INTERNATIONAL CIVIL AVIATION ORGANIZATION

SOUTH AMERICAN REGIONAL OFFICE

Strategic Plan for the Support of Air Transport in the South American Region

SAM Plan 2020-2035

Lima, November 2017

Contents

Foreword

The IV Meeting of Directors of Air Navigation and Aviation Safety of the Civil Aviation Authorities of South America recommended to the Directors of Civil Aviation to propose a meeting of Ministers of Transport or authorities of the same level, with a view to adopting a commitment to guarantee the sustainable development of the air transport in the region in the next 15 years.

With this purpose, the Strategic Plan for the Sustainability of Air Transport in the South American Region has been elaborated, which is established by continuing the process initiated by the 13th Meeting of Civil Aviation Authorities of South America, held in Bogotá, Colombia, from 4 to 6 December 2013. This meeting approved the Declaration of Bogota, whereby the Directors of Civil Aviation committed themselves to reach 15 regional goals for 2016 related to the objectives of the global air navigation and aviation safety plans approved by the thirty-eighth Session of the ICAO Assembly.

The Bogotá Declaration had a scope until 2016 and served to initiate a results-based management process with clearly defined indicators. The region made very important progress and had clear guidance on ICAO priorities in line with global planning. After fulfilling its objective, the region is in a position to assume a new management commitment, at the highest level of public administration, to help prioritize initiatives that have a greatest impact on the safe and orderly development of air transport in South America.

Considering that air transport is a driving force for the economy and social development of States, this plan aims to ensure the sustained growth of civil aviation in the region, with emphasis on four main axes:

- ➢Aerial connectivity,
- ➢Aviation safety,
- ➢Institutional strengthening and
- ➢Environmental protection.

Recognition of the current situation of civil aviation in the region under each of these aspects, in relation to the provisions of the Chicago Convention and to the global air navigation, aviation safety and aviation security plans of ICAO, allows Identify the existing gaps and propose the implementation of applicable improvement actions.

The South American Region presents great opportunities to improve its aerial connectivity, both internally and with the rest of the world. Increased connectivity will bring air transport more closely to the population, producing a spiral of positive consequences in other activities, which generates greater social and economic development.

The objective of the plan is thus to ensure that all South American States can enjoy the benefits of air transport with greater connectivity, under optimum conditions of safety and security, with duly strengthened civil aviation authorities acting autonomously and independently, in harmony with nature and with environmental protection. It is sought to orientate the priorities to achieve greater access of the population to air transport, combining at the same time the

three dimensions of sustainable development: economic, social and environmental.

The results of the plan will favor the social and economic development of the South American States, involving the commitment of civil aviation authorities and industry in its implementation during the next 15 years, to ensure the sustained growth of air transport as a key instrument for that purpose, in consonance with the strategic objectives of ICAO and at the same time supporting the achievement of the United Nations sustainable development goals.

Conceptual framework

Forecasts foreseeing a doubling of air traffic in the South American region in the next 15 years, require to anticipate the emerging needs of such a growth with strategic actions to update and improve on four aspects of fundamental importance for the air transport industry: connectivity, safety, institutional strengthening and environment.

The continuous improvement of aviation safety and aviation security systems, as well as the harmonious modernization of air navigation, should progress in parallel, for which it is essential that they be adequately planned and implemented at regional and State levels in their respective ambit.

A. Connectivity

Air connectivity is the ability to link to different countries and cities quickly transporting passengers, cargo and mail from one place to another, through a properly planned and established network of air routes, allowing the agile operation of a competitive market: while the more liberalized and integrated the network is, the greater the long-term benefit of air connectivity for the population.

There is no single definition of the "connectivity" of air transport. For ICAO, connectivity is a feature of networks and can be defined in such a way as to be an indicator of network concentration. Therefore, connectivity is the ability of a network to transport a passenger from one point to another with the least amount of connections and without increasing the tariff, focusing, from the commercial perspective, on the minimum connection times with greater facilitation, which, ultimately, benefits the users of air transport.

This broad definition of air transport connectivity indicates that several factors allow for connectivity, from the availability of air transport services and airline practices to aviation security and facilitation procedures.

Article 22 of the Chicago Convention on *Facilitation of formalities*, provides that *Each contracting State agrees to adopt all practicable measures, through the issuance of special regulations or otherwise, to facilitate and expedite navigation by aircraft between the territories of contracting States, and to prevent unnecessary delays to aircraft, crews, passengers and cargo, especially in the administration of the laws relating to immigration, quarantine, customs and clearance.*

Air connectivity can be measured in terms of two network characteristics:

(i) Size and concentration:
The greater is the number of routes and frequencies, the greater the possibilities of connection for a State. However, the use of connecting capacity by passengers, cargo and mail will define the true degree of connectivity of a nation.

(ii) Fluency:
More direct routes with the fewest number of connections facilitate air traffic. Boarding and disembarking processes, controls and connection times at airports influence the quality of connectivity.

Factors that influence the increase of the air connectivity of a State are:

- Safety,
- Attractive and tourist potential,
- Business potential,
- Airport infrastructure,
- Geographic situation,
- Technological innovation,
- Business model of the airlines and
- Liberalization of regulation.

In order to optimize the air connectivity network in South America, a comprehensive coordination between States, airport concessionaires, aircraft operators and air navigation service providers is required to make decisions and execute plans that lead to an adequate operation of the network and take advantage of the possibilities of expansion, with the final objective of promoting the economic and social development of the 14 economies that make up the region.

States should cooperate in identifying the main obstacles to air transport connectivity and promote the adoption and implementation of measures to increase it.

B. Safety

Safety is the overriding concern of international civil aviation aimed at reducing the number of accidents and serious incidents around the world. Safety management systems and programs are an important contribution to ensuring aviation safety in international civil aviation.

The causes of major aviation accidents and incidents should be investigated to prevent recurrence. The determination of the causes is carried out better if the investigation is adequate.

The continuous improvement of global aviation safety is fundamental to ensuring that air transport continues to play an important role in promoting sustainable economic and social development around the world.

With forecasts predicting a doubling of air traffic over the next 15 years, it becomes imperative to anticipate current and emerging safety risks and to carefully manage such significant capacity growth with strategic regulatory and infrastructure actions. It is therefore imperative that States and the region continue to focus on establishing, updating and addressing their safety priorities in their efforts to promote the development of their air transport sectors.

In order for continuous improvement of safety and harmonized modernization of air navigation to proceed at the same time, regional and State planning for aviation safety is essential. This also facilitates the safe and sustained growth, increased efficiency and responsible environmental management that the societies and economies of all countries expect and claim from government aeronautical agencies and industry.

The continuous monitoring approach (CMA) of the ICAO universal safety oversight audit program (USOAP) provides up-to-date information on the effective implementation of the eight critical elements (CE) of a State's safety oversight system. They are:

CE-1 Primary aviation legislation;

CE-2 Specific operating regulations;

CE-3 State civil aviation system and safety oversight functions;

CE-4 Technical personnel qualification and training;

CE-5 Technical guidance, tools and the provision of safety-critical information;

CE-6 Licensing, certification, authorization and approval obligations;

CE-7 Surveillance obligations; and

CE-8 The resolution of safety concerns.

The USOAP CMA looks at whether States develop, maintain and apply the national elements in accordance with SARPs. This includes, for each State, the regulatory and supervisory framework, safety procedures and systems, as well as technical personnel whose work ensures that the operations and related activities of civil aviation are operationally safe and orderly. By analyzing USOAP data, the CMA is an instrument for observing the level of effective implementation (EI) of the EC of a safety oversight system that is needed for States to achieve the objectives of the Comprehensive Plan for aviation safety (GASP).

C. Institutional strengthening

The management of civil aviation in the South American region, as it has happened in other parts of the world, has been associated from the beginning with military aviation. With the sustained growth of air transport, the civil aviation administration has been systematically changing its military links to become independent and autonomous. This change is generally associated with the level of development of countries.

It is frequent in some regions that military dependency often remains due to scarce resources, making sense that due to the size of the industry and the limitations of fiscal coffers, the infrastructure and human resources of military aviation are shared with the requirements of civil aviation.

However, during the last decades the growth of air transport has increased considerably and civil aviation has had to modernize and transform its regulatory and functional framework, due to the technological advances of industry and the social events that influence it at global level.

The changes have originated a rapid evolution in management systems, resulting in a transition from the military to the civilian sector in several countries, in association with the standards and recommended practices prescribed in the Annexes to the Convention on International Civil Aviation.

The States of the South American Region are signatories to the said Convention, signed in Chicago on December 7, 1944 (Chicago Convention), and are Contracting States of the

International Civil Aviation Organization (ICAO), which is responsible for implementing the provisions of the Convention.

In adopting the provisions of the Convention relating to national authorities, each State has provided in its legal system for the designation of a civil aviation authority entrusted with its responsibilities the regulator, controller and inspector of civil aviation activities in its jurisdiction. The law creates other entities independent of the civil aviation authority, whether state or non-state, to be responsible for the provision of airport facilities and services, air navigation services, aviation security or accidents and incidents investigation, among other functions.

D. Environment

Protecting the environment has become one of the greatest challenges for civil aviation in the 21st century. Since its adoption, Annex 16 containing international standards and recommended practices on the matter has been modified to address new environmental concerns and to accommodate new technology.

Operational changes that are expected to result in significant or long-term impacts may be subject to a formal environmental impact assessment. If the proposed change is likely to change the mode, location, timing, or quantity of aircraft passing through the airspace or the airport surface, then an environmental impact assessment may be required.

The level of environmental impact assessment to address these operational changes will depend on the magnitude of the change and can range from simple qualitative assessments to quantitative and deep assessments of environmental impacts.

The most common environmental impacts resulting from operational changes are related to noise, air quality, fuel consumption and greenhouse gas emissions, although there may also be other effects that need to be assessed under state or local regulations.

Characteristics of the region

The South American Region is made up of 13 States and one territory: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, French Guiana (French territory), Guyana, Panama, Paraguay, Peru, Suriname, Uruguay and Venezuela. These countries together make up 40.5% of the total surface area of the American continent and 13.5% of the world's territory. Its population reaches 420 million inhabitants (5.7% of the world total). More than half are concentrated in Brazil, with 204 million inhabitants (49%), followed by Colombia with 48 million (12%) and Argentina with 43 million (10%). In terms of GDP, 93% is concentrated in 6 of the 14 countries (Brazil, Argentina, Colombia, Venezuela, Chile and Peru). Brazil, on its own, represents 48%.

South America is one of the most diverse regions of the world in social, cultural and economic terms. It has a great geographical variety with all kinds of climates and altitudes. It is mainly composed of raw materials exporting economies and it retains a total of 81 properties recognized as world heritage by UNESCO. According to World Bank figures, in the last 20 years the number of passengers transported in the region has grown 3.5 times, with an annual average of 7.9%.

Institutional framework

The civil aviation community is composed of four main groups: States, aircraft operators, airport operators and air transport users whose interests overlap with often different priorities:

- States are primarily concerned with full compliance with laws and regulations relating to aviation safety and the facilitation of air transport, and are concerned at the same time with economic and financial measures in this area.

- Aircraft operators are primarily interested in increasing productivity, minimizing the costs of administrative processes and operational delays.

- Airport operators are interested in reducing congestion at passenger terminals.

- Airline users expect a quality, fluid and economically accessible service to operate at airports, whether in transit or at arrival, and that the delay and difficulties are minimal.

The common interest of the four groups is to improve the connectivity of air transport. For States, this means meeting the interests of the population, particularly through the development of tourism, business and air cargo. For airport and aircraft operators, it translates into increased business opportunities and for air transport users, it means effortless, time-consuming and timesaving travel.

The State's air transport authorities are the main element of the institutional component of the national regulatory structure. National aeronautical or civil aviation authorities are the governmental entities directly responsible for the regulation of all aspects of air transport, whether of a technical nature, such as air navigation and aviation safety, or economic issues, such as the commercial aspects of air transport.

Civil aviation authorities involved in the development and management of this plan are:

Argentina, National Civil Aviation Administration (ANAC)
Bolivia, Directorate General of Civil Aeronautics (DGAC)
Brazil, National Civil Aviation Agency (ANAC)
Chile, Directorate General of Civil Aeronautics (DGAC)
Colombia, Special Administrative Unit of Civil Aeronautics (UAEAC)
Ecuador, Directorate General of Civil Aviation (DGAC)
French Guiana, Antilles-Guiana Civil Aviation Safety Directorate (DSAC-AG)
Guyana, Civil Aviation Authority (AAC)
Panama, Civil Aeronautics Authority (AAC)
Paraguay, National Directorate of Civil Aeronautics (DINAC)
Peru, Directorate General of Civil Aeronautics (DGAC)
Suriname, Civil Aviation Safety Authority of Suriname (CASAS)
Uruguay, National Directorate of Civil Aviation and Aeronautical Infrastructure (DINACIA)
Venezuela, National Institute of Civil Aeronautics (INAC).

Current situation

A. Connectivity

In terms of level and quality of air connectivity, the SAM Region shows the following characteristics

- Brazil is the most connected country in terms of number of airports, operating airlines and number of direct routes, representing almost half of the region's air traffic.
- Regional airport density, measured as total airports per million inhabitants, is less than one in 9 of the 14 States.
- The region shows a medium level compared to other regions of the world, in terms of number of flights and passengers transported in relation to population size and GDP.
- The level of air cargo transported relative to the regional GDP is one of the smallest in the world.
- The region is relatively well connected with the rest of America and some European countries, but has very few routes with Asia/Pacific, Africa and the Middle East. Brazil is the only country connected with these three regions. With the exception of Argentina, Chile, Peru and Panama, the other States only connect with America and Europe.
- There is little presence of aircraft operators from the Asia/Pacific, Africa and Middle East regions.
- At regional level, South American States are not yet fully interconnected. Passengers from smaller States do not have direct routes to the more connected and are forced to leave the region to travel to destinations within the region through indirect routes.

In order to achieve greater and more efficient air connectivity in the South American Region, the following aspects that require improvement actions have been identified:

1. International traffic rights

Bilateral or multilateral agreements in the SAM Region are limited in nature, with very few exceptions of open skies in some States. A majority group of agreements still maintains the Bermuda model established as a standard more than 50 years ago, which does not take into account the changes and the current dynamics of relations between countries and the importance of facilitating the globalization process.

2. Immigration control policies (visas)

Some States in the region do not require visas with the countries of the European Union and are in process of similar exemption with the United States and Canada. In regional terms, a large number of States are exempt from visas, but 100% openness has not yet been completed. Flexibility of immigration control policies is a frequent practice that is progressing more and more globally in favor of greater connectivity.

3. Foreign investment in domestic airlines

Limitations on capital, operating capacity and/or management of local, private or State airlines can be counteracted and strengthened by partnering with successful airlines wishing to invest in a particular country. The experience gained by already established airlines within and outside the region can play a key role for adequate investment, development and sustainability of aviation in each State. A regulatory opening to these intentions would facilitate the development of air connectivity for the benefit of the population.

4. Capacity constraints at airports and air navigation services

Several airports in the region experience capacity constraints on the land and airsides of their terminals. In order for airports to withstand the doubling of traffic by 2035, infrastructure capacity will need to be increased so that it can efficiently sustain the expected increase in the flow of flights, passengers and cargo.

5. Fluency in passenger and cargo traffic

Airport processes giving fluency to passenger and cargo traffic will need to be modernized and streamlined as the increase occurs. There are several types of technologies worldwide that have been applied in the most important airports to simplify and automate the processes of check-in, security, customs, boarding, disembarking and baggage delivery, among others. The improvements implemented will promote greater air traffic flow, benefiting connectivity and reducing operating costs with the elimination of deficiencies and congestions that cause additional costs to airlines and passengers.

6. Security control for passengers in transit

According to the current scheme applied in the SAM Region, passengers in transit are checked for safety at the point of origin and again at each airport within the region where they make connections, until reaching their final destination. ICAO and the "Aviation Safety and Facilitation Group" have recommended the implementation of a single security control for transit passengers, to the benefit of greater traffic flow and the potential of hub airports. To make the change it is required the formalization of bilateral agreements between States.

7. Taxes on air transport

The application of taxes or fees to air transport are measures that generate costs on aircraft operators and users. The tax on international air tickets is considered an anti-technical practice, since most of the service is performed outside the territory of the country that imposes it, greatly increasing the value of tickets. The over flights tax also discourages aircraft operators from flying over certain territories to the detriment of a more efficient route structure. At present, very few countries apply this practice, which within the SAM Region is still maintained in two States.

8. Operational rates applied by airports to aircraft operators

The application of airport charges to aircraft operators for take-off, landing, parking, fuel handling, cargo transportation, etc., increases operating costs, which are transferred to air tickets. A high level of fees discourages the operation of airlines at certain airports, to the

detriment of the State where they are located, which is why it is important for governments to regulate the level of tariffs so that it is optimal for their territory.

9. Network of direct air routes to achieve a higher level of connectivity

Currently, not all 14 SAM States are connected through direct air routes, with or without stopovers, within the region.

10. Destinations in countries with great growth potential outside the region

There are regions and countries that are not directly connected with the SAM Region, among which are some emerging markets that lead the world economic momentum. The SAM Region needs to increase its connectivity with regions such as Asia and the Pacific, the Middle East, Africa and Oceania, especially for air cargo.

11. Travelers from remote countries with little presence in the region

Travelers from distant markets with cultures and languages that are very different from those of the SAM Region must take indirect and expensive routes to reach some South American country of their interest. High costs and language barriers can be a major disincentive to the travel decision. In many cases, it only merits to invest in tourism trips if more than one country is visited.

12. Regional and domestic hub airports

Concentrating airports for international and / or domestic connections must meet certain conditions of positioning and efficiency, privileging them as best points of connection and access to other cities if they have an adequate infrastructure and transit processes agile and expeditious, characteristics that mean an advantage for passengers and airlines by choosing them as hubs.

13. Flights and routes at affordable prices for a larger proportion of the population

The entry of low-cost airlines into the region is still limited and its increase can benefit significantly the domestic and international market of each State on short-haul and very busy routes.

14. Traffic development in low connectivity cities with secondary airports

Cities with secondary airports are key to the redistribution of traffic within each State, to increase connectivity and make them accessible to a larger proportion of the population. Low-cost airlines have the opportunity to promote the use of secondary airports, which offer competitive operating costs to drive new routes and improve a State's domestic connectivity.

15. Regulatory framework conducive to the entry and operation of new airlines

The airlines decide to operate in other States after an exhaustive analysis of the potential traffic demand and the operating costs involved. It is common to establish alliances, agreements or other arrangements to operate flights together and share costs (code-sharing) in order to

independently access unviable routes. Airlines, especially those from distant regions, prefer to make an initial approach to a State of their interest through representative offices, which sell their tickets for indirect routes to that destination, joining other established airlines when they do not yet count with permission to operate. In this way they can obtain samples and information of the level of potential demand that they could access, deciding in a second stage their direct operation if the regulatory framework is conducive to them.

B. Safety

The SAM Region Safety Plan (SAMSP), prepared by the ICAO South American Regional Office on behalf of accredited States and international organizations involved, considers the implementation of safety management in three main priorities: improving effective implementation (EI) within the framework of the ICAO universal safety oversight audit program (USOAP); the implementation of the State Safety Program (SSP) and the reduction of accident rates in the high risk categories identified in the South American Region (SAM).

In this context, the plan presents an analysis of the situation of the SAM Region by 2017, in terms of its safety performance in the following areas:

- ✓ USOAP continuous monitoring approach (CMA);
- ✓ Accidents in regular commercial air transport with airplanes over 5 700 kg;
- ✓ Accidents by runway excursions (RE) in regular commercial air transport with airplanes over 5 700 kg;
- ✓ Accidents by runway excursions that occurred in the SAM Region in 2016 in all operating segments and with all-weight aircraft;
- ✓ Implementation of the SSP; and
- ✓ Goals reached with regard to the Declaration of Bogotá.

USOAP continuous monitoring approach (CMA)

The USOAP CMA activities in the SAM Region started in 2011. Up to November 2017, 4 CMA audits, 14 ICAO coordinated validation missions (ICVM), 4 ex situ observation activities and one (01) integrated validation activity (IVA) have been carried out. The overall average increase in the 7-year analysis period (November 2011 - November 2017) is + 12.28, which indicates that the SAM Region improved its effective implementation (EI) by an average annual percentage of 1.75%.

The current average of effective implementation of the critical elements (CE) of a safety oversight system in the SAM Region is 78.56%.

Results of CMA/USOAP activities in the SAM Region

(Period November 2011 - November 2017)

States	Last CSA audit	CMA audit	ICVM	IVA	Validation activity ex situ	Total improvement achieved	% of EI Current / *Preliminary (**)
01. Argentina	2008: 77.5		2013: **86.30** (+8.8)			+ 8.66	**86.16**
02. Bolivia	2008: 72.26	2013: 67.73 (-4.53)	2016: **86.22** (+18.49)			+ 13.63	**85.89**
03. Brazil	2009: 85.75		2015: **95.07** (+7.47)		2015: 87.60 (+1.85)	+ 9.21	**94.96**
04. Chile	2008: 84.29		2017: **94.11** (+9.82)			+ 9.68	**93.97**
05. Colombia	2007: 63	2017: **74.94** (-3.29)	2011: **78.23** (+15.23)			+ 11.38	**74.38**
06. Ecuador	2009: 55.40		2012: 67.80 (+12.40) 2015: **89.32** (+21.20)		2014: 68.12 (00.32) (report not available)	+ 34.19	**89.59**
07. Guyana	2007: 44.21		2016: **64.40** (+20.19)			+ 20.3	**64.51**
08. Panama	2005: 85.79	2015: **36.58** (-49.21)				- 22.89	***62.9**
09. Paraguay	2009: 51.04		2016: **71.82** (+18.19)		2016: 53.63 (+2.59)	+ 19.8	**70.84**
10. Peru	2007: 68.22	2014: **74.34** (+6.12)				+ 6.05	**74.27**
11. Suriname	2009: 50.7		2012: **58.41** (7.71)			+ 8.89	**59.59**
12. Uruguay	2008: 41.49		2014: **57.88** (+16.39) 2016: **71.45** (+13.57)	2017: **71.37**	2014 (report not available)	+ 29.88	**71.37**
13. Venezuela	2009: 82.1		2013: **93.13** (11.03)			+ 10.83	**92.93**
Averages	**66.28**	**- 12.72 per CMA**	**16.40 per ICVM**		**1.58 per activity**	**+ 12.28 (1.75)**	**78.56**

* The table above includes the result of the preliminary result of the audit of Panama.
** These values correspond to the result of the revision made to the Protocol Questions in 2016.

The performance of the SAM Region during the USOAP CMA demonstrated that the critical elements (EC) 8, 7, and 4 and the AIG, ANS and AGA audit areas are those with the lowest effective implementation rate. Therefore, these EC and audit areas should be given priority in the planning of corrective actions which States should include in their national safety plans to resolve the deficiencies that they detect.

The improvement of effective implementation (EI) in the eight critical elements (CE) of a safety oversight system and in the eight audit areas is a barrier against latent safety hazards. Due to this it is necessary to initiate planning to gradually and sustainably improve the EI of each of the States and of the SAM Region.

Accidents in regular commercial air transport with airplanes over 5 700 kg

According to information presented by the ICAO Integrated Safety Trend Analysis and Reporting System in the iSTARS-3 application, the accident rate in South America for regular commercial air transport operations with aircraft of more than 5 700 kg has been decreasing progressively from 2009 to 2015, a year in which a rate of 1.03 accidents was reached per million (1,000,000) of departures. This was the first time that the accident rate in the SAM Region declined below the global accident rate of 2.78 in 2015. Despite this, in 2016 the SAM Region experienced a considerable increase in events, by which the accident rate increased from 1.03 in 2015 to 3.74 in 2016. However, in 2017 this rate remained for the third consecutive year below the world rate of 2017 of 1.56.

Accidents by runway excursions (RE) in regular commercial air transport with airplanes over 5 700 kg

Based on the information presented in ICAO's iSTARS-3 application, the runway excursions accident rate (RE) shows a gradual decrease in the 2007-2016 period, except in 2011 and 2013, when there is an increase. However, in 2016 the rate increased from 0.51 to 1.05, keeping the same in 2017. From this analysis it can be noted that runway excursions accidents remain one of the highest risk categories in the SAM Region, so States should implement appropriate mitigation measures to reduce accident rates in this category.

Accidents by runway excursions that occurred in the SAM Region in 2016 in all operating segments and with all-weight aircraft

In order to analyze the increase of accidents by RE in the SAM Region during 2016, the AIG Regional Cooperation Mechanism (ARCM) of South America carried out a study in this category of accidents, using information from its safety data collection and processing system (SDCPS).

During 2016 occurred 74 accidents by runway excursion in the States of South America, excluding Suriname and Uruguay due to unavailability of information of these States. Of the total number of accidents, 53 occurred with airplanes of 2 250 kg or less.

In the analysis of events classified as accidents, serious incidents and incidents, it was evidenced that the highest number of notifications corresponds to accidents. As for the type of operation, the largest number of events corresponds to general aviation, while by aircraft weight, the highest number of events is in the range of 1 to 2 250 kg. Therefore, the areas of greatest concern and care for the SAM Region should be general aviation, minor commercial aviation and aircraft of 1 to 2 250 kg. Another aspect that is evident is the lack of notification of incidents that should be higher than the number of notifications of serious incidents or accidents.

Considering the flight phase in which the RE occurred, it is observed in the analysis that the greatest number of events corresponds to the landing phase and that most of them occurred on the side of the runways (Veer-off).

According to the study, the main contributing factors presented in the runway excursions were meteorology (MET), infrastructure (INFRA), technical (TEC) and human factors (FFHH), the latter contributing most to RE accidents.

As for the distribution of damages to people and equipment, there were one fatality and forty-two (42) cases of importance in damages associated with the aircraft.

Based on the study, the working group reached the following conclusions:

a) The following general factors contributed to the observed events: human factors, within which it was incorporated to all those that are linked and affect the correct actions of the crews; technical factors, incorporating all the mechanical failures that condition the defensive technological barriers available in the aircraft; meteorological factors, which condition the environment of the situation in which the RE occurs; and infrastructure factors, which are directly contributory to the cause of RE or condition the severity of the damage produced in the RE.

b) In study cases where the RE occurred in the landing phase, it could be identified as repetitive or recurrent the pilot's lack of identification that he was in a non-stabilized approach, and that could have taken the decision to proceed with a failed approach. Noting that this situation was reached due to lack of experience, lack of instruction or an inadequate management of CRM, possibly due to shortcomings in these concepts.

c) In cases in which a technical fault intervenes as a trigger of the situation, this is presented as a conditioning factor in the pilot's actions and behavior.

d) The same concept for the study cases in which the meteorology has previously affected the surface of the runway or is present at the time of the event, adversely affecting the landing conditions, leading in both cases to that the crew in command cannot maneuver for the normal application of landing procedures.

To solve the problems detected, the working group proposed the following mitigation actions:

a) Generate appropriate instruction and training actions during the initial or periodic instruction stage, allowing the crews to identify and act on the variables that make

up the triggers of an RE. To emphasize that in the instruction the particular analyzes of the places where the flights are realized, the types of aircraft and their type of engine component are taken into account.

b) For a good planning of the instruction and training it is necessary to know and weigh the variables that make up the factors involved in an RE, as well as to evaluate the preparedness of the crews to identify and manage it properly.

c) Based on these concepts, it is recommended to require the implementation of the safety management system (SMS) to the operators of air services, with which it will be possible to generate the guidelines that orient the objectives and competences that the crews must reach.

Implementation of the SSP

In 2013, the ICAO South American Regional Office established the Annual Meeting of Coordinators of the State Safety Program (SSP), whose fifth meeting, held in Lima, Peru, from November 7 to 11, 2016, analyzed the level implementation of the SSP in the SAM States.

At this meeting some States showed more progress than others, so it was agreed to look for a mechanism so that all could advance at the same time. In this regard, Bolivia, Chile, Colombia, Ecuador, Panama, Peru and Venezuela expressed their intention to participate in a pilot project for the implementation of the SSP until the end of 2018, whose objective is to develop legislation, regulations, guidance material, processes, mechanisms and model systems related to safety management to support SAM States in the implementation of the SSP over a two-year period. The project was launched on March 16, 2017 with the seven States listed above. Subsequently Guyana requested its entry, being eight the States of the region participating in the project.

In order to comply with the first strategic objective of this plan and in line with the provisions of Annex 19, the ICAO South American Regional Office will consult the other States of the region (Argentina, Brazil, Paraguay, Suriname and Uruguay) on the presentation of its plans to implement the SSP until December 2020. However, it should be taken into consideration that the second edition of Annex 19 will be applicable as of November 7, 2019.

It is anticipated that SSP implementation will allow managing risks and mitigating safety dangers in an appropriate manner resulting in safer, more efficient and more sustainable operations.

Goals reached with regard to the Declaration of Bogota

The Civil Aviation Authorities of South America, at its Thirteenth Meeting (RAAC/13), held in Bogota, Colombia, from December 4 to 6, 2013, declared their commitment to achieve, among others, the following goals of the safety areas for 2016, with the following results analyzed for each of them:

a) **Safety oversight.** The goal was to achieve 80% effective implementation (EI) in the SAM Region until December 2016.

The current average EI of the SAM Region is 78.56%. This percentage already includes the result of the ICVM of Panama. As indicated, this goal was not reached in 2016.

b) **Accidents.** The goal was to reduce the gap of the accidents rate in the SAM Region by 50% in relation to the global accidents rate.

The rate of accidents in South America for regular commercial air transport operations with aircraft of more than 5 700 kg has been declining progressively from 2009 to 2015. However, in 2016 the rate increased to 2.71 but remained below the rate world ranking of 3.74. Based on this performance, the target set until December 2016 in the Declaration of Bogotá was exceeded in 2014 and for the first time the 2015 rates of 1.03, and 2016 of 2.71 were lower than the global average rates of 2.78 in 2015 and 3.74 in 2016.

c) **Accidents by runway excursions.** The goal was to reduce the rate of runway excursions by 20% in relation to the average rate of the SAM Region between 2007 and 2012, which were 2.24 accidents per one million departures.

The 20% reduction as a compromised goal according to the Declaration of Bogota was 1.8 accidents per one million departures. As of 2012, the indicator remained below the regional average so that the goal of the Declaration of Bogota was met in this category of accidents until November 2017.

d) **Certification of aerodromes.** The goal was to reach 20% of certified aerodromes.

Up to December 2016, 24% of certified international aerodromes were reached, thus exceeding the established goal.

e) **Implementation of the SSP and oversight capacity of the SMS of service providers.** The compromised targets were 76% in the implementation of the SSP and 100% in the oversight capacity of the SMS of service providers.

The Fifth SSP implementation meeting, held in Lima, Peru, from November 7 to 11, 2016, after qualitatively evaluating the progress of the SSP, agreed to begin its implementation from the first element of the first phase, therefore the agreed targets were not reached until December 2016.

C. Institutional strength

A study undertaken at the end of 2016, in order to determine the level of independence and institutional strength of the civil aviation authorities and aviation accident investigation authorities of the South American Region, was based on the analysis of available public information on the legal bases that support its establishment and performance, finding a series of differences and disparities with respect to five dimensions: the status of the agency head, the status of the members of the management board, the relationship with government and parliament, financial and organizational autonomy, and regulatory competencies.

The results of the study, related to each of said dimensions, denote the following.

a. Status of the agency head

The score obtained in this dimension is low for most States for different reasons. The main factor affecting the independence of the authority is the procedure for appointing its director: in no State is the appointment prerogative of the management board or similar collegiate body, when it exists; In 9 States the appointment comes from the government at the highest level; In 3 States the appointment is made by a complex mix of the parliament and the government; In 2 other States the minister of the sector is in charge of the appointment. The low score levels derived from this situation are also due to the lack of specific provisions regarding the appointment of the director as for the term of office, renewal, dismissal and independence of the candidate.

b. Status of the members of the management board

The factor that affects the levels of independence of the authorities in 8 States is the lack of a management board or similar collegiate body. In the other 6 States there is a collegiate body in the organizational structure of the civil aviation authority with different conformations: in two States it is composed of representatives of different ministries, who are appointed by the respective ministers; in 4 States has a composition related to the aeronautical authority, in which the appointment of its members is granted by a complex mix of the parliament and the government in one State, by the President of the Republic in another one and by the minister of the sector In the remaining two. The lack of specific provisions regarding the status of the members of the collegiate body also affects the low score in the terms of appointment.

c. Relationship with government and parliament

The level of the scores reached in this dimension is high and homogeneous. The differences are due to the fact that in 4 States the independence of the civil aviation authority has not been formally stated; in 8 States the authorities meet obligations required by the government; in one State the agency is fully accountable to the government; in 4 States the authorities have obligations required before the parliament, and in one State it is established that another level of the administration of the sector can overturn the decisions of the civil aviation authority where it has exclusive competence.

d. Financial and organizational autonomy

The independence index of civil aviation authorities in terms of financial and organizational autonomy is at an average level because only in 3 States the source of the budget comes exclusively from the fees levied on the regulated industry. In the other States both, the government and the fees levied on the regulated industry, finance the budget. Only in 3 States does the authority control its budget, in another State it is controlled by the government accounting office, and in the other States both the authority and the government exercise the control. In 12 States the authority decides on its internal organization and in the other 2 this power is shared with the government. In 11 States the authority is in charge of its personnel policy, in another 2 it is in charge of both the authority and the government, and in one State it is in charge of the government.

e. Regulatory competencies

All civil aviation authorities of the South American Region have competence to regulate in civil

aviation in their respective States. The DSAC of French Guiana is only competent to apply the rules promulgated by the central authority of its State, the French DGAC.

The civil aviation authorities of 9 States retain functions of service providers and/or aircraft accident investigation, which should be exercised by other independent bodies, existing or to be created, to avoid the role of judge and party in the exercise of activities that, by virtue of their competences, must control, monitor and supervise in accordance with the rules and regulations whose application and observance they should oversight.

D. Environment

Regarding the impact of aviation activity on the environment, the current situation in the South American Region is as follows:

- With regard to aircraft noise in the vicinity of airports, 9 of the 14 States in the region have issued national regulations or have adopted the regulations of another State on the application of noise standards.

- Concerning aircraft engine emissions, 9 of the 14 States in the region have issued national regulations or adopted another State regulation on fuel drainage and exhaust emissions from turbine engine aircraft.

- Regarding procedures for the treatment of environmental aspects of aviation, 6 of the 14 States in the region have adopted a related environmental policy.

- In compliance with Resolution A37-19 and ratified by Resolutions A38-18 and A39-2 of the ICAO Assembly on the reduction of CO2 emissions in civil aviation activities, 6 of the 14 States of the region have voluntarily submitted to ICAO an action plan with a description of the respective policies and measures to be implemented.

- On the implementation of the Market Based Measures Plan (MBM), established by ICAO Assembly Resolution A39-3 in the form of a Carbon offsetting and reduction scheme for international aviation (CORSIA), no State of the region has still adhered to the first phase of this plan.

However, the following aspects require the adoption of appropriate actions by the States concerned to achieve the greatest possible compatibility between the safe and orderly development of civil aviation and the quality of the environment in the South American Region:

1. ICAO and its Member States are aware of the impact of civil aviation on the environment, the impact of which is reflected in aircraft noise, engine emissions, air quality disturbances, undue use of terrain in the vicinity of airports, as well as in the treatment of waste from aircraft, aspects that civil aviation authorities should take into account when designing and implementing their environmental policies.

2. The States of the SAM Region should have a thorough knowledge of the effects of civil aviation on the environment, for which they need to develop uniform criteria with the most concrete and reliable information on the matter.

3. It is imperative that civil aviation authorities address environment-related aviation issues by maintaining the initiative to develop policies in this area without deriving this task to other sectors. It is very important that the authorities have an environmental policy for air transport.

4. Civil aviation authorities should have a thorough understanding of the impacts of aviation on the environment, which would require studies and research that are generally not considered in their budgets. It would therefore be important for civil aviation authorities to establish strategic cooperation links with other national institutions or international agencies to advance the knowledge of the environmental impacts of aviation and to define appropriate criteria for addressing them.

5. The Global Air Navigation Plan (GANP) has predicted sustained growth in air transport at the global level. For the SAM Region, it is vitally important that this growth be accompanied by measures that ensure its compatibility with the quality of the environment and develop in a way that mitigates the negative effects.

6. The States of the Region have understood that the adverse effects of civil aviation on the environment can be reduced through the implementation of comprehensive measures including technological developments, air traffic management procedures and more efficient operations, the use of clean, renewable and sustainable energy sources, proper planning and use of land, the use of airport planning mechanisms, market-based measures, and so on.

7. In relation to clean, renewable and sustainable energy sources, it is important that civil aviation authorities, in cooperation with other State institutions, promote or generate cooperation programs for the production and use of alternative fuels. In addition, civil aviation authorities need to coordinate with the aerodrome operators the use of clean energy sources to promote the concept of increasingly green airports.

Vision of sustainable development of civil aviation by 2035

The vision of the situation of civil aviation and air transport in the South American region by 2035 is summarized as follows:

A. Connectivity

A region that provides greater access to the benefits of air transport is contemplated, through a greater level of connectivity between the peoples of the South American region and with the rest of the world, thus fostering greater commercial, social and cultural exchange. The infrastructure needed to support the demand with the required fluidity will be planned well in advance and in a collaborative environment that allows understanding the expansion plans at both the State and industry levels. Airport master plans will have 40-year horizons with periodic revisions to adjust to changes in demand.

B. Safety

It is contemplated a region that is a leader in the global context in terms of air safety, in strict compliance with international civil aviation standards, in a harmonized regulatory environment that allows economies of scale to be used to provide an effective and efficient level of surveillance to service providers by the civil aviation authorities, without creating unnecessary costs to States and the industry, building an enabling environment for the development of the air transport business.

The rapid development of technology will be used to ensure adequate information protection so that States and industry share vital information on safety to be processed in real time, either by human elements or by algorithms, so that allow the identification of hazards and their mitigation before they are manifested as an accident or an incident.

C. Institutional strengthening

It is contemplated that State entities entrusted with ensuring the safe, orderly and sustainable development of air transport be strong and independent institutions, duly funded in a way that can guarantee the recruitment, retention and professional development of the human talent required in the exercise of its mandate, to achieve an effective and efficient oversight of both safety and economic aspects of air navigation and airport services providers by ensuring the application of fees in accordance with the principles of the Convention on International Civil Aviation, with a wide use of e-government mechanisms and constant search for the most efficient forms of management.

D. Environment

It is contemplated an environmentally friendly aviation that coexists in harmony with nature and protect wild flora and fauna and other species of living beings. The

aeronautical activity must be developed in harmony with the environment to ensure the sustainability of the airline industry. A greener aviation will ensure that the preservation of nature makes it possible to continue developing and achieving greater progress in this field. The aviation activity, which is the driving force of the economy in several States, must take the lead in protecting the environment by implementing legislative measures relating to engine technology and fleet renewal, operational improvements, infrastructure improvements, green airports and compliance with the ICAO targets for carbon dioxide reduction.

The medium in which aviation operates is the air, an integral part of the environment, where the consequences of the deterioration of nature due to the activity of man are also manifested with greater force, causing atmospheric events to become more extreme and generate problems safety and inconvenience to air operations. Working in harmony with nature will reduce the intensity and severity of these phenomena, which will result in a greater efficiency of aerial operations, with reduction of noise, that are not disturbing the inhabitants that perform tasks or live in places near the aerodromes, and do not affect biodiversity.

In the South American Region, an operationally efficient and environmentally friendly aviation should be achieved.

Development objectives

In its ongoing mission to support and facilitate a global air transport network that meets or exceeds social and economic development needs and wider connectivity worldwide, ICAO has established five overall strategic objectives that will contribute to the achievement of several Sustainable Development Goals of the United Nations, in which civil aviation and air transport can play an important role:

1. Safety:
   Enhance global civil aviation safety.

2. Air navigation capacity and efficiency:
   Increase the capacity and improve the efficiency of the global civil aviation system.

3. Security and facilitation:
   Enhance global civil aviation security and facilitation.

4. Economic development of air transport:
   Foster the development of a sound and economically viable civil aviation system.

5. Environmental protection:
   Minimize the adverse environmental effects of civil aviation activities.

United Nations Sustainable Development Goals

to whose achievement can contribute air transport with better connectivity

Objective 1. End poverty in all its forms everywhere

Objective 3. Ensure healthy lives and promote well-being for all at all ages

Objective 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Objective 5. Achieve gender equality and empower all women and girls

Objective 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Objective 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Objective 10. Reduce inequality within and among countries

Objective 12. Ensure sustainable consumption and production patterns

Objective 13. Take urgent action to combat climate change and its impacts

Objective 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development

Plan objectives

Objective 1: Consolidate and expand the air connectivity of the South American Region.

	Goals	Actions	Dates
A	Liberalization of air transport regulations.	1. Achieve 100% application of open skies policy in the SAM Region. 2. Simplify immigration controls and eliminate visas among all SAM States.	2020 to 2030 2020 to 2025
B	Strengthening of national airlines.	3. Allow foreign investment in all SAM States to strengthen the operation and sustainability of national airlines.	2022 to 2028
C	Optimization of air infrastructure and air navigation services.	4. Ensure that in all SAM States the required capacity in the air and land areas of airports has been successively installed and expanded to meet the increase in air traffic demand.	2022 to 2030
D	Simplification of airport processes.	5. Modernize airport processes for greater flow of passenger, cargo and aircraft traffic in all SAM States. 6. Facilitate and simplify the security control for passengers in transit in all SAM States.	2020 to 2030 2022 to 2030
E	Optimization of the level of rates and taxes.	7. Reduce rates and / or exempt taxes on air transport in all SAM States. 8. Improve the control of the operating rates applied by airports to other air service providers in all SAM States.	2022 to 2030 2022 to 2030
F	Promotion of new routes.	9. Expand the network of existing direct routes to achieve a higher level of intra-regional connectivity in at least 80% of SAM States. 10. Explore new destinations and markets in countries with high growth potential outside the region by at least 70% of SAM States.	2025 to 2030 2025 to 2035
G	Establishment of an alliance for regional tourism.	11. Attract jointly to travelers from distant regions with little presence in South America, such as Asia / Pacific, Middle East and Oceania, by at least 70% of SAM States.	2020 to 2023
H	Consolidation of hub airports.	12. Strengthen the operation of existing and potential regional and domestic hub airports to ensure that each South American State that requires them has at least one efficient one.	2020 to 2030

	Goals	Actions	Dates
I	Exploration and development of the low-cost airlines market.	13. Encourage the increase of routes and the supply of flights at more competitive prices to favor a greater proportion of the population by at least 70% of the SAM States. 14. Promote secondary airports to boost traffic development in low connectivity cities by at least 70% of SAM States.	2020 to 2025 2020 to 2035
J	Promotion of alliances and agreements between airlines.	15. Establish in all the SAM States a regulatory framework conducive to the entry and operation of new airlines through alliances, agreements or other arrangements.	2022

Objective 2: Increase aviation safety in the South American Region.

	Goals	Actions	Dates
A	Effective implementation of the State safety oversight system	1. Obtain 100% effective enforcement (EI) in the eight (8) critical elements of the State safety oversight system, as appropriate to the complexity of the civil aviation system and the current percentage of EI of each State: - States with EI less than 65%, Improvement of 75% Improvement of 80% Improvement of 85% Improvement of 90% Improvement of 95-100% - States with EI between 65 and 74.99%, Improvement of 80% Improvement of 85% Improvement of 90% Improvement of 95% Improvement of 95-100% - States with EI between 75 and 84.99%, Improvement of 85% Improvement of 90% Improvement of 95% Improvement of 95-100% - States with EI between 85 and 95%, Improvement of 95% Improvement of 95-100%	2020 to 2030 2020 2022 2024 2026 2028-30 2020 2022 2024 2026 2028-30 2020 2022 2024 2028-30 2020 2028-30
B	Implementation of the State Safety Program (SSP)	2. Implement a sustainable State Safety Program (SSP) in all States. 3. Implement an effective SSP in all States, as appropriate to the complexity of each State's civil aviation system.	2020 2025

	Goals	Actions	Dates
C	Reduction of accident rate in regular commercial air transport with airplanes over 5 700 kg	4. Reduce, with the contribution of all States, the accident rate of the SAM Region below the global rate and achieve a consecutive period of 3 years without fatalities in aircraft accidents, maintaining it as from 2030, as follows: - 10% below 2.34, which corresponds to the value of the SAM slope, calculated for 2020. Target: 2.10 - 10% below 2.11, which corresponds to the value of the SAM slope, calculated for 2022. Target: 1.90 - 10% below 1.91, which corresponds to the value of the SAM slope, calculated for 2024. Target: 1.72 - 10% below 1.74, which corresponds to the value of the SAM slope, calculated for 2026. Target: 1.57, no fatalities - 10% below 1.59, which corresponds to the value of the SAM slope, calculated for 2028. Target: 1.43, without fatalities - 10% below 1.45 which corresponds to the value of the SAM slope calculated for 2030. Target: 1.30, no fatalities	2020 to 2030 2020 2022 2024 2026 2028 2030
D	Reduction of the RE accident rate in regular commercial air transport with airplanes over 5 700 kg	5. Reduce, with the contribution of all States, the accident rate by RE of the SAM Region below the global rate and achieve a consecutive period of 3 years without fatalities in aircraft accidents, maintaining it as of 2030, as follows: - 10% below 0.54, which corresponds to the value of the SAM slope, calculated for 2020. Target: 0.48 - 10% below 0.42, which corresponds to the value of the SAM slope, calculated for 2022. Target: 0.38 - 10% below 0.32, which corresponds to the value of the SAM slope, calculated for 2024. Target: 0.29 - 10% below 0.24, which corresponds to the value of the SAM slope, calculated for 2026. Target: 0.21, no fatalities - 10% below 0.16, which corresponds to the value of the SAM slope, calculated for 2028. Target: 0.14, no fatalities - 10% below 0.09, which corresponds to the value of the SAM slope, calculated for 2030. Target: 0.08, no fatalities	2020 to 2030 2020 2022 2024 2026 2028 2030
E	Reduction of the number of accidents by RE in airplanes of more than 2 250 kg,	6. Reduce, with the contribution of all States, the number of accidents per RE of the SAM Region in airplanes of more than 2 250 kg, which was 21 in 2016, as follows: - 20% of the total SAM accidents of 2016: 17 - 30% of the total SAM accidents in 2016: 15 - 40% of the total SAM accidents of 2016: 13 - 50% of the total SAM accidents of 2016: 10 - 60% of the total SAM accidents in 2016: 8 - 70% of the total SAM accidents of 2016: 6	2020 to 2030 2020 2022 2024 2026 2028 2030

	Goals	Actions	Dates
F	Reduction of the number of accidents by RE in airplanes of 2 250 kg or less	7. Reduce, with the contribution of all States, the number of accidents per SR of the SAM Region in airplanes of 2 250 kg or less, which was 53 in 2016, as follows: - 20% of the total SAM accidents in 2016: 42 - 30% of the total SAM accidents of 2016: 37 - 40% of the total SAM accidents of 2016: 32 - 50% of the total SAM accidents of 2016: 26 - 60% of the total SAM accidents of 2016: 21 - 70% of the total SAM accidents in 2016: 16	2020 to 2030 2020 2022 2024 2026 2028 2030
G	Enactment of laws on the protection of sources of safety information	8. Produce and enact safeguards laws that ensure the appropriate use and protection of safety information, to facilitate their continued availability in support of strategies for improvement, following the guidance in this regard contained in ICAO Annex 19.	2020

Objective 3: Increase the institutional strength of the civil aviation and aviation accident investigation authorities of the South American Region.

	Goals	Actions	Dates
A	Review and updating of legislation relating to the organization of civil aviation and aircraft accident investigation authorities.	1. Review and update the aeronautical legislation in harmony with the requirements demanded by the effective implementation of the State safety oversight system. 2. Consider in the legislation provisions that allow the aeronautical authorities to act with independence and administrative, financial and organizational autonomy, achieving an adequate level of institutional strength. 3. Adopt a statute or similar legal instrument, which stipulates that a director and a management board or similar body heads the aeronautical authorities, and that concentrates all provisions concerning their establishment, organization, requirements, powers and operation.	2020
B	Autonomy and independence of the director of the authority to discharge his duties free of the political power.	4. Strengthen the stability and independence of the director by establishing that his appointment lasts for eight years or more in all States. 5. Stipulate that the director be selected and appointed by the members of the management board or similar collegiate body. 6. Stipulate that his dismissal is impossible except for legally prescribed reasons. 7. Determine that he cannot hold other positions in government. 8. Provide that the appointment is not renewable. 9. Establish that independence is a formal requirement for appointment.	2020

	Goals	Actions	Dates
C	Autonomy and independence of the members of the management board of the authority to perform their functions free of the political power.	10. Ensure the stability and independence of the members of the management board or similar collegiate body by establishing that their appointment lasts for eight years or more. 11. Stipulate that be appointed by the director of the authority. 12. Stipulate that their dismissal is impossible except for legally prescribed reasons. 13. Determine that they cannot hold other positions in government. 14. Provide that their appointments are not renewable. 15. Establish that independence is a formal requirement for appointments.	2020
D	Independence of the authority formally established and without obligations in its relationship with government and parliament.	16. Formally establish the independence of the authority. 17. Stipulate that the authority has no formal obligations before the government. 18. Stipulate that the authority has no formal obligations before the parliament. 19. Determine that no body, other than a court, can overturn the decisions of the authority in which it has exclusive jurisdiction.	2020
E	Financial and organizational autonomy of the authority.	20. Establish that the source of the budget of the authority comes exclusively from the fees levied on the regulated industry. 21. Stipulate that only the authority control the budget. 22. Provide that only the authority decides on the agency's internal organization. 23. Provide that only the authority is in charge of the agency's personnel policy (hiring and firing staff, deciding on its allocation and composition), ensuring that the professional staff have a similar or higher level of competence and a remuneration level higher than those of the industry personnel.	2020

	Goals	Actions	Dates
F	Strengthening of the regulatory powers of the civil aviation authority.	24. Establish that only the civil aviation authority is the competent body for regulation in the domain that concerns it, free from the provision of services or investigation of aircraft accidents or incidents that do not correspond to its duties.	2020

Objective 4: Seek the highest level of environmental protection of impacts produced by the aeronautical activity in the South American Region.

	Goals	Actions	Dates
A	Reduction to the maximum possible of the affectation of the population to noise produced by aircraft.	1. Establish policies to mitigate noise from civil aviation at aerodromes and surrounding areas. 2. Promote operational measures and regulations that strike the balance between air operations at the aerodromes and the quality of life of surrounding populations. 3. Promote the emission and implementation of norms and procedures to attenuate the noise coming from the ground tests of engines. 4. Promote the implementation of aircraft certification standards in terms of noise. 5. Promote the implementation of technologies to optimize air operations and allow working with quieter aircraft and advanced technology (Types III and IV). 6. Promote the gradual renewal of aircraft operating in the region by quieter aircraft.	2020
B	Limitation or reduction to the maximum extent possible the impact of aviation emissions on local air quality.	7. Promote the adoption of measures to reduce emissions from engines that affect local air quality (particles of materials, nitrous oxides, among others). 8. Promote the issuance and implementation of local regulations regarding the certification of aircraft in relation to engine emissions. 9. Promote the gradual renewal of aircraft operating in the region by higher technology aircraft and lower emissions.	2020 to 2024

	Goals	Actions	Dates
C	Limitation, reduction to the maximum extent possible or compensation of the impact of greenhouse gas emissions by aviation in the regional and global climate.	10. Promote the study and research of the effects of greenhouse gases on local, regional and global climate. 11. Promote the development, emission and updating of action plans for CO2 reduction (updates must be made and sent to ICAO every three years). 12. Promote the adoption of a system of inventory or accounting of emissions from civil aviation through the implementation of measurement, reporting and verification (MRV) systems. 13. Create capacities in the States so that they can assume the responsibilities inherent to participation in the Carbon offsetting and reduction scheme for international aviation (CORSIA).	2021 to 2035
D	Safe and orderly development of civil aviation in relation to the quality of the environment.	14. Conduct studies and research to enable civil aviation authorities to gain a full understanding of the impacts of aviation on the environment. 15. Promote the planning, remodeling or construction of greener airports, with designs and architecture that allow ventilation and natural lighting, using renewable energies, electric vehicles and ecologically treated water, also considering the recovery of affected areas and the reforestation of endemic flora. 16. Ensure that land-use planning in the vicinity of airports is effectively compatible with aeronautical activity and does not endanger aircraft or surrounding communities. 17. Achieve the greatest possible compatibility between the safe and orderly development of civil aviation and the quality of the environment.	2020 to 2035

Monitoring and evaluation

The biannual meeting of Directors of Civil Aviation of the South American Region will be in charge of monitoring and evaluating the fulfillment of the plan objectives and goals, with the support of the ICAO South American Regional Office and other entities and organizations of the sector.

The South American Region will present to each ICAO Assembly a report on the plan progress, facilitating the exchange of experiences, including successes, challenges and lessons learned, to achieve the plan coherence and coordination with ICAO policies.

Greater capacity-building support will be offered in countries with less air connectivity, to transform South American civil aviation by providing a high degree of connectivity in a secure manner, with strong and environmentally friendly government institutions by 2035, in benefit of the development of the peoples of the region.