76 | 80 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **SBGL** | **44** | **48** | **52** | **54** | **56** | **60** |
| **SBCF** | **31** | **31** | **31** | **35** | **35** | **37** |
| **SBCT** | **24** | **24** | **24** | **28** | **30** | **32** |
| **SBFL** | **15** | **15** | **17** | **25** | **25** | **25** |
| **SBPA** | **26** | **26** | **28** | **30** | **32** | **34** |
| **SBSV** | **28** | **28** | **30** | **30** | **34** | **36** |
| **SBRF** | **29** | **30** | **29** | **34** | **36** | **38** |
| **SBFZ** | **28** | **28** | **28** | **32** | **34** | **36** |
| **SBBE** | **20** | **20** | **20** | **24** | **26** | **28** |
| **SBEG** | **26** | **26** | **26** | **32** | **34** | **38** |
| **SBGO** | **26** | **26** | **26** | **32** | **34** | **38** |

**Values above the target of the Airport Infrastructure Committee (CIA)**

**Values below the target of the Airport Infrastructure Committee (CIA)**

Although this is a work that has already been completed, the real gain in terms of capacity for the W20 season (from 10/25/2020 to 03/27/2021) will certainly contribute to the recovery and sustainability of the air transport system as a whole. Although there are no bottlenecks in terms of hourly capacity at some airports, the values predicted for the W20 will contribute to a more efficient accommodation of flights in intervals of 15 and 5 minutes.

### 2.10 Vertical Sectorization

The vertical sectorization is an initiative of the GEPEA *Adhoc* Group ATC Capacity, coordinated by CGNA, and aims to increase the capacity of specific ATC sectors of enroute airspace, reducing the number of flight holdings in certain bottleneck areas and increasing the fluidity of airspace.

Phase 1 of vertical sectorization will be implemented in the Rio de Janeiro Region of Brasília ACC, constituting an essential tool for the optimization of some Preferential Routes, which have been used to avoid congested sectors of that ACC. It is also expected that the vertical sectorization will add to the new airspace concept of São Paulo TMA once it will increase SISCEAB's capacity to absorb greater demands in the future with adequate levels of efficiency and operational safety.

### 2.11 RNP APCH Procedures for visual runways

The implementation of RNP APCH procedures for visual runways will increase safety and efficiency in airports with limited infrastructure, favouring accessibility and national connectivity, mainly to regional aviation.

Safety will be improved by stabilized approaches to a point where the pilot can safely land, as well as the IMC trajectories established in accordance with best international practices will reduce the risk of "Controlled Flight into Terrain" (CFIT) and Loss of Control in Flight (LOC-I).

Operational efficiency can be increased through the application of a procedure that allows the aircraft to safely descend to lower altitudes, increasing accessibility and reducing the number of flights avoiding diversions and go arounds.

The implementation of RNP APCH procedures for visual runways may be based on the Regional Guide for the implementation of PBN procedures for visual runwys, approved in the 25th Meeting of the SAM Region Implementation Group and in the work already underway within the GEPEA.

### 2.12 Coordination with the SAM Region

The sharing of this Plan with the other States of the South American (SAM) Region, as well as the maintenance of close coordination between States, as the resumption of air operations advances in the region, will provide a harmonization of actions at a regional level, benefiting both users and ATC units involved.

Thus, during the resumption phase, the relationship with the International Civil Aviation Organization (ICAO) can be focused, mainly, on actions aimed at supporting an effective recovery from the current situation, which may include:

a) regional cooperation with the States of the CAR/SAM Region;
b) interregional cooperation with other ICAO Regions; and
c) centralization of information from the States of the CAR/SAM Region in a WEB environment, such as the NOTAM related to COVID-19, which were centralized and are being disseminated daily on the CARSAMMA website on the World Wide Web, through the link: http://portal.cgna.gov.br/carsamma.

## 3 PERFORMANCE MONITORING

This Chapter provides an overview of SISCEAB's performance, considering strategic analysis and post-operations. While the strategic analysis addresses the prognosis of demand and the capacity available for an specific period, the post-operations take into account the behavior of the system in view of the demand processed for the same period.

The demand preview is based on information provided by airlines and airports and it is complemented by the demand envisaged for general and military aviation prepared by CGNA, which will be based on recent historical data base. The analysis of the declared capacity for the current IATA season and the capacity practiced due to the infrastructure or staffing restrictions and events at airports and airspace.

**Table 5 – Performance Analysis**

| Products | Frequency | Deadline | Responsible |
|---|---|---|---|
| Capacity Plans | Monthly | up to the 25th | ACC/APP |
| Fuel Savings | Monthly | up to the 15th | Airline Operators |
| Demand Forecast for Regular and Cargo Air Transport | Weekly | D – 10 | Airport Operators |
| Airport Infrastructure Report | Weekly | D – 10 | Airport Operators |
| Availability of parking vacancies to handle alternate flights | Weekly | D – 10 | Airport and Airline Operators |
| Demand Forecast for General Aviation and Military Aviation | Weekly | D – 6 | CGNA |
| Strategic analysis for airports | Weekly | D – 4 | CGNA |
| Recommended Flight Inspection Schedule | Weekly | D – 4 | CGNA |
| Strategic analysis for airspace | Weekly | D – 4 | CGNA |
| Special Events | Weekly | D – 4 | CGNA |
| Conference | Weekly | D – 2 | CGNA |
| Beginning of the Analyzed Period | Weekly | D | -- |
| End of the Analyzed Period | Weekly | D + 6 | -- |

| | | | |
|---|---|---|---|
| Post-operations analysis for airports | Weekly | D + 10 | CGNA |
| Post-operations analysis for airspace | Weekly | D + 10 | CGNA |

The products defined in Table 5 will be made available in the CGNA Operational Portal, at RESOURCES tab.

### 3.1 Strategic Analysis

The strategic analysis for airports and airspace of interest aims to assist the administration of the service schedules of the ATC units and provide information to airports so that they are considered in the management of airport capacity. In the specific case of ATC Units, the initial focus of the analysis is an eventual reinforcement in the shifts. However, the information provided can contribute to the preparation of the regular schedule.

#### 3.1.1 ATC Sectors Performance - ACC and APP Level

The performance perspective in ATC sectors is based on the higher value of the expected air traffic demand and the planned/maximum openings of the ATC sectors. For each ATC unit, CGNA assesses whether the planned/maximum openings of ATC sectors are sufficient to meet the expected demand:

a) if the planned openings of ATC sectors are sufficient, there is no need to update the capacity plans;
b) if the planned openings of the ATC sectors are not sufficient, but the maximum openings of the ATC sectors are sufficient, the ATC units shall review the planned openings in terms of the maximum openings of the ATC sectors; and
c) if the maximum openings of ATC sectors are not sufficient, ATFM measures shall be implemented to mitigate the impact.

#### 3.1.2 Airport Performance

The performance perspective at the airports of interest is based on the higher value of the expected air traffic demand and the actual capacity values, considering the existing or planned restrictions for the period. In this analysis, CGNA takes into account:

a) the relation between the expected demand for landing and take-off operations at the airport of interest and the airport capacity available;
b) the main airport restrictions that may impact capacity; and
c) the possibilities of imbalances between capacity and demand at the airport, specifying the day and time, if applicable.

### 3.1.3 Bottlenecks and Capacity Optimization Actions

For each potential bottleneck identified in the strategic analysis, mitigation solutions are required and proposed to ATC units, airports or airspace users. In this sense, measures to optimize the airspace and airports capacity include:

a) opening of the ATC sector:
   - planned ATC sector openings
   - maximum ATC sector openings
b) capacity reductions in the ATC sector, if any, during the recovery;
c) availability of reinforcement to the operational team;
d) additional information (for example, availability of technical infrastructure, other restrictions to be highlighted, etc.); and
e) special events and implementations.

### 3.1.4 Special Events

Considering that the schedule of events and air operations is being reviewed by those in charge of it, it is necessary to monitor the planning of such events, in particular, due to the great possibility of a concentration of events to occur during the second half of 2020 and the first half of 2021 depending on the postponements.

Early notification, coordination and preparation of special events will be essential to ensure the least impact on air operations. CGNA will coordinate the preparation of these events, as well as the impact assessments and develop, if necessary, mitigation solutions, along with the interested parties.

## 3.2 Post-operations

Post-operation monitoring should compare the projected demand in the strategic analysis and the operation that actually took place, aiming to work with users to improve the mechanisms for updating

information within SIGMA, as well as consolidating the best practices and lessons learned throughout this process.


## Colaboration:

Associação Brasileira das Empresas Aéreas
Azul Linhas Aéreas Brasileiras
EMBRAER
GOL Linhas aéreas inteligentes
IATA
IPEV
LATAM AIRLINES
aena Brasil
ASeB
BH Airport Aeroporto Internacional de Belo Horizonte
coa Centro-Oeste Airports
GRU AIRPORT Aeroporto Internacional de São Paulo
Fraport
INFRAERO
INFRAMERICA
RIOgaleão aeroporto internacional tom jobim
VIRACOPOS Aeroportos Brasil
VINCI AIRPORTS
ANEAA Associação Nacional das Empresas Administradoras de Aeroportos
XNG