



**Eleventh Plenary Meeting of the Regional Aviation Safety Group — Pan America
(RASG-PA/11)**

Online, October 28, 2021 and November 4 and 5, 2021

Agenda Item 3: Implementation problems and possible solutions

IDENTIFICATION OF THE IMPLEMENTATION GAPS AND THEIR POSSIBLE SOLUTIONS
(Presented by Secretariat)

EXECUTIVE SUMMARY	
This Study Note presents, based on the information provided by the Dashboard of Performance Indicators (SPIs) of the Regional Aviation Safety Group - Pan America (RASG-PA), the common problems of implementation identified and the possible solutions, the assistance required and the estimated timeframes to resolve in the Pan-American region.	
Action:	The Meeting is invited to: a) Review the content of this Study Note and Appendix A and B; and b) Comment and approve the Conclusions proposed in Appendix B of this Study Note.
<i>Strategic Objectives:</i>	<ul style="list-style-type: none">• Safety
<i>References:</i>	<ul style="list-style-type: none">• RASG-PA Procedural Handbook• RASGs Terms of Reference• Doc 10004 – Global Aviation Safety Plan (GASP)

1. Introduction

1.1 The RASG-PA supports the implementation of the GASP with the objective of addressing global aviation safety issues from a regional perspective. Additionally, the RASG-PA supports the NACC and SAM Regions in setting targets, priorities, indicators, and setting measurable targets to address safety-related deficiencies in each region while ensuring consistency of action and implementation, and coordination of efforts.

1.2 The RASG-PA mission is to reduce the risk of fatality in commercial aviation, ensuring the prioritization, coordination, and implementation of data-based safety enhancement initiatives in the Pan American Region through the active participation of all stakeholders in civil aviation.

1.3 According to its Procedures Handbook, the RASG-PA has two objectives:

- a) develop an integrated data-based strategy and implement a work program that supports a regional performance framework for operational risk management, to reduce the risk

of fatality in commercial aviation in the Pan-American Region, and to promote safety initiatives of the States and industry; and

- b) Support, monitor and report on the implementation by States of the Global Safety Plan (GASP, Doc. 10004) considering the Regional Safety Plans, and fostering cooperation between all States and interested parties.

1.4 Regarding the objective detailed in 1.3 (b), the Terms of Reference (TORs) for RASGs, approved by the ICAO Council, establish that these groups must report annually, among other aspects, the common implementation problems identified among the members of the RASG and the possible solutions, the assistance required and the estimated deadlines to solve them.

1.5 This Working Paper puts into consideration of the meeting, based on the data collected by the Safety Monitoring and Report Team (SMRT) and published in the Dashboard of the safety performance indicators (SPIs) of the RASG-PA, those aspects of implementation that have not reached the goals set by the ICAO Global Safety Plan (GASP), as well as the possible solutions, the assistance required and the estimated deadlines to solve them.

1.6 The information contained in this document, as well as in the dashboard, comes mainly from reactive sources, such as information on accidents and serious incidents, and the level of effective implementation (EI) among others, and should be complemented by the information presented by the Pan America Regional Aviation Safety Team (PA-RAST) in NE06, which mostly uses proactive information to identify safety risks.

2. Analysis of the main implementation gaps

2.1 In accordance with the information provided by the RASG-PA Safety Indicators (SPIs), the Secretariat prepared an analysis of the main implementation gaps of the GASP in the Pan-American region. The comparison of the State of the indicators with the GASP goals is described below, and is attached to this note as **Appendix A**.

2.2 This comparison makes it possible to identify the main implementation gaps, as presented from paragraph 2.3; and then develop the solution recommendations presented in Section 3, below.

2.3 Identification of implementation gaps vs. ASP Goals and Targets

- (a) Target 1.1 - Maintain the decreasing trend of the accident rate at the regional level

The accident rate in Pan-America in 2021 is 2.18 until the 10th of September. The average rate for the last 5 years is 3.1. The trend of the rate of the last 5 years is decreasing.

Year	Accident rate	Number of acid.	Fatal accidents	Fatalities
2017	3.5	47	1	1
2018	3.3	45	3	114
2019	4.0	54	1	1
2020	2.49	20	0	0
2021	2.18	15	0	0

Table 1 – Accident rate, number of accidents and number of fatalities

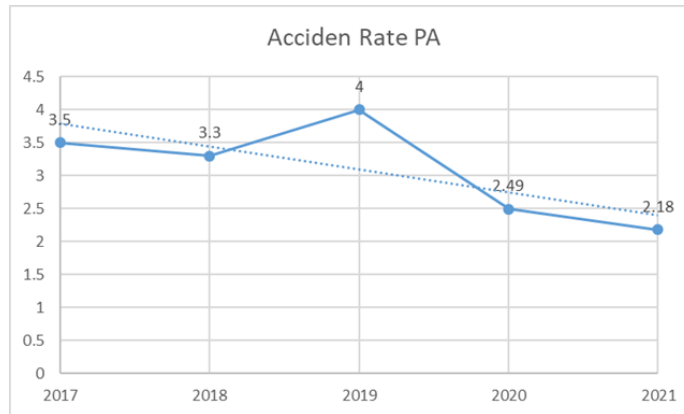


Figure 1 – Accident rate in Pan America

According to the distribution of accidents by category of occurrence, accidents related to turbulence represent 40% of all accidents so far this year.

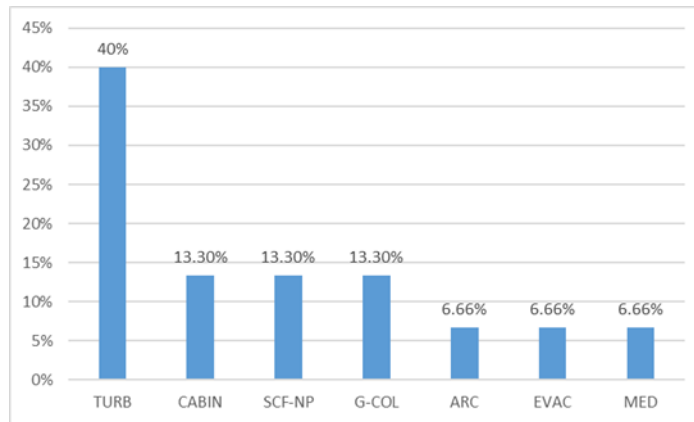


Figure 2 – Accidents distribution by category

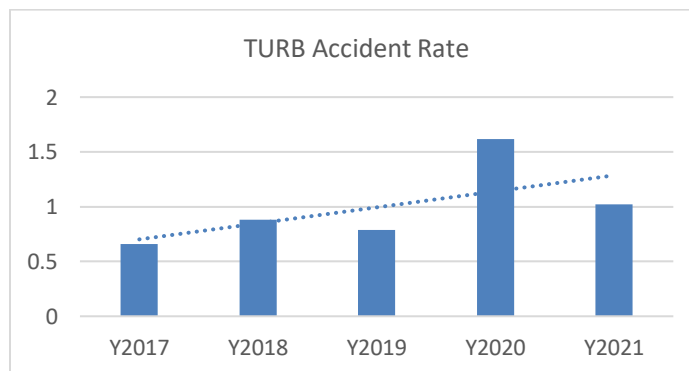
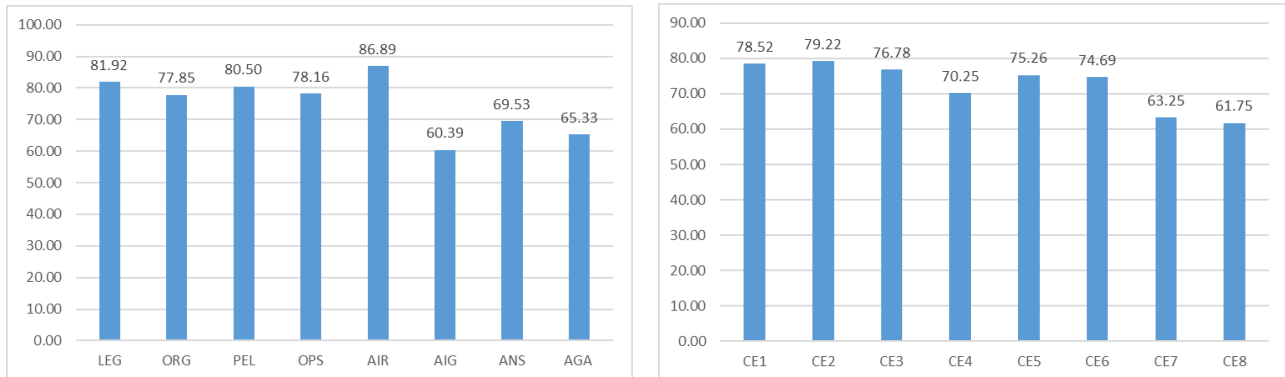


Figure 3 – Turbulence related accident rate evolution

- (b) Target 2.1 - All States improve their score for the effective implementation (EI) of critical elements (CE) of the safety oversight system to reach 75% by 2022.

The average effective implementation in Pan America as of September 2021 is **73.2**. A total of **23** States have reached the goal, representing **68%** of the Region. The AIG area is the one with the lowest percentage of implementation:



Figures 4 y 5 – Effective implementation (EI) by Area and Critical Element

- (c) Target 2.2 – By 2022, all States achieve a safety oversight index (SOI) greater than 1, in all categories.

Currently **81.8%** of States in the Region have reached a safety index ≥ 1 in all categories, however, it should be taken into account that the fall in traffic due to COVID-19 favors the increase in the index.

- (d) Target 3.1 – By 2022, all States establish the foundation of an SSP

No State in the Region has reached 100% compliance with the SSP foundation. The regional average of compliance is **69.8%**. Only **7** States have achieved compliance greater than 90%, equivalent to **20.6%** of the States in the Region.

- (e) Target 3.2 – By 2025, all States implement an effective SSP, depending on the complexity of their respective aviation systems

The NACC and SAM Regional Offices promote their programs to establish an SSP, as a requirement for effective implementation. The current establishment average is **31.77%**.

- (f) Target 4.1 – By 2020, States that do not plan to achieve Goals 2 and 3 use a regional safety oversight mechanism turn to another State or other safety oversight organization with functions recognized by ICAO in seeking assistance to strengthen its safety oversight capabilities

This SPI cannot currently be measured, as there is no normalized metric. It is planned to be included in the 2023-2025 Edition of the GASP.

- (g) Target 4.2 – By 2022, all States provide information on safety risks, including safety performance indicators (SPI) from their SSPs to their respective Regional Aviation Safety Group (RASG).

This SPI is not currently measured. It is subject to the progress of the implementation of the SSPs, and of the States' Safety Plans. It is necessary to establish a regional metric in a coordinated manner between the NACC and SAM Offices.

- (h) Target 4.3 – By 2022, all States with effective safety oversight capabilities and an effective SSP actively lead RASG activities in safety risk management

This SPI is not currently measured. It is subject to the progress of the implementation of the SSPs, and of the States' Operational Safety Plans. It is necessary to establish a regional metric in a coordinated manner between the NACC and SAM Offices.

- (i) Target 5.1 - By 2020, all service providers use harmonized international SPIs as part of their safety management systems (SMS)

SPI is not currently measured. There is no standard metric or sufficient guidance on this.

- (j) Target 5.2 - By 2022, the number of service providers participating in relevant ICAO recognized industry assessment programs has increased

SPI is not currently measured. The Secretariat should coordinate with industry representatives in the RASG-PA to provide information on the status of implementation of this goal.

- (k) Goal 6.1 - By 2022, all States have implemented the basic elements of airport and air navigation infrastructure

Although there is insufficient guidance on how to measure this goal, the Secretariat has chosen to temporarily use the following indicators:

EI AGA – **65.33**

EI ANS – **69.53**

% ARDM Certificates – **49.33**

% ARDM with RST – **47.05**

2.4 **Appendix A** to this Working Paper presents this information in table format for additional reference.

2.5 Additionally, the values of the indicators included in 2.3 and **Appendix A** serve as reference lines for the annual verification of the progress of the implementation of each of the GASP goals and objectives. The RASG-PA dashboard also allows periodic monitoring of the performance of the indicators, in such a way as to facilitate timely intervention.

3. Identification of possible solutions to implementation gaps

3.1 Based on the information provided in the previous Section, the Meeting could consider the following measures to directly contribute to mitigating the main gaps in the implementation of the objectives and targets of the GASP:

- a) In order to ensure timely mitigation activities associated with emerging risks in the region, develop activities/projects to mitigate risks associated with turbulence as part of the RASG-PA work plan;
- b) In order to strengthen the aviation accident and incident investigation activities in the region, which allow obtaining quality reactive information and the timely formulation of effective safety recommendations, develop activities/projects to strengthen the competencies of the AIG Authorities/Organizations in the Pan-American Region;
- c) In order to promote the processes of establishment and implementation of the SSP in the States of the region in such a way as to facilitate the processes of obtaining and exchange of proactive safety information, develop activities/projects to strengthen the Regional Safety Programs in support for the establishment and implementation of SSPs;
- d) In order to mitigate risks associated to the following accidents/Incidents categories: Abnormal contact with the runway (ARC); Impact with birds (BIRD); Collision on the ground (G-COL); Runway outputs (RE); Runway incursions (RI); Loss of control on the ground (LOC-G); Aerodrome deficiencies (ADRM); Ground Assistance (RAMP); Fauna (WILD); Collision with obstacles during takeoffs and landings (CTOL), develop activities/projects that encourage the implementation of Runway Safety Teams (RST).

3.2 In **Appendix B** of this Working Paper, four Conclusions/Decisions are presented with the mitigation strategies of paragraphs 3.1 (a) to 3.1 (d),

3.3 Aspects that refer to concrete recommendations to the ICAO Council to improve future editions of the GASP, which would facilitate or strengthen regional implementation activities, are presented in NE05.

4. Suggested Actions

4.1 The Meeting is invited to:

- a) Review the content of this Study Note and Appendices A and B; and
- b) Comment and approve the Conclusions/Decisions proposed in **Appendix B** of this Working Paper.

Appendix A

Status of implementation of the GASP 2020-2022 goals and targets in the Pan-American Region

Goal	Target	Level of implementation
Goal 1: Achieve a continuous reduction of operational safety risks	1.1 Maintain a decreasing trend of global accident rate	Ontrack/Achivable The accident rate in Pan-America in 2021 is 2.18 until the 10th of September. The average rate for the last 5 years is 3.1. The trend of the rate of the last 5 years is decreasing.
Goal 2: Strengthen States' safety oversight capabilities	2.1 All States to improve their score for the effective implementation (EI) of the critical elements (CEs) of the State's safety oversight system (with focus on priority PQs) as follows: by 2022 – 75 per cent by 2026 – 85 per cent by 2030 – 95 per cent	Off track/Not achievable The average effective implementation in Pan America as of September 2021 is 73.2. A total of 23 States have reached the goal, representing 68% of the Region
	2.2 By 2022, all States to reach a safety oversight index greater than 1, in all categories	Off track/Not achievable Currently 81.8% of States in the Region have reached a safety index ≥ 1 in all categories, however, it should be taken into account that the fall in traffic due to COVID-19 favors the increase in the index.
Goal 3: Implement effective State safety programmes (SSPs)	3.1 By 2022, all States to implement the foundation of an SSP	Off track/Not achievable No State in the Region has reached 100% compliance with the SSP foundation. The regional average of compliance is 69.8%. Only 7 States have achieved compliance greater than 90%, equivalent to 20.6% of the States in the Region.
	3.2 By 2025, all States to implement an effective SSP, as appropriate to their aviation system complexity	Off track/Not achievable The NACC and SAM Regional Offices promote their programs to establish an SSP, as a requirement for effective implementation. The current establishment average is 31.77%.
Goal 4: Increase collaboration at the regional level	4.1 By 2020, States that do not expect to meet GASP Goals 2 and 3, to use a regional safety oversight mechanism, another State or other safety oversight organization's ICAO recognized functions in seeking assistance to strengthen their safety oversight capabilities	Not started This SPI cannot currently be measured, as there is no normalized metric. It is planned to be included in the 2023-2025 Edition of the GASP.
	4.2 By 2022, all States to contribute information on safety risks, including SSP safety performance indicators (SPIs), to their respective regional aviation safety group (RASGs)	Off track/Not achievable This SPI is not currently measured. It is subject to the progress of the implementation of the SSPs, and of the States' Safety Plans. It is necessary to establish a regional metric in a coordinated manner between the NACC and SAM Offices.
	4.3 By 2022, all States with effective safety oversight capabilities and an effective SSP, to actively lead RASGs' safety risk management activities	Off track/Not achievable This SPI is not currently measured. It is subject to the progress of the implementation of the SSPs, and of the States' Operational Safety Plans. It is necessary to establish a regional metric in a coordinated manner between the NACC and SAM Offices.

Goal 5: Expand the use of industry programmes	5.1	By 2020, all service providers to use globally harmonized SPIs as part of their safety management system (SMS)	Not started SPI is not currently measured. There is no standard metric or sufficient guidance on this.
	5.2	By 2022, increase the number of service providers participating in the corresponding ICAO-recognized industry assessment programmes	Not started SPI is not currently measured. The Secretariat should coordinate with industry representatives in the RASG-PA to provide information on the status of implementation of this goal.
Goal 6: Ensure the appropriate infrastructure is available to support safe operations	6.1	By 2022, all States to implement the air navigation and airport core infrastructure	Off track/Not achievable Although there is insufficient guidance on how to measure this goal, the Secretariat has chosen to temporarily use the following indicators: EI AGA – 65.33 EI ANS – 69.53 % ARDM Certificates – 49.33 % ARDM with RST – 47.05

Tables and figures

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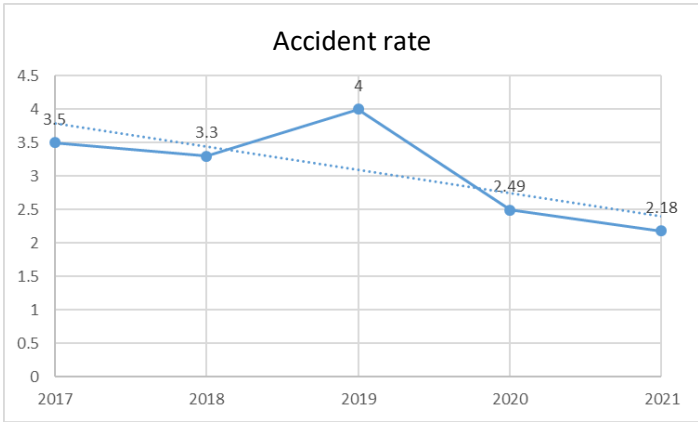
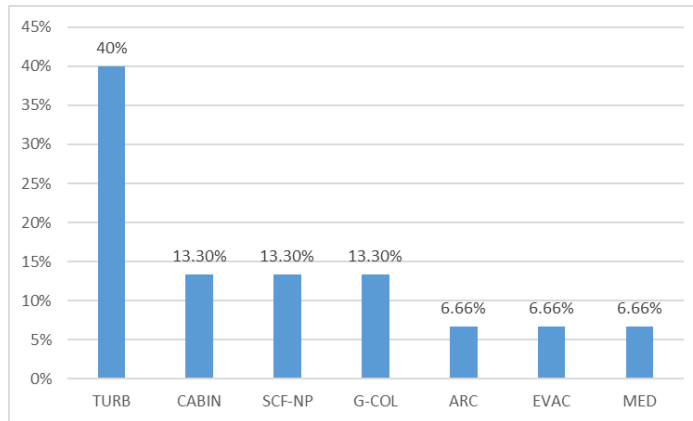
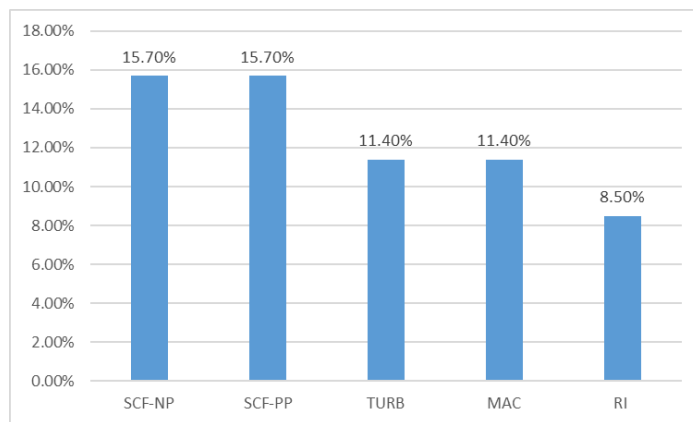


Figure 1 – Accident rate – Pan America



TURB – Turbulence
 SCF-NP – System or component failure (Non-powerplant)
 G-COL – Ground collision
 ARC – Abnormal runway contact
 EVAC – Evacuation
 MED – Medical

Figure 2 – Accident distribution by category



SCF-NP – System or component failure (Non-powerplant)
 SCF-PP – System or component failure (Powerplant)
 TURB – Turbulence
 MAC – Midair collision
 RI – Runway incursion

Figure 3 – Total occurrences distribution by category

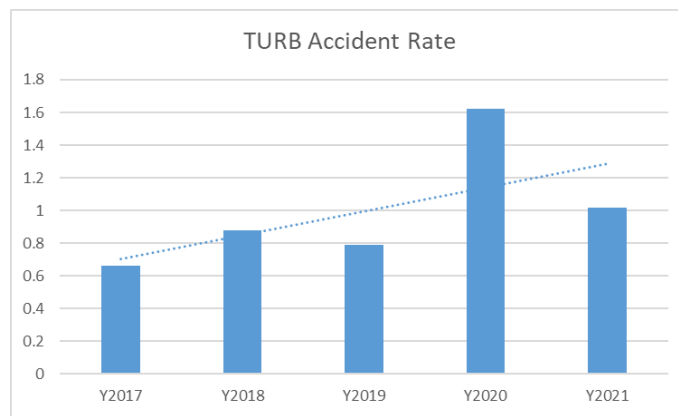
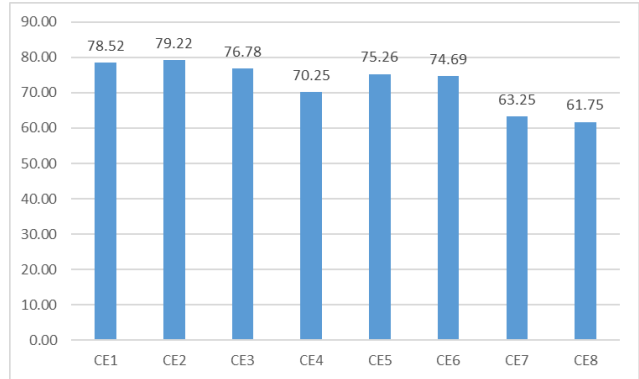
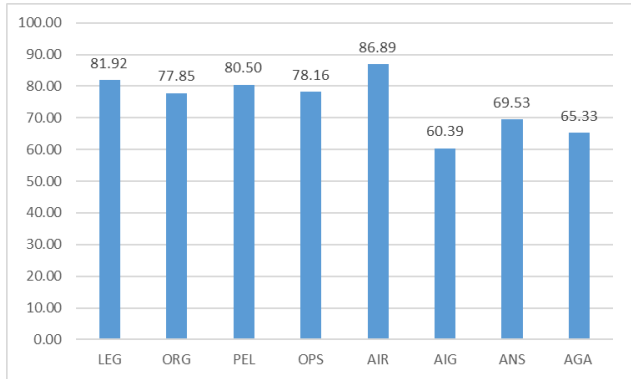


Figure 4 – Turbulence related accident rate evolution

% of occurrences related to HRC	19.9%
% of accidents related to HRC	0%

HRC – High Risk Category (CFIT, RE, RI, MAC, LOC-I)

Table 2 – Percentage of accidents and total occurrences related to High-Risk Categories (HRCs)



Figures 5 and 6 – Pan America effective implementation by area and critical element

APPENDIX B

CONCLUSION RASG-PA/CX/2021		TURBULENCE RELATED RISK MITIGATION	
What:	The RASG-PA Executive Steering Committee (ESC) coordinates with the Secretariat and the work teams, the development of activities and/or projects to mitigate risks associated with turbulence within the RASG-PA work plan.	Expected impact:	<input type="checkbox"/> Political/Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Enviromental <input checked="" type="checkbox"/> Operacional/Técnico
Why:	To support the maintenance of a decreasing trend in the regional accident rate, by mitigating emerging risks identified through data analysis.		
When:	Projects must be approved by the ESC, at the latest, during the ESC/37 meeting.	Status:	Valid
Who:	<input type="checkbox"/> States <input checked="" type="checkbox"/> ICAO <input checked="" type="checkbox"/> PA-RAST Co-chairs <input checked="" type="checkbox"/> ICAO SAM Office (Secretariat) <input checked="" type="checkbox"/> ICAO NACC	Responsible: : Wagner Souza/Javier Vanegas Javier Puente/Ruben Lino/Sereya Schotborgh	

CONCLUSION RASG-PA/CX/2021		STRENGTHENING OF AIG EFFECTIVE IMPLEMENTATION	
What:	The Executive Steering Committee (ESC) of the RASG-PA coordinates with the Secretariat, the NACC and SAM Regional Offices, and the work teams the development of activities and / or projects to strengthen the competencies of the AIG Authorities / Organizations in the Pan America Region.	Expected impact:	<input type="checkbox"/> Political/Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Enviromental <input checked="" type="checkbox"/> Operacional/Técnico
Why:	To improve the quality of accident and incident investigation activities in the States of the Region, in such a way that it allows a better identification of the probable causes and contributing factors, as well as the adequate communication and dissemination of the conclusions and recommendations of the investigations.		
When:	Projects must be approved by the ESC, at the latest, during the ESC/37 meeting.	Status:	Valid
Who:	<input type="checkbox"/> States <input checked="" type="checkbox"/> ICAO <input type="checkbox"/> PA-RAST Co-chairs <input checked="" type="checkbox"/> ICAO SAM Office (Secretariat) <input checked="" type="checkbox"/> ICAO NACC	Responsible: Wagner Souza/Javier Vanegas Javier Puente/Ruben Lino/Sereya Schotborgh	

CONCLUSION RASG-PA/D2/2021		STRENGTHENING OF THE REGIONAL PROGRAMS FOR THE ESTABLISHMENT AND IMPLEMENTATION OF THE SSP.	
What:	The Executive Steering Committee (ESC) of the RASG-PA coordinates with the Secretariat, the NACC and SAM Regional Offices, and the work teams, the development of activities and / or projects to strengthen the Regional Programs to support the establishment and implementation by SSP.	Expected impact:	<input type="checkbox"/> Polítical/Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Enviromental <input checked="" type="checkbox"/> Operacional/Técnico
Why:	For timely identification of hazards and adequate risk management at the national and regional levels, and to facilitate the process of collecting and sharing safety data and information.		
When:	Projects must be approved by the ESC, at the latest, during the ESC/37 meeting.	Status:	Valid
Who:	<input type="checkbox"/> States <input checked="" type="checkbox"/> ICAO <input type="checkbox"/> PA-RAST Co-chairs <input checked="" type="checkbox"/> ICAO SAM Office (Secretariat) <input checked="" type="checkbox"/> ICAO NACC	Responsible: Wagner Souza/Javier Vanegas Javier Puente/Ruben Lino/Sereya Schotborgh	

CONCLUSION		STRENGTHENING THE IMPLEMENTATION OF RUNWAY SAFETY TEAMS (RST)	
RASG-PA/C3/2021			
What:	The RASG-PA Executive Steering Committee (ESC) coordinates with the Secretariat and the NACC and SAM Regional Offices, and the work teams, the development of activities and / or projects to strengthen the implementation of Runway Safety Teams (SRT).	Expected impact:	<input type="checkbox"/> Political/Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Enviromental <input checked="" type="checkbox"/> Operacional/Técnico
Why:	To strengthen risk mitigation activities associated with the following accident / incident categories: Abnormal runway contact (ARC); Impact with birds (BIRD); Ground collision (G-COL); Runway excursions (RE); Runway incursions (RI); Loss of control on the ground (LOC-G); Aerodrome deficiencies (ADRM); Ground Assistance (RAMP); Wildlife (WILD); Collision with obstacles during takeoffs and landings (CTOL).		
When:	Projects must be approved by the ESC, at the latest, during the ESC/37 meeting.	Status:	Valid
Who:	<input type="checkbox"/> States <input checked="" type="checkbox"/> ICAO <input checked="" type="checkbox"/> PA-RAST Co-chairs <input checked="" type="checkbox"/> ICAO SAM Office (Secretariat) <input checked="" type="checkbox"/> ICAO NACC	Responsables:	Wagner Souza/Javier Vanegas Javier Puente/Ruben Lino/Sereya Schotborgh
