



Agenda Item 1: Regional situation and priorities

SUPPORT FOR THE CONTINUOUS IMPROVEMENT OF SAFETY IN SAM STATES

(Presented by the Secretariat)

SUMMARY	
<p>This working paper (WP) presents information on the follow-up to the implementation of safety enhancements in SAM States, based on the guidelines set out in the SAMSP.</p> <p>It also contains draft conclusions to allow civil aviation authorities to support the attainment of objectives and targets of the GASP and SAMSP.</p>	
<p>References:</p> <ul style="list-style-type: none">- Global Aviation Safety Plan (GASP), Edition 2023-2025; and- SAM Safety Plan (SAMSP), Edition 2023-2025	
<p>ICAO objectives:</p>	<p style="text-align: center;"><i>strategic</i> Safety</p>

1. Introduction

1.1 The Sixteenth Meeting of Civil Aviation Authorities of the SAM Region (RAAC/16), held in Lima, Peru, on 6-7 December 2018, approved the first edition of the SAM Region Safety Plan (SAMSP) through Conclusion RAAC/16-2. This first edition was prepared based on Doc 10004 - GASP, Edition 2020-2022.

1.2 Subsequently, ICAO started to draft a new edition of the SAMSP in 2021, and, on 10 December of that year, the South American Regional (SAM) Office circulated State Letter LT 21/1 - SA461, requesting the designation of experts (focal points) no later than 14 January 2022, to review the SAMSP.

1.3 The SAMSP was reviewed by the Focal Points designated by the States throughout 2022, after the review, the draft of the SAMSP was circulated to the Civil Aviation Administrations for comments and acceptance. Once the term ended, the Secretariat received the comments from Brazil and Chile, for which the SAMSP Focal Points were convened to three meetings, in order to agree on the comments sent. Subsequently, the draft of the SAMSP was sent in the Third round of consultation to the General Directors of Civil Aviation for comments or approval until March 31 of the current year. Once the date for sending comments or approval ended (March 31, 2023) and by virtue of not having received any additional comments to the SAMSP, said plan has been approved by the Directors of Civil Aviation through the fast track mechanism. The express approval will be communicated to the SAM States by means of an official

letter from the SAM Office.

2. Discussion

2.1 Starting in 2019 and based on the first edition of the SAMSP, the SAM Region started taking the following steps to achieve the main targets of the SAMSP:

Maintain a decreasing trend in the accident rate at regional level

2.2 Considering that the aircraft accident and incident investigation (AIG) field has the lowest effective implementation (IE) rate in the Region (64.60%), the SAM Office scheduled technical assistance visits and provided virtual AIG technical assistance to its States to help them improve AIG EI. Likewise, the AIG Regional Cooperation Mechanism (ARCM) framework was adjusted in order to deal with issues related to aircraft accidents and incidents in the SAM Region. As a final step, the AIG focal points have been integrated with the safety focal points for the development and follow-up of the SAMSP 2023-2025 edition.

2.3 Regarding the number of aircraft accidents in the SAM Region during the period 2018-2022, **36 accidents** occurred in scheduled and non-scheduled commercial air transport involving aircraft over 5700 kg.

2.4 The most recurrent **accident** categories were: runway excursion (RE) with **9 accidents**; abnormal runway contact (ARC) with **5 accidents**; system/component failure or malfunction - non-powerplant (SCF-NP) with **4 accidents**; and the following categories with **2 accidents** each: loss of control in flight (LOC-I); controlled flight into terrain (CFIT); and turbulence (TURB).

2.5 From the analysis carried out, it can be inferred that, during the pandemic, the number and rate of accidents decreased, associated with a decrease in air operations. However, with the gradual recovery of these operations, the number and rate of accidents have begun to increase, and it is therefore suggested that RAAC/17 support the work being carried out by the SAM Office and ARCM to improve AIG EI and reduce air accident rates.

Improving effective implementation (EI) of the eight critical elements

2.6 Starting in September 2019, the SAM Office implemented **PRO SAM 001 - Procedure to monitor and support the completion of corrective action plans (CAPs) and the review of priority protocol questions (PQs) of SAM States** in order to gradually achieve 95% EI by 2030, in accordance with Target 2.1 of the GASP and SAMSP. It also provided virtual and face-to-face technical assistance for the resolution of PQs prior to USOAP CMA activities and initiated a regional technical cooperation project with one of its States.

2.7 During the period 2019-2022, the SAM Region received three (3) CMA audits and four (4) ICAO coordinated validation missions (ICVMs). As a result, the Region increased its EI from 78.62% to **82%** between 2019 and 2021. However, in 2022, EI dropped to **79.56%**.

2.8 The extension of time between audits could be affecting the commitment of some States to continuous improvement. Furthermore, the COVID-19 pandemic may also have affected the sustainability of EI levels achieved in previous years by States, considering all the economic and human resource impact on CAAs.

2.9 To continue to support SAM States in achieving 95% EI by 2030, it is proposed to RAAC/17 to implement a *continuous improvement programme to strengthen civil aviation systems of SAM States*. At the start of this programme, one-week face-to-face missions would be carried out to review PQs in all audit areas, which would provide insight into the status of each State and allow for the formulation of the corresponding recommendations for improvement. This programme, the costs of which would be borne by the SAM Office, would also provide support so that States that are lagging behind in the USOAP CMA may improve their EI, while for States with good EI levels, the programme would enable them to maintain and improve their current EI. **Appendix A** sets forth the *Continuous improvement programme to strengthen civil aviation systems of SAM States*.

2.10 Following face-to-face missions, the civil aviation authorities (CAA) and the SAM Office would establish a work plan, with responsible parties and timelines, for a feasible and continuous follow-up to improve compliance with international standards and recommended practices (SARPs). The work would also allow for the development of specific projects to support States, based on opportunities for improvement identified in the face-to-face missions. The purpose is to strengthen PRO SAM 001 and overcome the challenges encountered in the post-pandemic environment, giving priority to the main safety issues of SAM States.

2.11 It is crucial to emphasise that the SAM continuous improvement programme would be independent from the audit processes conducted within the framework of ICAO. The proposed programme would be independent and carried out by the SAM Office, where information on the status and action plan, with the respective deadlines, would be kept confidential between the State concerned and the Regional Office. It is important to note that the USOAP CMA process is managed by the new Monitoring, Analysis and Coordination (MAC) Office (formerly known as the Monitoring and Oversight (MO) Office) of the Air Navigation Bureau (ANB) at ICAO Headquarters, which will not use the information generated in the SAM continuous improvement programme to conduct a compliance assessment to measure EI.

2.12 In order to implement the proposed continuous improvement programme to strengthen civil aviation systems of SAM States, the following draft conclusion is submitted to RAAC/17 for its analysis and approval:

CONCLUSION RAAC17/XXX	Approval of the Continuous Improvement Programme to Strengthen Civil Aviation Systems of SAM States
<p>What:</p> <p>The Seventeenth Meeting of Civil Aviation Authorities of the South American Region (RAAC/17) agrees to:</p> <p>a) approve the Continuous Improvement Programme to Strengthen Civil Aviation Systems of SAM States, in accordance with Appendix XX to this part of the report and once the dates of the on-site technical assistance visits have been agreed with the States;</p> <p>b) keep the information produced by the program confidential between the SAM Office and its States and that such information is not shared with other States, organizations or stakeholders that are not from the SAM Region nor with ICAO offices in charge of USOAP CMA; and</p>	<p>Expected Impact</p> <p><input type="checkbox"/> Political/Global</p> <p><input type="checkbox"/> Inter-regional</p> <p><input type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Operational/Technical</p>

c) once included in the mission schedule of the programme, States remain committed to follow up on the agreed work plan to improve their civil aviation systems.	
Why: So that SAM States can strengthen their civil aviation systems and achieve the targets established in the SAMSP; National Aviation Safety Plans (NASPs); Regional Air Navigation Plan Vol. III and the National Air Navigation Plans of the SAM States, which seek to achieve implementation of the basic building blocks (BBBs) and ASBU and non-ASBU solutions.	
When: As of approval	Status: <input checked="" type="checkbox"/> Valid <input type="checkbox"/> Superseded <input type="checkbox"/> Completed
Who: <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> Secretariat <input type="checkbox"/> Other (Specify):	

SSP/SMS implementation

2.13 Annex 19 to the Convention on International Civil Aviation was promulgated by ICAO to assist States in managing aviation safety risks through a preventive strategy based on the implementation of the State safety programme (SSP) by States and of Safety management systems (SMS) by service providers.

2.14 Annex 19 and Doc 9859 detail the benefits of SSP implementation. These benefits, which can be related to economic, efficiency and safety aspects, result from a clear articulation of SSP mechanisms. These mechanisms that allow for safety management and the identification of **critical** safety **issues** within States deserve greater attention, support and dedicated resources for their implementation and maintenance.

2.15 Holistic implementation of the SSP has become a major challenge for SAM States. It is essential to understand the benefits of implementing an SSP within the structure of each State's own aeronautical entities. The integration and collaboration of these entities and of the safety management personnel is key to the effective implementation of the SSP and SMS.

2.16 The importance of accident and incident investigation (AIG) agencies within the SSP structure should also be emphasised. In order for States to properly exercise their safety management functions, they need to integrate the AIG agencies into the SSP. These agencies support the SSP by managing safety risks to prevent future aircraft accidents and incidents. Likewise, AIG agencies, embedded in the civil aviation authorities, deserve attention, support and to be structured in accordance with international standards so that they can fulfil their roles proactively in accident investigation and safety risk management.

2.17 The following activities have been carried out for the implementation of the SSP: Starting in 2013, the SAM Office set up the SSP implementation meeting; then in 2017, the pilot project for SSP implementation was launched; and in 2019, the pilot project became part of the regular programme of the SAM Region. At present, the SAM Office holds monthly meetings to monitor the progress of the SSP. An agreement has also been concluded with the European Union/EASA to further the implementation of the SSP in SRVSOP States. In terms of training, in addition to the courses that have been delivered over a decade, in 2022, five (5) SSP-related courses were made available to SRVSOP States to train 156 experts. Despite efforts and achievements made, SSP implementation remains very low in most States and, in some of them, has not yet started. This is in addition to the difficulty of measuring SMS implementation.

2.18 SSP assessment has evolved to an approach based on maturity levels, the main levels being *present* and *present and effective*. The maturity level *present* seeks the establishment of a mechanism and its use; the development of a programme/plan; the identification of required training/competency needs and the enabler of a task. The maturity level *present and effective* focuses on verifying whether a mechanism is delivering the desired results; further review and improvement of a programme/plan; further review and improvement of training and competency needs; and whether the task is actually being carried out.

2.19 In view of the above, and considering that the SAMSP regional targets call for reaching the level of maturity *present* by 2025 and *present and effective* by 2028, RAAC/17 is requested to assume the commitment to support the implementation of the SSP/SMS in its States and in the SAM Region. Accordingly, the following draft conclusion is presented for its respective analysis and approval:

CONCLUSION RAAC17/XXX		Commitment to support the implementation of SSP/SMS in the SAM Region States	
What: The Seventeenth Meeting of Civil Aviation Authorities of the South American Region (RAAC/17) agrees to: a) support the implementation of SSP/SMS in the SAM Region States in order to achieve the targets set out in the GASP and SAMSP, taking into account the challenges set forth in Paragraph 2.15 of WP/04; and b) strengthen the AIG agencies that are still within the structure of the CAAs and support the linking of independent AIG agencies to the SSP, based on the analysis in Paragraph 2.16 of WP/04		Expected Impact <input type="checkbox"/> Political/Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Operational/Technical	
Why: So that the States can comply with the SSP/SMS targets of the SAMSP and manage their civil aviation systems in an efficient, robust manner and based on the management of safety risks, contributing to the continuous improvement and sustainability of their safety oversight systems			
When: <i>After the approval of the conclusion</i>	Status: <input checked="" type="checkbox"/> Valid <input type="checkbox"/> Superseded <input type="checkbox"/> Completed		
Who: <input checked="" type="checkbox"/> States <input type="checkbox"/> Secretariat <input type="checkbox"/> Other (Specify):			

Targets of GASP and SAMSP Goals 4, 5 and 6

2.20 With regard to the targets of GASP and SAMSP Goals 4, 5 and 6, the Meeting is informed of the following actions:

- **Goal 4 - Increase collaboration at the regional level**
 - States having difficulty in achieving the targets related to effective implementation (EI), national safety plans (NASP), and SSP, are receiving support from the SAM Office and the SRVSOP. Likewise, **Appendix A** to this working paper presents to RAAC/17 a systemic support programme, primarily for States facing difficulties (Target 4.1).

- Target 4.2, which calls for States to provide information on safety risks to ICAO, RASG-PA, SRVSOP and ARCM by 2025, will be channelled through the implementation of the SAMSP edition 2023-2025, starting this year.
- **Goal 5 - Expand the use of industry programmes and safety information-sharing networks by service providers**
 - Target 5.1, which calls for maintaining an increasing trend in industry contribution to safety information-sharing networks for States and Regions in order to assist them in the development of their NASPs, will be managed with industry through the support of the SAM Office, RASG-PA, SRVSOP and ARCM, on the basis of the implementation of the SAMSP edition 2023-2025, starting this year.
- **Goal 6 - Ensure the availability of the appropriate infrastructure to support safe operations**
 - Target 6.1, which calls for maintaining by 2025 an increasing trend of States with air navigation and airport infrastructure that meets relevant ICAO standards, is being addressed through the Regional Air Navigation Plan Vol. III and the National Air Navigation Plans of States, which seek to achieve implementation of the basic building blocks (BBBs) and ASBU and non-ASBU solutions, applicable to the SAM Region.

3. **Suggested action**

3.1 The RAAC/17 Meeting is invited to:

- a) take note of this working paper and **Appendix A**; and
- b) review, discuss, and, if appropriate, approve the draft conclusions aimed at improving safety and attaining the goals and targets of the GASP and SAMSP.

- END -

APPENDIX A

CONTINUOUS IMPROVEMENT PROGRAMME TO STRENGTHEN CIVIL AVIATION SYSTEMS OF SAM STATES

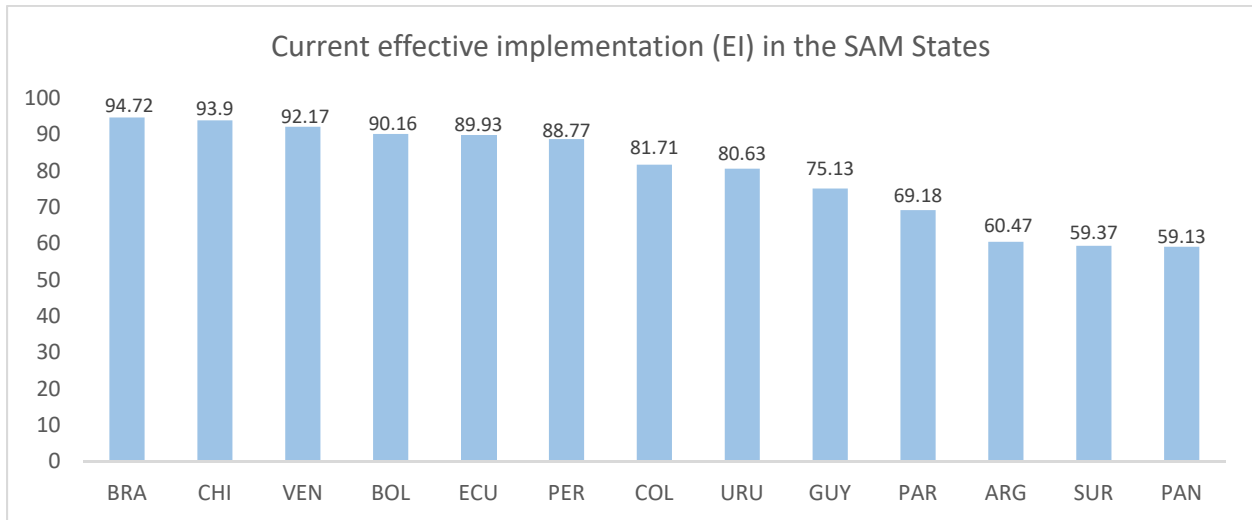
1. Introduction

Goal 2 of the Global Aviation Safety Plan (GASP) and the SAM Region Safety Plan (SAMSP), Edition 2023-2025, calls on all States to strengthen their safety oversight capabilities in accordance with the following milestones concerning effective implementation (EI): 75% by 2024; 85% by 2026 and **95% by 2030**.

This goal is aimed at individual States and seeks to strengthen their safety oversight capabilities. It also calls on States to make progress in the implementation of the eight critical elements (CE) and to address the institutional challenges they face in the implementation of a safety oversight system.

In order to support SAM States in strengthening their civil aviation and safety oversight systems, it is necessary to implement a continuous improvement programme so that States may gradually achieve EI goals within the established timeframe. For those States that have already achieved the set targets, the programme would give them the opportunity to verify the sustainability of their civil aviation and safety oversight systems over time.

The figure below shows the EI status of the eight (8) CEs in SAM States.



In order for SAM States to have clear guidance on where to direct their efforts and resources and gradually achieve Goal 2 and its associated SAMSP targets, the table below shows progressive milestones.

EI improvement indicators and targets

States with effective implementation (EI):	% improvement of effective implementation (EI)				
	2022	2024	2026	2028	2030
Below 65% Group 1	EI = 70%	EI = 75%	EI = 85%	EI = 90%	EI = 95%
Between 65 and 74.99% Group 2	EI = 75%	EI = 80%	EI = 85%	EI = 90%	EI = 95%
Between 75 and 80% Group 3	EI = 80%	EI = 85%	EI = 90%	EI = 95%	EI = 95%
Above 80% Group 4	EI = 85%	EI = 90%	EI = 95%	EI = 95%	EI = 95%

2. Objective

The objective of this programme is to provide ongoing technical assistance to SAM States to help them strengthen their civil aviation and safety oversight systems and achieve the targets set out in the GASP and SAMSP.

3. Scope

The programme is primarily geared to those States that have difficulty in implementing an effective civil aviation and safety oversight system and need support to achieve the GASP and SAMSP goals. However, this programme is also recommended for States that have achieved GASP and SAMSP goals but have not received a full audit under the Universal Safety Oversight Audit Programme (USOAP) Continuous Monitoring Approach (CMA) for more than 5 years.

The programme will cover the protocol questions (PQs) of the USOAP CMA, but may be extended to the PQs of the SSP through the maturity level matrices.

4. Phases of the programme

The programme comprises the following phases:

Phase 1	High-level commitment of States <ul style="list-style-type: none"> Establishment of a strategy to achieve Goal 2 and its associated GASP and SAMSP targets. High-level meetings - Director General (DG) level or, if requested by the DG, ministerial level Increased interaction between the technical areas of the States and the SAM Office
Phase 2	Technical assistance missions for the corresponding analysis <ul style="list-style-type: none"> On-site missions to analyse the protocol questions (PQs) in all audit areas Reporting
Phase 3	Development of the work plan

	<ul style="list-style-type: none"> • Joint development of the work plan: SAM States/experts • Submission of the work plan by the States
Phase 4	Implementation and follow-up of the work plan <ul style="list-style-type: none"> • Implementation of the work plan by States • Virtual follow-up of the work plan by the SAM Office using the PRO SAM 001 methodology
Phase 5	Sustainability of civil aviation and safety systems <ul style="list-style-type: none"> • Implementation of a system that allows States to sustain civil aviation and safety systems over time

PRO SAM 001: Procedure to monitor and support the completion of corrective action plan (CAPs) and the review of priority protocol questions (PPQs) of SAM States

5. Description of phases

Phase 1: High-level commitment of States

The strategy proposed in this programme aims to provide concrete solutions to States' problems in order to develop a sustainable air transport system with all the appropriate elements for its proper functioning, such as primary aeronautical legislation, specific operating regulations, infrastructure, procedures, qualified and competent human resources, risk-based oversight activities, and resolution of safety issues. However, successful implementation requires political will and commitment from States.

The first Phase of this programme is normally under the direct responsibility of the Regional Director of the ICAO South American Office, due to its motivation in fostering political will and commitment at the highest level of governments, in support of the Director General of the Civil Aviation Authority of each State. Therefore, this Phase seeks a high-level commitment from SAM States as an essential element to ensure success and also to determine which States require (or not) the assistance of the SAM Office and have (or do not have) the political will and commitment to provide resources to their civil aviation administrations and thus be able to prioritise technical assistance.

Phase 2: Technical assistance missions for the corresponding analysis

Face-to-face technical assistance missions will be scheduled in order to conduct the corresponding analysis of the situation in each State, and be able to design a support strategy.

Phase 3: Development of the work plan

The work plan will be developed by State experts together with the experts in charge of technical assistance.

The development of the work plan will allow the SAM Office and States to determine the level of effort and resources required for its implementation.

Phase 4: Implementation and follow-up of the work plan

The implementation of the work plan is key to the success of the programme and thus the commitment of the States will be sought for this phase of the programme.

The follow-up of the work plan will be carried out by the SAM Office through PRO SAM 001.

Phase 5: Sustainability of civil aviation and safety systems

Once the work plan has been completed, States must ensure the sustainability of what has been achieved. To this end, the implementation of a system to maintain the levels of effective implementation achieved over time will be recommended.

6. Mission schedule and start of the programme

The mission schedule is based on the current USOAP CMA audit cycle of each State and its EI percentage. Accordingly, States with a longer cycle and lower EI would receive the first technical assistance missions.

2023			
State	Type and date of last audit Audit cycle	% effective implementation (EI)	Tentative date for the technical assistance mission and start of the programme
1. Venezuela	<ul style="list-style-type: none"> CSA: January 2009 More than 14 years 	92.17	24 - 28 april
2. Paraguay	<ul style="list-style-type: none"> CSA: May 2009 More than 13 years 	69.18	31 july - 04 august
3. Guyana	<ul style="list-style-type: none"> CSA: February 2007 More than 16 years 	75.13	06 - 10 november

2024			
State	Type and date of last audit Audit cycle	% effective implementation (EI)	Tentative date for the technical assistance mission and start of the programme
4. Panama	<ul style="list-style-type: none"> CMA: August 2015 More than 7 years 	59.13	19 - 23 february
5. Uruguay	<ul style="list-style-type: none"> CSA: December 2008 More than 14 years 	80.63	06 - 10 may
6. Chile	<ul style="list-style-type: none"> CSA: May 2008 More than 14 years 	93.9	12 - 16 august
7. Colombia	<ul style="list-style-type: none"> CSA: June 2017 and April/May 2022 More than 5 years in LEG, ORG, PEL, OPS, AIR, ANS Nearly one (1) year in AIG and AGA 	81.71	11 - 15 november

2025			
State	Type and date of last audit Audit cycle	% effective implementation (EI)	Tentative date for the technical assistance mission and start of the programme
8. *Suriname	<ul style="list-style-type: none"> • CSA: December 2009 • More than 13 years 	59.37	10 - 14 february
9. Peru	<ul style="list-style-type: none"> • CMA: October 2014 • More than 8 years 	88.77	12 - 16 may
10. Bolivia	<ul style="list-style-type: none"> • CMA: October 2019 • More than 3 years 	90.16	11 - 15 august

- Although ***Suriname** has an audit cycle of more than 13 years, it was scheduled for the technical assistance mission in 2025 as it has just started a regional technical assistance project to strengthen its civil aviation system with the participation of the SAM Office and ICAO Headquarters.
- **Argentina** has not been considered for technical assistance missions because it received a CMA audit in June/July 2022 and an ICVM on 13-17 February 2023. At present, it is developing and implementing its CAPs. However, an on-site mission is recommended when it notifies the completion of its CAPs in order to subsequently start the virtual CAP follow-up programme using the PRO SAM 001 methodology.
- **Brazil** and **Ecuador** have not been considered either for technical assistance missions as they will receive CMA audits in June and September of this year, respectively. In addition, Brazil will receive an SSP initial assessment (SSPIA) in May this year. For the aforementioned States, it is proposed to use the information from the respective audits to continue the virtual follow-up of the CAPs, using the PRO SAM 001 methodology.

Documentation

For on-site technical assistance missions and for virtual follow-up through PRO SAM 001, the 2020 USOAP CMA audit protocols will be used.

Methodology

On-site missions will be announced through an official State letter from the SAM Office one month in advance, once this programme has been approved. The letter will be accompanied by the plan of activities indicating the composition of the mission team and the details of the experts, including their name and e-mail address.

Teams for face-to-face technical assistance missions will consist of experts from all audit areas. Team leaders will be designated to coordinate mission planning and activities with the national continuous monitoring coordinators (NCMCs) of the States.

The missions will have an opening and a closing session. The opening session will provide information on the activities to be carried out, while the closing session will present the results of the mission, recommendations and next steps to be taken.

In the face-to-face missions, the experts will review the PQs with their counterparts and request objective evidence for each issue being reviewed, and may at the same time offer recommendations for the improvement of the PQs, *e.g.* to improve requirements, procedures, programmes, mechanisms, equipment, systems, etc.

Once the work plan has been submitted by the States, follow-up will take place virtually using the PRO SAM 001 methodology, which consists of holding monthly virtual meetings to analyse the progress made by the States in completing the work plan.

Relationship between this programme and ICAO USOAP CMA activities

The results of this programme will bear no relationship with the USOAP CMA.

To avoid conflicts with USOAP CMA activities, the experts in charge of technical assistance missions will not issue judgmental values or ratings on PQ compliance, such as satisfactory or unsatisfactory, but will instead offer only recommendations for improvement of the issues observed.

The information generated on the basis of this programme will be confidential and for the use of the SAM Office and the States involved only. This information will not be shared with any ICAO programme, other Regions or regional bodies outside the SAM Office, SRVSOP and ARCM.

Brief description of PRO SAM 001: Procedure to monitor and support the completion of corrective action plans (CAPs) and the review of priority protocol questions (PPQ) of SAM States

The PRO SAM 001 is a SAM Office procedure that was developed to support States in completing their CAPs and reviewing priority protocol questions (PPQs). To this end, States were divided into four (4) groups. Each group is supervised by a regional officer with safety functions and qualified in USOAP CMA activities.

Monthly meetings are normally scheduled for States to present their progress, either on the CAPs or on the self-assessment of priority protocol questions (PPQs).

During the monthly meetings, the needs of States are identified and technical assistance activities in specific areas are coordinated.

Once the situation in each State is known through on-site technical assistance missions, and the respective work plan is submitted, PRO SAM 001 would serve as a tool for Phase 4 on implementation and follow-up of the work plan.

If necessary, face-to-face follow-up missions could be scheduled by mutual agreement between the SAM Office and the States to verify progress and provide on-site assistance.