



**Twenty-first Meeting of the CAR/SAM Regional Planning and Implementation Group (GREPECAS/21)**  
 Santo Domingo, Dominican Republic, 15 – 17 November 2023

**Agenda Item 3: Global and Regional Developments**

**3.2 Work report on the CAR/SAM Regional Air Navigation Plan Volume III and Regional Progress**

**PROGRESS OF THE CAR/SAM REGIONAL AIR NAVIGATION PLAN - VOLUME III**

(Submitted by the Secretariat)

| <b>SUMMARY</b>   |   |
|--|---|
| <p>This paper outlines the activities undertaken to continue with the insertion of data and baselines of KPIs in the initial version of the CAR/SAM RANP Volume III, approved by GREPECAS/20. The activities carried out in the CAR and SAM Regions to strengthen the capacities of the States for this activity are presented. The challenges identified are analyzed and actions are proposed to promote the active management of the said document. A revision (version 0.1) for the Volume III, incorporating data from the CAR Region, is submitted for approval by GREPECAS.</p> |   |
| <i>Action:</i>   | <ul style="list-style-type: none"> <li>Suggested Actions are included in Section 4</li> </ul>   |
| <i>Objectives Strategic:</i>   | <ul style="list-style-type: none"> <li>Safety</li> <li>Air Navigation Capacity and Efficiency</li> <li>Environmental sustainability</li> </ul>  |
| <i>References:</i>   | <ul style="list-style-type: none"> <li>International Civil Aviation convention</li> <li>Final Report of the Twentieth Meeting of the Caribbean and South America Regional Planning and Implementation Group (GREPECAS/20), Salvador, Brazil, November 16-18, 2022</li> <li>ICAO Global Air Navigation Plan – GANP. Doc. 9750</li> <li>Handbook on the Global Performance of the Air Navigation System. Doc. 9883</li> </ul> |

**1. Background**

1.1 During the GREPECAS/20 meeting, the process of formulating Volume III of the CAR/SAM Regional Air Navigation Plan (RANP) was reported. It was reported that ICAO formed an interregional Working Group for the implementation of a standardized template for Volume III of the CAR/SAM RANP, with a performance-based approach. As a result of this Working Group, a pilot project was set up in the CAR/SAM Regions, with the aim of facilitating the implementation of this document in all ICAO Regions.

1.2 Between 2019-2022, activities were carried out with States/Territories and Organizations to disseminate the ICAO Template and reinforce the concepts of performance-based planning, in order to build Volume III of the RANP. In these activities, the Secretariat noted the need to strengthen, first, Volumes I and II of the RANP and then to work on the formulation of Volume III.

1.3 In this process, through workshops and teleconferences, opportunities for improvement have been identified for the text of the template and for the Schedules, including proposals for new columns and explanatory texts, so that they can be associated with the concepts of the GANP, as well as facilitate the interaction of planners with the tools (tutorials, catalogues, etc.). dashboards, AN-SPA, etc.), provided on the GANP website.

1.4 The GREPECAS Meeting /20 noted that the Secretariat together with the States, after three years of work, formulated the initial version (version 0) of Volume III of the e-ANP CAR/SAM, consequently after reviewing the content presented, the Meeting extended its approval of the Conclusion shown in **Appendix A**.

1.5 To improve the understanding of the CAR/SAM ANP, Volume III, Information paper GREPECAS21 - NI/05 "Effective Implementation of the CAR/SAM ANP Volume III" sets out the fundamentals of the GANP, its relationship to the Global Safety Plan (GASP), the concept of three GANP frameworks, and the six-step approach to performance-based planning.

## 2. Analysis

2.1 The CAR/SAM regions have developed initial competencies for the formulation of the Tables in Volume III. However, it is required by the States to insert data from KPI indicators at the baseline level, in order to advance in step 3 "Quantify objectives" of the performance-based planning method.

2.2 In Lima, Peru, from June 12 to 15, 2023, the CAR/SAM Workshop was held to follow up on the preparation of Volume III of the Regional Air Navigation Plan, with the participation of delegates from 15 States and organizations, in person and virtually. An Officer from ICAO Montreal Headquarters also participated. The material of the discussions and presentations of the event can be found at the following link:

<https://www.icao.int/SAM/Pages/MeetingsDocumentation.aspx?m=2023-RANP-VOL3&t=1>

2.3 The objective of the Workshop was to continue with the assistance of the Secretariat, including the analysis of the new key performance indicators in the area of operational safety, in accordance with the Seventh Edition of the Global Air Navigation Plan (GANP). At the same time, the revision of the National Air Navigation Plans (PNNA) of the States was addressed, considering the new elements, areas and sub-areas of focus of the GANP.

2.4 The following paragraphs depict the specific activities of the CAR Region and the SAM Region;

### CAR Region

2.5 At the Eighth Meeting of the Working Group on North America, Central America and the Caribbean (NACC/WG/8) ( Mexico City, Mexico, August 29 to September 1, 2023), States decided to create an Ad-hoc Group to work on the mapping of available information, with the aim of supporting the measurement and evaluation process of the data available for the KPIs of the GANP, with identification of the metadata (type of data, date, time, system that obtained it, who obtained it, etc.).

2.6 In addition, several States in the CAR Region have begun the process of developing their National Air Navigation Plans (NANP), with a work strategy that includes as a first phase the evaluation of the level of implementation of the Basic Building Blocks (BBB), with the aim of identifying the level of implementation of the mandatory services stipulated in the Annexes of the Chicago Convention and identifying the priority projects that need to be implemented must be included in the Air Navigation Plans.

2.7 The second phase of the strategy is the assessment of the level of implementation of the ASBU elements of blocks 0 and 1 of the GANP. This evaluation was carried out at the level of the entire CAR region, concluding that the implementation of some ASBU priority elements is necessary in order to continue with a continuous implementation that covers the entire region due to the interrelationship of one element with another, which means that the implementation of one element requires another element that is already operating.

2.8 Thus, the following elements are identified as a priority to be implemented in the region, especially CAR, since they are enablers of development and support the implementation of other modules:

- a) AMET-B0/1: Enables other MET elements and operational elements.
- b) ASUR-B0/1: is the number one technological enabler that supports the implementation of operational modules in the area of Air Traffic Management and Airport Management.
- c) FICE-B0/1: Supports capacity and efficiency.
- d) COMI-B0/7-ATS: Supports the exchange of aeronautical and meteorological information.

2.9 Based on the information in the items presented, it is indicated that the regional priorities for the CAR Region are:

- a) Regional implementation of ADS-B and ensuring surveillance data coverage throughout the region.
- b) The AMHS aeronautical messaging system (almost implemented in the entire region)
- c) Strengthen and secure communications infrastructure for the exchange of information between NAM/CAR States and other regions.
- d) Desirable: NAM/ICD and AIDC, provided that the necessary monitoring infrastructure is in place to support this implementation.
- e) Integrate MET and AIM information.

2.10 As the third phase of the development of the air navigation plans, the CAR region is working on the evaluation of the key performance indicators individually by each State with the aim of feeding the e-ANP Volume III and developing its NANPs in parallel.

2.11 In accordance with the above, the NACC/WG/8 meeting approved a conclusion for the CAR States to submit information for the corresponding Tables of Volume III of the CAR/SAM RANP. This data has been inserted by the Secretariat, generating a revision proposal for Volume III (version 0.1), as presented in **Appendix B** to this paper. Accordingly, the following draft conclusion is proposed:

|   |   |
|---|---|
| <b>CONCLUSION</b>   |   |
| <b>GREPECAS/21/XX</b>   | <b>APPROVAL OF VERSION 0.1 OF CAR/SAM RANP VOLUME III</b>   |
| <b>That:</b><br>Version 0.1 ( <b>Appendix XX to this report</b> ) of the CAR/SAM RANP Volume III, including data and information from the States of the CAR Region, is approved.  | <b>Expected Impact:</b><br><input checked="" type="checkbox"/> Politics/ Global<br><input checked="" type="checkbox"/> Inter-regional<br><input checked="" type="checkbox"/> Economics<br><input checked="" type="checkbox"/> Environmental<br><input checked="" type="checkbox"/> Technical/ operational |
| <b>Why:</b><br>To update the information necessary for the planning of improvements in air navigation services and facilities, through an amendment to Volume III of the CAR/SAM RANP, including data and information from the CAR Region, in accordance with the established procedure for Volume III. |   |
| <b>When:</b> Immediately  | <b>Status:</b> <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed   |
| <b>Who:</b> <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO <input type="checkbox"/> Other:   |   |

### SAM Region

2.12 In the SAM Region, administrations are experiencing difficulties in organizing stable, multidisciplinary teams for regional planning, due to staff shortages. Although these limitations are recognized for the Region, in Argentina EANA has improved its processes with KPI indicators. In Colombia, a work team is being organized to promote the calculation of KPIs and a technical visit by AEROCIVIL specialists has recently been made to the headquarters of CGNA Brazil. Chile has mapped in great detail the KPIs that are relevant to its state, as well as the data sources and suppliers. For its part, Venezuela is collecting and reviewing data for KPIs as part of updating its National Air Navigation Plan.

2.13 To date, Peru is developing calculations for six GANP KPIs covering Lima and Cusco Airports, and by 2024 it has planned to expand calculations to another 10 airports. For the third consecutive year, Brazil has published its Performance Report covering nine KPIs, as well as the first State to include indicators in the area of operational safety.

2.14 In addition, the SAM/IG ATFM service development team has prepared the OPSAM Dashboard for IATA's Winter 2023 season, including preliminary calculations<sup>1</sup> for KPI 10 "Airport Peak Performance" (Maximum Throughput R60<sup>2</sup>) for 8 States.

2.15 The elaboration of the KPI10 of the GANP has been obtained, in a preliminary manner, based on information provided by the ATFM services for proposed traffic demand and executed demand at selected airports. This indicator, by its very definition, reflects progress in implementations in the key performance area (KPA) of "capacity". According to the GANP, KPI10 is associated with the implementation of 4 operational modules (APTA, CSEP, RSEQ, WAKE).

<sup>1</sup> This KPI10 indicator has already been promulgated in Volume III by Argentina, Brazil and Peru. For the rest of the SAM states that appear on the dashboard, the aforementioned KPI is still a preliminary calculation, given that the quality of the data is being improved and processes are being adjusted with the data providers.

<sup>2</sup> Defined as the 95th percentile of the number of hourly operations recorded at an airport, in the "continuous" hours ordered from the least busy hour to the busiest hour. It can be calculated for arrivals, departures, or arrivals + departures.

2.16 See KPI10 calculations in the OPSAM Dashboard (page 12), at the following link:

<https://app.powerbi.com/view?r=eyJrIjoiaMDZiNjU0MzktOGQ1Yy00ZWJkLTgwMGUtZTQ0NTU2MzVjOGQ0liwidCI6IjI2MjI4ZGNhLTcwZDMtNDkxNy04MjMzLTA4M2FjMzY1NWE5MSJ9>

2.17 In terms of training activities, the CGNA of Brazil delivered the Course/Workshop on Performance Indicators of the GANP (Rio de Janeiro, July 3-14, 2023). This activity was aimed at strengthening and/or generating competencies for the specialists in charge of the management of the CAR/SAM RANP, Volume III, as well as the National Plans. Delegates from 9 States of the SAM Region participated.

### 3. Tasks and challenges identified for the CAR/SAM Region

3.1 In accordance with the above, assistance has been maintained to the States, Organizations, ANSPs of the CAR/SAM Region and work has been done together with the industry. It should be noted that some air navigation implementations are in progress, including the ASBU Airport Accessibility (APTA) and Free Route Operations (FRT0) modules. It is expected that this implementation may generate additional tasks for the staff who are also assigned to the planning and support matters of Volume III of the ANP CAR/SAM. On the other hand, ATFM services are already handling traffic demand data that is used as input to generate indicators of the *capacity* area.

3.2 To date, most States are in the process for the formulation of KPI baselines. The provision of data by States/Organizations should be increased. Therefore, moving forward with Volume III requires redefining the tasks of GREPECAS members, addressing issues identified in the process, including:

- Understanding of the relevance of the ANP CAR/SAM Regional Plan as an instrument for global planning and for the establishment of international responsibilities, and of the relationship of the Regional Plan with the law for the establishment of aeronautical fees.
- Lack of cooperation between the State air navigation planning body and the data providers that are necessary for the formulation of KPIs. In some cases, both depend on the same administration, however, the delivery of data is not facilitated.
- Insufficient resources, knowledge and/or technology to manage *simple* indicators and *complex* indicators (e.g. KPI17 and KPI19 need to be automated).
- Need to improve the cost-benefit analysis in the decision-making process for the implementation of elements of improvement in the air navigation area.
- Reorient regional planning to introduce the six-step method as a reference for GREPECAS, so that it can be verified that the agreed improvement elements for air navigation deliver the expected results.

3.3 In this context, Working Table Number 2 of GREPECAS/21 should identify the necessary tools for the NACC and SAM Offices to be able to properly assist States/Organizations.

### 4. Suggested action

4.1 The Meeting is invited to:

- a) Review the information set out in Appendix B and, if applicable, approve the draft Conclusion presented in paragraph 2.11;

- b) Analyze this working paper and, in addition, Information paper NI/05;
- c) Analyze and discuss in Working Table number 2 the specific challenges faced in the effective implementation of Volume III of the CAR SAM RANP; and
- d) Propose and, if necessary, approve concrete actions to support GREPECAS in the effective implementation of Volume III.

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## Appendix A

|  |   |  |
|--|---|--|
| <b>CONCLUSION</b><br>GREPECAS/20/07  |   | <b>APPROVAL OF THE INITIAL VERSION (VERSION 0) OF VOLUME III OF THE CAR/SAM ANP, AND FOLLOWING ACTIONS FOR THE MANAGEMENT AND DEVELOPMENT OF PERFORMANCE-BASED PLANNING</b>  |
| <b>What:</b><br>That,<br>;<br>a) GREPECAS approve the initial version (version 0) of Volume III of the CAR/SAM ANP (Appendix B of the report), formulated based on the ICAO Council Template, and aligned with Recommendation 4.3/1, d), of the AN-Conf 13;<br>b) GREPECAS approve the Programme for the management of Volume III of the CAR/SAM ANP (Appendix B of the report), which allows the sustainable implementation of performance-based planning; and<br>the States implement work teams to develop data collection activities and management of GANP KPIs as a basis for populating the data of the Planning Tables of Vol. III, with the assistance of the Secretariat to report in GREPECAS/21. |   | <b>Expected impact:</b><br><input type="checkbox"/> Political / Global<br><input checked="" type="checkbox"/> Inter-regional<br><input type="checkbox"/> Economic<br><input type="checkbox"/> Environmental<br><input checked="" type="checkbox"/> Operational/Technical |
| <b>Why:</b><br>To implement the six-step method for performance-based planning in the CAR/SAM Regions and complete the data population process of the States/Territories and, therefore, Volume III Management.  |   |  |
| <b>When:</b><br>a) immediately<br>b) report for PPRC/05<br>c)  | <b>Status:</b> <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed |  |
| <b>Who:</b> <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO <input type="checkbox"/> Other:  |   |  |

APÉNDICE B / APPENDIX B  
(English only)

**TEMPLATE APPROVED BY THE COUNCIL**  
**on 18 June 2014**

**CAR/SAM AIR NAVIGATION PLAN**

**VOLUME III**

**VERSION 0.1**

**(Draft submitted for approval by GREPECAS /21)**

Note 1: The text highlighted with **yellow** indicates general guidance supplied by ICAO HQ, to fill out the template.

Note 2: The text highlighted with **green** indicates improvements proposed by Secretariat for the **template** (still to be validated by ICAO HQ), in order to facilitate the understanding of the Volume III paragraphs and tables, in terms of the properly application of the performance-based planning.

Note 3: Regarding the editorial presentation of the proposed changes (applied to version 0), the reviewed text is arranged to show deleted text with a line through it and new text highlighted with **grey**, as shown below:

- |   |                                   |
|---|-----------------------------------|
| 1. <del>Text to be deleted is shown with a line through it.</del>   | text to be deleted                |
| 2. <b>New text to be inserted is highlighted with grey shading.</b>   | new text to be inserted           |
| 3. <del>Text to be deleted is shown with a line through it</del> followed by the replacement text which is highlighted with grey shading. | new text to replace existing text |

**CAR/SAM AIR NAVIGATION PLAN**

**VOLUME III**

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    Table PMP III-3 – List of KPIs by performance objective and KPA for the (NAME) Region

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    Table PMP III-7 – Status of deployment of the selected operational improvements of the ASBU elements / Operational Improvements for the (NAME) Region

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    Table PMP III- (NAME Region) - 1 – List of CTA/TMA in the (NAME) Region

**CAR/SAM ANP, VOLUME III**  
**PART 0 – INTRODUCTION**

**1. INTRODUCTION**

1.1 The background to the publication of ANPs in three volumes is explained in the Introduction in Volume I. The procedure for amendment of Volume III is also described in Volume I. Volume III contains dynamic/flexible plan elements related to the application of a performance-based approach for a cost-effective and benefit-driven modernization of the air navigation system in line with the Global Air Navigation Plan (GANP).

1.2 Collaborative decision-making is key for a cost-effective modernization of the air navigation system and ensures that all concerned aviation stakeholders are involved and given the opportunity to influence decisions in order to reach defined performance objectives. Volume III guides the aviation community in the application of performance management process and identification of relevant and timely operational improvements to a given region's air navigation system including some within the Aviation System Block Upgrade (ASBU) framework.

1.3 The information contained in Volume III is, therefore, related to:

- Planning: objectives, priorities, targets and needs planned at regional or sub-regional levels;
- Monitoring and reporting: performance and implementation monitoring of the agreed targets. This information should be used as the basis for reporting purposes (i.e.: global and regional air navigation reports and performance dashboards); and/or
- Guidance: providing regional guidance material for the implementation of specific system/procedures in a harmonized manner.

1.4 GREPECAS is responsible for managing and updating Volume III on a regular basis.

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**CAR/SAM ANP, VOLUME III**  
**PART I - GENERAL PLANNING ASPECTS (GEN)**

## 1. PLANNING METHOD

1.1 A performance-based approach is results-oriented, helping decision makers set priorities and determine appropriate trade-offs that support optimum resource allocation while maintaining an acceptable level of safety performance and promoting transparency and accountability among stakeholders.

1.2 The Thirteenth Air Navigation Conference recommended the ICAO encourage the planning and implementation regional groups (PIRGs) to embrace a performance-based approach for implementation and adopt the six-step performance management process, as described in the Manual on Global Performance of the Air Navigation System (Doc 9883), by reflecting the process in Volume III of all regional air navigation plans. Recommendation 4.3/1 — Improving the performance of the air navigation system refers.

1.3 Although there are several ways to apply a performance-based approach, ICAO advocates for a globally harmonized performance management process based on six well-defined steps. The goal of this cyclic six-steps method is to identify optimum solutions based on operational requirements and performance needs so that the expectations of the aviation community can be met by enhancing the performance of the air navigation system and optimizing allocation and use of the available resources.

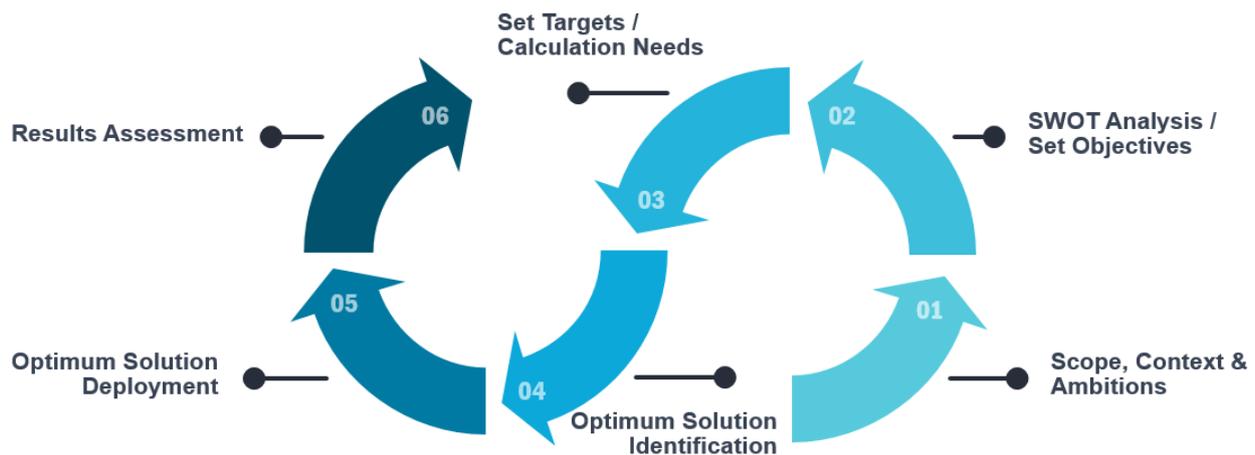


Figure 1 Six-step performance management process

1.4 Steps 1 and 2 serve to know your system, its strengths, weakness, opportunities and threats as well as how it is performing in order to set objectives. The catalogue of performance objectives that is part of the GANP global performance framework facilitates the definition of objectives.

1.5 Based on these objectives, targets can be set in step 3. An analysis of this data leads to the identification of potential solutions, in step 4, to achieve the targets by addressing the weakness and threats of the system. Once a set of potential solutions have been identified, a cost-benefits analysis, environmental impact assessment, safety assessment and human factor assessment should be performed to identify the optimum solution. In the GANP performance framework, a list of KPIs, linked to the relevant objectives in the performance objectives catalogue, is provided to set targets through the quantification of objectives (See list below). A list of potential solutions to be consider as part of step 4 is the ASBU framework with its functional description of the operational improvements and their associated performance benefits.

|       |                                      |       |                               |
|-------|--------------------------------------|-------|-------------------------------|
| KPI01 | Departure punctuality                | KPI11 | Airport throughput efficiency |
| KPI02 | Taxi-out additional time             | KPI12 | Airport/Terminal ATFM delay   |
| KPI03 | ATFM Slot adherence                  | KPI13 | Taxi-in additional time       |
| KPI04 | Filed flight plan en-route extension | KPI14 | Arrival punctuality           |
| KPI05 | Actual en-route extension            | KPI15 | Flight time variability       |
| KPI06 | En-route airspace capacity           | KPI16 | Additional fuel burn          |
| KPI07 | En-route ATFM delay                  | KPI17 | Level-off during climb        |
| KPI08 | Additional time in terminal airspace | KPI18 | Level capping during cruise   |
| KPI09 | Airport peak capacity                | KPI19 | Level-off during descent      |
| KPI10 | Airport peak throughput              |       |                               |

1.6 Step 5 manages a coordinated deployment of the agreed solution by all stakeholders based on the previous steps. Regional plans might need to be developed for the deployment of solutions by drawing on supporting technology requirements.

1.7 Finally, step 6 consists of monitoring and reporting the performance of the system after the full deployment of the solution.

1.8 This is an iterative planning process, which may require repeating several steps until a final plan with specific regional targets is in place. This planning method requires full involvement of States, service providers, airspace users and other stakeholders, thus ensuring commitment by all for implementation.

#### *Review and evaluation of air navigation planning*

2.1. The progress and effectiveness against the priorities set out in the regional air navigation plans should be annually reported, using a consistent reporting format, to ICAO.

2.2. Performance monitoring requires a measurement strategy. Data collection, processing, storage and reporting activities supporting the identified global/regional performance metrics are fundamental to the success of performance-based approaches.

2.3. The air navigation planning and implementation performance framework prescribes reporting, monitoring, analysis and review activities being conducted on a cyclical, annual basis.

#### *Reporting and monitoring results*

2.4. Reporting and monitoring results will be analyzed by the PIRGs, States and ICAO Secretariat to steer the air navigation improvements, take corrective actions and review the allocated objectives, priorities and targets if needed. The results will also be used by ICAO and aviation partner stakeholders to develop the annual Global Air Navigation Report. The report results will provide an opportunity for the international civil aviation community to compare progress across different ICAO regions in the establishment of air navigation infrastructure and performance-based procedures.

2.5. The reports will also provide the ICAO Council with detailed annual results on the quality of service provided worldwide as well as the performance areas which require more attention. This will serve as input for the triennial policy adjustments to the GANP and its priorities.

## CAR/SAM ANP, VOLUME III

### PART II – PERFORMANCE MANAGEMENT PLANNING AND ANS IMPLEMENTATION (PMP)

#### 1. STEP 1: DEFINE SCOPE, CONTEXT AND SET AMBITIONS

##### *General*

1.1 The purpose of Step 1 is to reach a common agreement on the scope and (assumed) context of the regional air navigation system on which the performance management process will be applied, as well as a common view on the general nature of the expected performance improvements.

##### *Geographical scope*

1.2 The geographical scope is defined in Volume I and in particular in the following tables:

- Table GEN I-1 — List of Flight Information Regions (FIR)/Upper Information Regions (UIR) in the Region
- Table ATM I-1 — Flight Information Regions (FIR)/Upper Flight Information Regions (UIR) of the Region
- Table SAR I-1 — Search and Rescue Regions (SRR) of the Region
- Table AOP I-1 — International aerodromes required in the Region
- Table PMP III CAR/SAM - 1 – List of CTA/TMA in the Region

(Optional. Please note that, if it is decided that this level of granularity is required in the Region, the rest of the performance management process will be applied at this level of granularity for consistency purposes. If this table is not developed, the PMP will be applied at an FIR level)

##### *Homogeneous areas and/or major traffic flows*

1.3 The homogeneous ATM areas and major traffic flows/routing areas identified are given in:

- Table GEN II-1 — Homogeneous areas and major traffic flows identified in the Region

##### *Time Horizon*

1.4 Volume III of the CAR/SAM ANP provides short term (**5 years**) and medium term (**10 years**) implementation planning.

##### *Traffic forecast*

1.5 A uniform strategy has been adopted by ICAO for the purpose of preparing traffic forecasts and other planning parameters in support of the regional planning process.

- (include traffic forecast for the Region from ATB)

1.6 In the CAR/SAM Region, in addition to the ICAO forecast, the following forecast from (source) is used for planning purposes. (if applicable)

##### *Political (high level) ambitions*

1.7 The expectations of the global aviation community are defined in 11 Key Performance Areas (KPAs). The GANP considers all these areas through the performance ambitions. Although all these areas are equally important, as they are interrelated and cannot be considered in isolation, some areas are more visible to society than others.

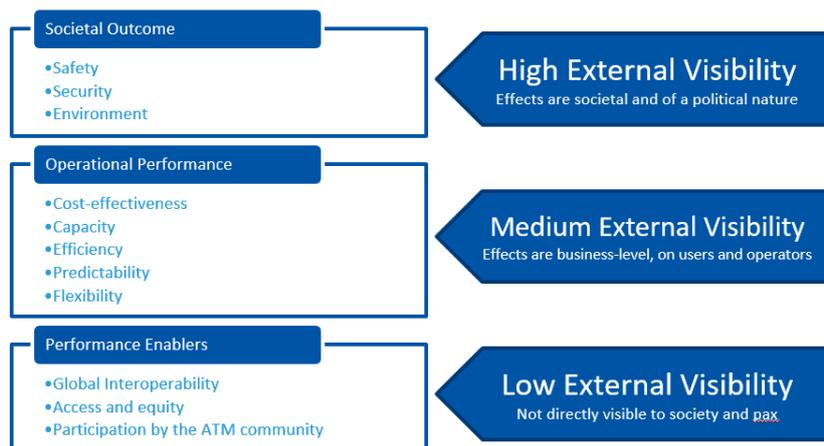


Figure 2 The 11 KPAs of the GANP

1.8 The regional air navigation plan public's perception of safe air travel is key to the prosperity of the aviation sector, which is why, safety is critical when planning the implementation of air navigation operational improvements. To determine if these improvements can be implemented in a safe manner, a safety risk assessment provides information to identify hazards that may arise from, for example:

- a) any planned modifications in airspace usage;
- b) the introduction of new technologies or procedures; or
- c) the decommissioning of older navigational aids.

1.9 A safety risk assessment also enables the assessment of potential consequences. Based on the results of a safety risk assessment, mitigation strategies may be implemented to ensure that an acceptable level of safety performance is maintained. Any operational improvement should be implemented only on the basis of a documented safety risk assessment.

1.10 Fatalities resulting from acts of unlawful interference also affect the public's perception of aviation safety. The cumulative improvements to aviation security globally enhance the safety, facilitation and operational aspects of the international civil aviation system.

1.11 Some safety and environment considerations can be found in Volume I.

1.12 After political consultation the following set of performance ambitions have been prioritized within the (NAME) Region, (DECLARATION) refers.

- (include the set of ambitions in a set of KPAs) TBD

## 2. STEP 2: KNOW YOUR SYSTEM – SWOT ANALYSIS AND REGIONAL OBJECTIVES

### General

2.1 The purpose of Step 2 is to develop a detailed understanding of the performance behaviour of the system (this includes producing a list of opportunities and issues), and to decide which specific performance aspects are essential for meeting the general expectations. The essential performance aspects are those which need to be actively managed (and perhaps improved) by setting performance objectives.

### SWOT analysis

2.2 A SWOT analysis allows the development of an inventory of present and future opportunities and issues (weaknesses, threats) that may require performance management attention.

2.3 A SWOT analysis, requires the identification of:

- Strengths: internal attributes of a system or an organization that can help in the realization of ambitions or in meeting expectations.

- Weaknesses: internal attributes of a system or an organization that are a detriment to realizing ambitions or meeting expectations.
- Opportunities: are external conditions that help in the realization of ambitions or in meeting expectations.
- Threats: external conditions that are a detriment or harmful to realizing ambitions or meeting expectations.

2.4 Once the strengths, weakness, opportunities and threats are identified, action can be taken to target and exploit or remove these factors. The SWOTs in the CAR/SAM Regions can be found in **Table PMP III-1**.

*Regional objectives*

2.5 The performance framework of the GANP includes a catalogue of performance objectives to facilitate the definition of objectives. Considering the objectives defined in the catalogue and based on the SWOT analysis, the CAR/SAM Regions defines, within the key performance areas prioritize in step 1, the objectives within **Table PMP III-2** to be pursued by the States within the Region.

### 3. STEP 3: QUANTIFY OBJECTIVES, SET TARGETS AND CALCULATE NEEDS

*General*

3.1 The purpose of Step 3 is to ensure that objectives are specific, measurable, achievable, relevant and time-bound (SMART) so that targets can be set and needs calculated.

*List of regional indicators*

3.2 The way to ensure that objectives are specific and measurable is by defining indicators. Indicators are the means to quantitatively express performance as well as actual progress in achieving performance objectives. Indicators need to be defined carefully:

- Since indicators support objectives, they should not be defined without having a specific performance objective in mind.
- Indicators are not often directly measures. They are calculated from supporting metrics according to clearly defined formulas. This leads to a requirement for cost data collection and flight data collection. If there is a problem with data availability to calculate these supporting metrics:
  - Set up the appropriate data reporting flows and/ or modelling activities, to ensure all supporting metrics are populated with data as required to calculate the indicator(s) associated with the objective; or
  - If this is not possible, aim for a different kind of performance improvement, by choosing a different performance objective, as constrained by data availability.



3.3 In order to facilitate this task, ICAO has defined a series of KPIs link to the catalogue of performance objectives within the 11KPA. The ICAO KPIs associated to the performance objectives in the CAR/SAM Regions are in **Table PMP III- 3**.

### *Performance baseline in the CAR/SAM Regions*

3.4 The only way of knowing an operational environment and identifying the existence of a problem is by collecting, processing and analysing data. The value of these indicators would be your performance baseline. The performance baseline for the CAR/SAM Regions can be found in **Table PMP III-4**.

### *Regional targets and calculation of needs*

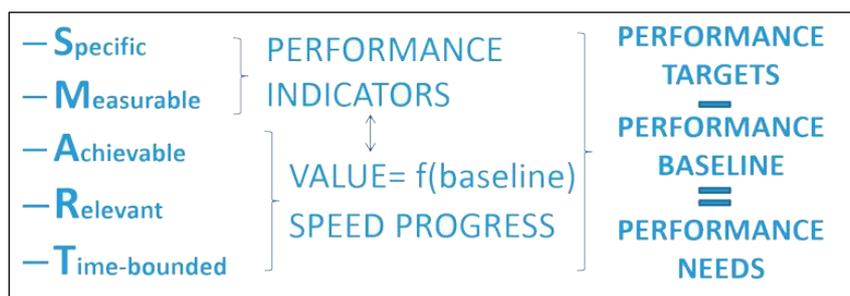
3.5 Performance targets are closely associated with performance indicators, they represent the values of performance indicators that need to be reached or exceeded to consider a performance objective as being fully achieved.

3.6 To understand how challenging it is to reach your target, you should know your performance baseline. The difference between the baseline and the target is called the needs/performance gap.

3.7 The time available to achieve performance objectives is always limited. Therefore, targets should always be time-bounded.

3.8 The target and the time available to reach the target determine the required speed of progress for the performance objective. Care should be taken to set target so that the required speed of progress is realistic.

3.9 Based on the information submitted and after consideration by all stakeholders, the targets and needs in **Table PMP III-5** have been agreed for the CAR/SAM Regions.



## **4. STEP 4: SELECT SOLUTIONS**

### *General*

4.1 The purpose of this step is to combine the knowledge of baseline performance, opportunities and issues with the performance objectives and targets, in order to make decisions in terms of priorities, trade-offs, selection of solutions and resource allocation. The aim is to optimize the decisions to maximize the achievement of the desired/required (performance) results.

### *Select solutions*

4.2 Based on the agreed targets, States should perform a SWOT analysis at each operational environment to develop an inventory of present and future opportunities and issues that may require attention. The list then needs to be analyzed in a performance oriented way, to assess/ quantify the impact of drivers, constraints, impediments, etc. on the objectives under consideration. To what extent, when and under which conditions do these contribute to or prevent the required performance improvements.

4.3 States should consider the operational improvements (ASBU elements) within the ASBU framework as potential solutions to improve the selected objectives/KPIs in the operational environment under analysis. In order to help States with this task, ICAO has developed the Air Navigation System Performance Analysis (AN-SPA) tool, available for free at: <https://www4.icao.int/ganportal/ANSPA/Reports>

4.4 Please note that the ASBUs are a list of potential solutions and therefore it might happen that the optimum solution for the operational environment under analysis is not within this list.

4.5 Once a list of potential solutions has been developed, it is important to do a safety assessment and an environmental impact assessment to analyze the feasibility of implementing that specific solution in the operational environment under analysis. ICAO has developed the following guidance to assist States to perform a safety assessment and an environmental impact assessment:

4.5.1 Safety assessment:

4.5.1.1 The 4th edition of the Safety Management Manual (SMM), was updated and published in October 2018 to provide supporting guidance for Amendment 1 to Annex 19 – Safety Management, including:

- Upgraded provisions for the protection of safety data, safety information and related sources;
- Integration of the 8 critical elements into the State Safety Programme (SSP) components; and
- Enhanced provisions for Safety Management System (SMS).

4.5.1.2 It also provides expanded guidance on the scope of Annex 19 its applicability, including discretionary SMS applicability, as well as the development of safety intelligence. In addition, to address the needs of the diverse aviation community implementing safety management and following a recommendation stemming from the 2<sup>nd</sup> High-level Safety Conference (HLSC/2015), the Safety Management Implementation (SMI) public website ([www.icao.int/SMI](http://www.icao.int/SMI)) has been launched to complement the SMM. The SMI website serves as a repository for the sharing of practical examples, tools and educational material, which are being collected, validated and posted on an ongoing basis to support the effective implementation of SSP and SMS. An e-book version of the SMM in all ICAO languages is also available on the website.

4.5.2 Environmental impact assessment guidance:

4.5.2.1 This guidance identifies high-level principles that facilitate the robust definition and application of specific assessment approaches, methodologies and their respective metrics. The focus of these principles is on changes that relate to aircraft and ATM operational initiatives and may involve all phases of flight (e.g. Gate-to-Gate). The general principles of this guidance can be applicable to air navigation aspects arising from infrastructure proposals and major changes to airspace capacity or throughput, as well as operational changes. While the boundaries of an air navigation services environmental analysis are based on the needs of the study, for the purposes of this guidance material “air navigation services environmental assessment” is to be interpreted in the broadest possible sense and refers to impacts arising from changes to where, when, and how aircraft are operated.

[https://store.icao.int/catalogsearch/result/?category\\_id=2&q=10031](https://store.icao.int/catalogsearch/result/?category_id=2&q=10031)

4.5.2.2 Once the feasibility study has been done, we will still need to do a cost-benefit analysis to identify the optimum solution/s. ICAO has developed some guidance and a tool to assist you on this task:

4.5.3 Cost-benefit analysis:

<https://data.icao.int/cba>

4.5.3.1 Once the optimum solution(s) has(ve) been identified, States should report them to ICAO and they are reflected in **Table PMP III-6**.

## 5. STEP 5: IMPLEMENT SOLUTIONS

### *General*

5.1 Step 5 is the execution phase of the performance management process. This is where the changes and improvements that were decided upon during the previous step are organized into detailed plans, implemented, and begin delivering benefits.

*Select solutions*

5.2 Once the optimum solution/s has/have been identified, it is the moment to start the execution phase of the performance management process. This is where the changes and improvements that you decided were the optimum solution for your problem during the previous steps are organized into plans, implemented and begin delivering services to achieve the expected performance. During this execution phase, it is important to keep track of the project deployments (time, budget, ...).

5.3 Depending on the nature and magnitude of the change, this could mean:

- In the case of small-scale changes or day-to-day management:
  - Assigning management responsibility for the implementation to an individual;
  - Assigning responsibility and accountability for reaching a performance target to an individual or organization
- In the case of major or multi-year changes:
  - Refining the roadmap of selected solutions into a detailed implementation plan, followed by the launching of implementation projects
  - Ensure that each individual implementation project is operated in accordance with the performance-based approach. This means launching and executing the performance management process at the level of individual projects. Each project derives its scope, context and expectations (see Step 1 of the process) from the overall implementation plan.

5.4 This can imply to overcome high-level political challenges, find funding and resources or look for external technical support.

5.5 In this step, States are expected to report on the status on the implementation by updating **Table PMP III-7**.

## **6. STEP 6: ASSESS ACHIEVEMENTS**

*General*

6.1 The purpose of Step 6 is to continuously keep track of performance and monitor whether performance gaps are being closed as planned and expected.

*Assess achievements*

6.2 Once the project is implemented, it is time to assess the benefits from the implementation. This means measuring the performance of the operational environment under analysis once the solution/s has/have been deployed.

6.3 The purpose of this step is to continuously keep track of performance and monitor whether performance gaps are being closed as planned and expected.

6.4 First and foremost, this implies data collection to populate the supporting metrics with the data needed to calculate the performance indicators. The indicators are then compared with the targets defined during Step 3 to draw conclusions on the speed of progress in achieving the objectives.

6.5 This step also includes monitoring progress of the implementation projects, particularly in those cases where the implementation of solutions takes several years, as well as checking periodically whether all assumptions are still valid and the planned performance of the solutions is still meeting the (perhaps changed) requirements.

6.6 With regard to the review of actually achieved performance, the output of this step is simply an updated list of performance gaps and their causes. In practice, the scope of the activity is often interpreted as being much wider and includes recommendations to mitigate the gaps.

6.7 This is then called performance monitoring and review, which in addition to this step, includes step 1, 2 and 3.

6.8 For the purpose of organizing performance monitoring and review, the task can be broken down into five separate activities:

- Data collection
- Data publication
- Data analysis
- Formulation of conclusions; and
- Formulation of recommendations.

6.9 States should report on the benefits accrued from the implementation of the solutions in **Table PMP III-8**. This would constitute the baseline for the next iteration of the performance management process.

**Table PMP III-CAR/SAM-1 – List of CTA/TMA in the CAR/SAM Region****EXPLANATION OF THE TABLE***Column*

- |   |   |
|---|---|
| 1 | States in <b>Table GEN I-1</b>                      |
| 2 | List of FIRs by State within <b>Table ATM I-1</b> . |
| 3 | CTAs/TMAs   |
| 4 | Remarks   |

| Column |         |                 |
|--------|---------|-----------------|
| 1      | STATE   | Name of State   |
| 2      | FIR/UIR | Name of FIR/UIR |
| 3      | CTA/TMA | Name of CTA/TMA |
| 4      | Remarks | Remarks, notes  |

| STATE                                     | FIR/UIR      | UTA/CTA/TMA | Remarks |
|---|--------------|-------------|---------|
| 1   | 2            | 3           | 4       |
| France – French Antilles (St Barthelemy)  | San Juan FIR |             |         |
| France – French Antilles (St Martin)      |              |             |         |
| Netherlands (Saba)                        |              |             |         |
| Netherlands (Sint Eustatius)              |              |             |         |
| Sint Maarten (Kingdom of the Netherlands) |              |             |         |
| United Kingdom (Anguilla)                 |              |             |         |
| United Kingdom (British Virgin Islands)   |              |             |         |
| United States (Puerto Rico)               |              |             |         |
| United States (Virgin Islands)            |              |             |         |
| Antigua and Barbuda                       | Piarco FIR   |             |         |
| Barbados                                  |              |             |         |
| Dominica                                  |              |             |         |
| France – French Antilles (Guadeloupe)     |              |             |         |
| France – French Antilles (Martinique)     |              |             |         |
| Grenada                                   |              |             |         |
| Saint Kitts and Nevis                     |              |             |         |
| Saint Lucia                               |              |             |         |
| 1. Saint Vincent and the Grenadines       |              |             |         |
| Trinidad and Tobago                       |              |             |         |
| United Kingdom (British Virgin Islands)   |              |             |         |
| United Kingdom (Montserrat)               |              |             |         |

| STATE                                | FIR/UIR                       | UTA/CTA/TMA                               | Remarks                                 |
|--------------------------------------|-------------------------------|---|---|
| 1                                    | 2                             | 3   | 4                                       |
| Argentina                            | <b>Comodoro Rivadavia FIR</b> | Comodoro Rivadavia North CTA              |   |
|                                      |                               | Comodoro Rivadavia South CTA              |   |
|                                      |                               | Comodoro Rivadavia TMA                    |   |
|                                      |                               | Rio Gallegos TMA                          |   |
|                                      |                               | Ushuaia TMA                               |   |
|                                      | <b>Córdoba FIR</b>            | Córdoba North CTA                         |   |
|                                      |                               | Córdoba South CTA                         |   |
|                                      |                               | Cordoba TMA                               |   |
|                                      |                               | Salta TMA                                 |   |
|                                      | <b>Ezeiza FIR</b>             | Ezeiza CTA I                              |   |
|                                      |                               | Ezeiza CTA II                             |   |
|                                      |                               | Ezeiza CTA III                            |   |
|                                      |                               | Ezeiza CTA IV                             |   |
|                                      |                               | Baires TMA                                |   |
|                                      |                               | Mar del Plata TMA                         |   |
|                                      |                               | Neuquen TMA                               |   |
|                                      |                               | Rosario TMA                               |   |
|                                      | <b>Mendoza FIR</b>            | San Carlos de Bariloche TMA               |   |
|                                      |                               | Mendoza CTA                               |   |
|                                      | <b>Resistencia FIR</b>        | Mendoza TMA                               |   |
| Resistencia CTA                      |                               |   |   |
| Resistencia TMA                      |                               |   |   |
|                                      |                               | Foz TMA                                   | Tripartite Argentina- Brazil - Paraguay |
| Aruba (Kingdom of the Netherlands)   | Curaçao FIR                   | Curaçao Lower Terminal Control Area (TMA) |   |
| Curaçao (Kingdom of the Netherlands) |                               | Curaçao Upper Terminal Control Area (TMA) |   |
| Netherlands (Bonaire)                |                               | Juliana Terminal Control Area (TMA)       |   |
|                                      |                               | Beatrix Control Zone (CTR) Aruba          |   |
|                                      |                               | Flamingo Aerodrome Control zone (CTR)     |   |
|                                      |                               | Bonaire                                   |   |
|                                      |                               | Hato Control Zone (CTR)                   |   |
|                                      |                               | Curacao                                   |   |
|                                      |                               | Juliana Control Zone (CTR)                |   |
|                                      |                               | St. Maarten                               |   |
| Bahamas                              | Nassau FIR                    |   |   |
| Belize                               |                               | Belize_TMA 1                              |   |

| STATE                    | FIR/UIR                         | UTA/CTA/TMA                 | Remarks |
|--------------------------|---------------------------------|-----------------------------|---------|
| 1                        | 2                               | 3                           | 4       |
| Costa Rica               | Central<br>American FIR         | Belize TMA 2                |         |
| El Salvador              |                                 | Coco CTA Sector W           |         |
|                          |                                 | Coco CTA Sector E           |         |
|                          |                                 | Coco TMA                    |         |
|                          |                                 | Liberia TMA                 |         |
|                          |                                 | El Salvador TMA             |         |
|                          |                                 | MGGT Lower Flight<br>Region |         |
|                          |                                 | Mundo Maya Intl. TMA        |         |
|                          |                                 | La Aurora TMA               |         |
|                          |                                 | Bonito TMA                  |         |
| La Mesa TMA              |                                 |                             |         |
| Roatan TMA               |                                 |                             |         |
| Toncontin TMA            |                                 |                             |         |
| Sandino TMA              |                                 |                             |         |
| Guatemala                | Central<br>American FIR         | Belize CTR                  |         |
| Honduras                 |                                 | Coco                        |         |
| Nicaragua                |                                 | Coco CTR                    |         |
|                          |                                 | Pavas CTR                   |         |
|                          |                                 | El Salvador CTR             |         |
|                          |                                 | Ilopango CTR                |         |
|                          |                                 | La Aurora CTR               |         |
|                          |                                 | Mundo Maya CTR              |         |
|                          |                                 | San Jose CTR                |         |
|                          |                                 | Goloson CTR                 |         |
| La Mesa CTR              |                                 |                             |         |
| Palmerola CTR            |                                 |                             |         |
| Roatan CTR               |                                 |                             |         |
| Toncontin CTR            |                                 |                             |         |
| Managua CTR              |                                 |                             |         |
| United Kingdom (Bermuda) | New York<br>Oceanic West<br>FIR |                             |         |
|                          |                                 |                             |         |
| Bolivia                  | <b>La Paz FIR</b>               | La Paz CTA                  |         |
|                          |                                 | Cochabamba TMA              |         |
|                          |                                 | La Paz TMA                  |         |
|                          |                                 | Santa Cruz TMA              |         |
| Brazil                   | <b>Amazonica FIR</b>            | Amazonica CTA               |         |
|                          |                                 | Amazonica UTA               |         |
|                          |                                 | Rio Branco TMA              |         |
|                          |                                 | Porto Velho TMA             |         |
|                          |                                 | Boa Vista TMA               |         |
|                          |                                 | Manaus TMA                  |         |
|                          |                                 | Belem TMA                   |         |
|                          |                                 | Macapa TMA                  |         |
|                          |                                 | Santarem TMA                |         |
|                          |                                 | Cuiabá TMA                  |         |

| STATE                           | FIR/UIR              | UTA/CTA/TMA           | Remarks  |
|---------------------------------|----------------------|-----------------------|--|
| 1                               | 2                    | 3                     | 4  |
|                                 |                      | Sao Luis TMA          |  |
|                                 |                      | Amazonica TMA         | Bipartite Brazil - Colombia  |
|                                 | <b>Atlantico FIR</b> | Atlantico UTA         |  |
|                                 | <b>Brasilia FIR</b>  | Brasilia CTA          |  |
|                                 |                      | Brasilia UTA          |  |
|                                 |                      | Brasilia TMA          |  |
|                                 |                      | Belo Horizonte TMA    |  |
|                                 | <b>Curitiba FIR</b>  | Curitiba CTA          |  |
|                                 |                      | Curitiba UTA          |  |
|                                 |                      | Porto Alegre TMA      |  |
|                                 |                      | Foz TMA               | Tripartite Argentina- Brazil - Paraguay                                      |
|                                 |                      | Curitiba TMA          |  |
|                                 |                      | Florianópolis TMA     |  |
|                                 |                      | Campo Grande TMA      |  |
|                                 |                      | Rio de Janeiro TMA    |  |
|                                 |                      | Sao Paulo TMA         |  |
|                                 |                      | <b>Recife FIR</b>     | Recife CTA   |
|                                 | Recife UTA           |                       |  |
|                                 | Fortaleza TMA        |                       |  |
|                                 | Natal TMA            |                       |  |
|                                 | Recife TMA           |                       |  |
|                                 | Maceio TMA           |                       |  |
|                                 | Aracaju TMA          |                       |  |
|                                 | Salvador TMA         |                       |  |
|                                 | Porto Seguro TMA     |                       |  |
|                                 | Vitoria TMA          |                       |  |
|                                 | Jamaica              | Kingston FIR          |  |
| United Kingdom (Cayman Islands) |                      |                       |  |
| Chile                           | Antofagasta FIR      | Santiago Oceanic OCA* | *Oceanic ACC delivers ATC in Oceanic Control Area (OCA). see AIP-Chile Vol I |
|                                 |                      | Iquique UTA           |  |
|                                 |                      | Antofagasta TMA       |  |
|                                 |                      | Arica TMA             |  |
|                                 |                      | Iquique TMA           |  |
|                                 |                      | Calama TMA            |  |
|                                 | Atacama TMA          |                       |  |
|                                 | Isla de Pascua FIR   | Santiago Oceanic OCA* |  |
|                                 |                      | Isla de Pascua TMA    |  |
|                                 | Puerto Montt FIR     | Santiago Oceanic OCA* |  |

| STATE        | FIR/UIR             | UTA/CTA/TMA                   | Remarks                 |                             |
|--------------|---------------------|-------------------------------|-------------------------|-----------------------------|
| 1            | 2                   | 3                             | 4                       |                             |
|              |                     | Puerto Montt UTA              |                         |                             |
|              |                     | Puerto Montt TMA              |                         |                             |
|              |                     | Temuco TMA                    |                         |                             |
|              |                     | Balmaceda TMA                 |                         |                             |
|              | Punta Arenas<br>FIR |                               | Santiago Oceanic OCA*   |                             |
|              |                     |                               | Punta Arenas UTA        |                             |
|              |                     |                               | Punta Arenas TMA        |                             |
|              |                     |                               | Puerto Williams TMA     |                             |
|              | Santiago FIR        |                               | Isla Rey Jorge TMA      |                             |
|              |                     |                               | Santiago Oceanic OCA*   |                             |
|              |                     |                               | Santiago UTA            |                             |
|              |                     |                               | Santiago TMA            |                             |
|              |                     |                               | Concepcion TMA          |                             |
|              |                     |                               | La Serena TMA           |                             |
|              |                     |                               |                         |                             |
|              |                     |                               |                         |                             |
| Colombia     | Barranquilla<br>FIR | Barranquilla UTA              |                         |                             |
|              |                     | Barranquilla CTA              |                         |                             |
|              |                     | Barranquilla TMA sector NORTE |                         |                             |
|              |                     | Barranquilla TMA sector SUR   |                         |                             |
|              |                     |                               | San Andrés TMA          | To be analyzed              |
|              | Bogota FIR          |                               | Bogota UTA              |                             |
|              |                     |                               | Bogota TMA sector OESTE |                             |
|              |                     |                               | Bogota TMA sector NORTE |                             |
|              |                     |                               | Bogota TMA sector SUR   |                             |
|              |                     |                               | Cali CTA                |                             |
|              |                     |                               | Medellin CTA            |                             |
|              |                     |                               | Amazonica TMA           | Bipartite Brazil - Colombia |
|              |                     |                               | Bucaramanga TMA         |                             |
|              |                     |                               | Cali TMA                |                             |
|              |                     |                               | Cucuta TMA sector Sur   |                             |
|              |                     |                               | Cucuta TMA sector Norte |                             |
|              |                     |                               | Medellin TMA            |                             |
|              |                     |                               | Pereira TMA             |                             |
|              |                     |                               | Villavicencio TMA       |                             |
| Andes TMA    |                     |                               |                         |                             |
| El Yopal TMA |                     |                               |                         |                             |
|              |                     |                               |                         |                             |

| STATE              | FIR/UIR            | UTA/CTA/TMA   | Remarks |
|--------------------|--------------------|---|---------|
| 1                  | 2                  | 3   | 4       |
| Cuba               | Habana FIR         | Camaguey TMA<br>Habana TMA<br>Santa Clara TMA<br>Santiago TMA<br>Baracoa CTR<br>Bayamo CTR<br>Jardines CTR<br>Cienfuegos CTR<br>Cayo Largo CTR<br>Agramonte CTR<br>Maceo CTR<br>Guantanamo CTR<br>Marti CTR<br>Holguin CTR<br>Moa CTR<br>Manzanillo CTR<br>Gerona CTR<br>Playa Baracoa CTR<br>Santa Clara CTR<br>Varadero CTR |         |
| Dominican Republic | Santo Domingo FIR  | Las Americas TMA<br>Cibao TMA<br>Punta Cana TMA<br>Las Americas CTR<br>Puerto Plata CTR<br>Punta Cana CTR<br>La Romana CTR<br>Santiago CTR<br>Barahona CTR<br>El Higuero CTR<br>El Catey CTR  |         |
| Ecuador            | Guayaquil FIR      | Guayaquil UTA<br>Guayaquil CTA<br>Guayaquil TMA<br>Manta TMA<br>Quito TMA   |         |
| French Guiana      | Cayenne FIR        | Cayenne CTA<br>Cayenne TMA  |         |
| Guyana             | Georgetown FIR/UIR | Georgetown UTA<br>Georgetown CTA<br>Timehri TMA   |         |
| Haiti              | Port Au Prince FIR | Port-au-Prince TMA<br>Port-au-Prince CTR<br>Cap-Haitien CTR   |         |

| STATE  | FIR/UIR                 | UTA/CTA/TMA  | Remarks |
|--------|-------------------------|--|---------|
| 1      | 2                       | 3  | 4       |
| Mexico | Mazatlán<br>Oceanic FIR | Acapulco TMA<br>Cancun-Cozumel TMA<br>Ciudad del Carmen TMA<br>Ciudad Juarez TMA<br>Ciudad Obregón TMA<br>Ciudad Victoria TMA<br>Culiacan TMA<br>Chihuahua TMA<br>Durango TMA<br>Guadalajara TMA<br>Hermosillo TMA<br>Ixtapa-Zihuatanejo TMA<br>La Paz TMA<br>Los Mochis TMA<br>Aguas Calientes TMA<br>Manzanillo TMA<br>Matamoros TMA<br>Mazatlan TMA<br>Merida TMA<br>Mexico TMA<br>Monterrey TMA<br>Morelia TMA<br>Nuevo Laredo TMA<br>Oaxaca TMA<br>Puerto Vallarta TMA<br>Queretaro TMA<br>Reynosa TMA<br>Saltillo TMA<br>San Jose del Cabo TMA<br>San Luis Potosi TMA<br>Tampico TMA<br>Tijuana TMA<br>Torreon TMA<br>Tuxtla Gutierrez TMA<br>Veracruz TMA<br>Villahermosa TMA |         |

| STATE    | FIR/UIR          | UTA/CTA/TMA  | Remarks   |
|----------|------------------|--|---|
| 1        | 2                | 3  | 4   |
|          | Mexico FIR       | Del Norte International CTR<br>Acapulco CTR<br>Aguascalientes CTR<br>Cuernavaca CTR<br>Culiacán CTR<br>Chihuahua CTR<br>Guadalajara CTR<br>Hermosillo CTR<br>Ixtapa-Zihuatanejo CTR<br>León CTR<br>Manzanillo CTR<br>matamoros CTR<br>Mexico CTR<br>Monterrey CTR<br>morelia CTR<br>nuevo laredo CTR<br>Oaxaca CTR<br>Puebla CTR<br>Puerto Vallarta CTR<br>Queretaro CTR<br>Queretaro CTR<br>Saltillo CTR<br>San Luis Potosí CTR<br>Tampico CTR<br>Tepic CTR<br>Toluca CTR<br>Veracruz CTR |   |
| Panama   | Panama FIR       | Panama CTA<br>Panama TMA<br>San Andres TMA*  | *Under Colombia responsibility. TMA is within FIR/CTA <b>Panama.</b><br><b>To be analyzed</b> |
| Paraguay | Asunción FIR/UIR | Asuncion TMA<br>Foz TMA  | Tripartite Argentina- Brazil - Paraguay   |
| Peru     | Lima FIR         | Lima UTA<br>Lima CTA<br>Arequipa TMA<br>Chiclayo TMA<br>Cusco TMA<br>Iquitos TMA<br>Juliaca TMA<br>Lima TMA<br>Pisco TMA<br>Pucallpa TMA   |   |

| <b>STATE</b>                              | <b>FIR/UIR</b>        | <b>UTA/CTA/TMA</b> | <b>Remarks</b> |
|---|-----------------------|--------------------|----------------|
| <b>1</b>                                  | <b>2</b>              | <b>3</b>           | <b>4</b>       |
|   |                       | Tacna TMA          |                |
|   |                       | Trujillo TMA       |                |
|   |                       |                    |                |
| Suriname                                  | <b>Paramaribo FIR</b> | Paramaribo CTA     |                |
|   |                       | Pengel TMA         |                |
|   |                       |                    |                |
| United Kingdom (Turks and Caicos Islands) | Miami Oceanic FIR     |                    |                |
| United States                             |                       |                    |                |
|   |                       |                    |                |
| Uruguay                                   | <b>Montevideo FIR</b> | Montevideo CTA     |                |
|   |                       | Carrasco TMA       |                |
|   |                       |                    |                |
| United States                             | Houston FIR           |                    |                |
|   | Houston Oceanic FIR   |                    |                |
|   | Miami FIR             |                    |                |
|   |                       |                    |                |
| Venezuela                                 | <b>Maiquetia FIR</b>  | Maiquetia CTA      |                |
|   |                       | Barcelona TMA      |                |
|   |                       | Maiquetia TMA      |                |
|   |                       | Maracaibo TMA      |                |
|   |                       | Margarita TMA      |                |

Table PMP III-1 – Strengths, weakness, opportunities and threads in the CAR/SAM Region

## EXPLANATION OF THE TABLE

*Item*

- 1 Strengths: internal attributes of a system or an organization that can help in the realization of ambitions or in meeting expectations.
- 2 Weaknesses: internal attributes of a system or an organization that are a detriment to realizing ambitions or meeting expectations.
- 3 Opportunities: are external conditions that help in the realization of ambitions or in meeting expectations.
- 4 Threats: external conditions that are a detriment or harmful to realizing ambitions or meeting expectations.
- 5 Relationship of the SWOT attributes and conditions with the eleven Key performance area - KPAs.

| ( 1 ) STRENGTHS  | Remarks   |
|--|---|
| <ul style="list-style-type: none"> <li>• National Plans aligned with global plans and supporting regional implementation</li> <li>• Industry maturity and operating models (airlines, airports)</li> <li>• Potential human resources available</li> <li>• Robust regional infrastructure, implementation experience and harmonized services</li> <li>• Regional Integration and Harmonization with Horizontal Cooperation Mechanisms</li> </ul>  |   |
| ( 2 ) WEAKNESS   | Remarks   |
| <ul style="list-style-type: none"> <li>• Gaps in plan implementation (ANS, CNS, Technology, Training, budgets)</li> <li>• Limited human talent management policies (hiring, training and retention of sufficient and competent human resources)</li> <li>• Difficulty in institutional communication, collaboration and alignment between CAR and SAM.</li> <li>• Different levels of maturity in the implementation of ANS and airport management models.</li> <li>• Weak alignment and little communication between global plans (GANP, GASP, GASEP).</li> <li>• Language and cultural barriers between regions. Lack of timely publication of ICAO Documents in all official languages</li> </ul> | <ul style="list-style-type: none"> <li>•</li> </ul> |

| <b>( 3 ) OPPORTUNITIES</b>  | <b>Remarks</b>                                      |
|---|---|
| <ul style="list-style-type: none"> <li>• Greater collaboration in Technology, ICAO Technical Cooperation, innovation-research-development (I+R+D), multilateral financing, training/joint virtual meetings.</li> <li>• Trend towards the automation of processes and services with a focus on innovation, sustainability and harmonization</li> <li>• The low transitory demand allows improving activities, focusing on innovation and better preparation to generate resilience (administration, procedures, ATM, etc.).</li> <li>• Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators.</li> <li>• Put civil aviation as a development engine on the State and Regional agenda.</li> </ul> | <ul style="list-style-type: none"> <li>•</li> </ul> |
| <b>( 4 ) THREADS</b>  | <b>Remarks</b>                                      |
| <ul style="list-style-type: none"> <li>• Slow industry/airline recovery (&gt; 2024). Reorganization of the aeronautical market, competition for markets.</li> <li>• Changes in passenger behavior</li> <li>• Negative impact on aviation due to political, environmental or economic changes (fuel, etc.)</li> <li>• New disruptions that may negatively affect aviation (natural disasters, climate change, outbreaks, war/conflict, cyber attacks, economic downturn)</li> </ul>  | <ul style="list-style-type: none"> <li>•</li> </ul> |

**( 5 ) Relationship of the SWOT attributes and conditions with the eleven Key performance areas**

| <b>11 Key Performance Areas</b> | <b>STRENGTHS</b>   | <b>WEAKNESS</b>   | <b>OPPORTUNITIES</b>  | <b>THREADS</b>   |
|---------------------------------|--|---|---|--|
| <b>Capacity</b>                 | <ul style="list-style-type: none"> <li>○ Robust regional infrastructure, implementation experience and harmonized services</li> <li>○</li> </ul> | <ul style="list-style-type: none"> <li>○ Gaps in plan implementation (ANS, CNS, Technology, Training, budgets)</li> <li>○ Limited human talent management policies (hiring, training and retention of sufficient and competent human resources)</li> <li>○</li> </ul> | <ul style="list-style-type: none"> <li>○ Greater collaboration in Technology, ICAO Technical Cooperation, innovation-research-development (I+R+D), multilateral financing, training/joint virtual meetings.</li> <li>○ Trend towards the automation of processes and services with a focus on innovation, sustainability and harmonization</li> <li>○ The low transitory demand allows improving activities, focusing on innovation and better preparation to generate resilience (administration, procedures, ATM, etc.).</li> <li>○ Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators.</li> <li>○ Put civil aviation as a development engine on the State and Regional agenda.</li> </ul> | <ul style="list-style-type: none"> <li>○ Negative impact on aviation due to political, environmental or economic changes (fuel, etc.)</li> <li>○ New disruptions that may negatively affect aviation (natural disasters, climate change, outbreaks, war/conflict, cyber attacks, economic downturn)</li> </ul> |

| <b>11 Key Performance Areas</b> | <b>STRENGTHS</b>  | <b>WEAKNESS</b>   | <b>OPPORTUNITIES</b>   | <b>THREADS</b>  |
|---------------------------------|---|---|--|---|
| <b>Efficiency</b>               | <ul style="list-style-type: none"> <li>○ National Plans aligned with global plans and supporting regional implementation</li> <li>○ Industry maturity and operating models (airlines, airports)</li> <li>○ Potential human resources available</li> <li>○ Robust regional infrastructure, implementation experience and harmonized services</li> <li>○ Regional Integration and Harmonization with Horizontal Cooperation Mechanisms</li> </ul> | <ul style="list-style-type: none"> <li>○ Gaps in plan implementation (ANS, CNS, Technology, Training, budgets)</li> <li>○ Limited human talent management policies (hiring, training and retention of sufficient and competent human resources)</li> <li>○ Difficulty in institutional communication, collaboration and alignment between CAR and SAM.</li> <li>○ Different levels of maturity in the implementation of ANS and airport management models.</li> </ul> | <ul style="list-style-type: none"> <li>○ Greater collaboration in Technology, ICAO Technical Cooperation, innovation-research-development (I+R+D), multilateral financing, training/joint virtual meetings.</li> <li>○ Trend towards the automation of processes and services with a focus on innovation, sustainability and harmonization</li> <li>○ Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators.</li> <li>○ Put civil aviation as a development engine on the State and Regional agenda</li> </ul> | <ul style="list-style-type: none"> <li>○ Slow industry/airline recovery (&gt; 2024). Reorganization of the aeronautical market, competition for markets.</li> <li>○ Negative impact on aviation due to political, environmental or economic changes (fuel, etc.)</li> <li>○ New disruptions that may negatively affect aviation (natural disasters, climate change, outbreaks, war/conflict, cyber attacks, economic downturn)</li> </ul> |
| <b>Predictability</b>           | <ul style="list-style-type: none"> <li>○ Industry maturity and operating models (airlines, airports)</li> </ul>   | <ul style="list-style-type: none"> <li>○ Gaps in plan implementation (ANS, CNS, Technology, Training, budgets)</li> </ul>   | <ul style="list-style-type: none"> <li>○ Greater collaboration in Technology, ICAO Technical Cooperation, innovation-research-development (I+R+D), multilateral financing, training/joint virtual meetings.</li> <li>○ Timely availability of ICAO technical documentation in the official languages. New</li> </ul>   | <ul style="list-style-type: none"> <li>○ Negative impact on aviation due to political, environmental or economic changes (fuel, etc.)</li> <li>○ New disruptions that may negatively affect aviation (natural disasters, climate change, outbreaks, war/conflict, cyber attacks, economic downturn)</li> </ul>  |

| <b>11 Key Performance Areas</b> | <b>STRENGTHS</b>   | <b>WEAKNESS</b>   | <b>OPPORTUNITIES</b>  | <b>THREADS</b>   |
|---------------------------------|--|---|---|--|
|                                 |  |   | GANP - ASBU four layers and indicators. <ul style="list-style-type: none"> <li>○ Put civil aviation as a development engine on the State and Regional agenda</li> </ul>   |  |
| <b>Safety</b>                   | <ul style="list-style-type: none"> <li>○ National Plans aligned with global plans and supporting regional implementation</li> <li>○ Regional Integration and Harmonization with Horizontal Cooperation Mechanisms</li> </ul> | <ul style="list-style-type: none"> <li>○ Gaps in plan implementation (ANS, CNS, Technology, Training, budgets)</li> <li>○ Weak alignment and little communication between global plans (GANP, GASP, GASEP).</li> <li>○</li> </ul> | <ul style="list-style-type: none"> <li>○ Greater collaboration in Technology, ICAO Technical Cooperation, innovation-research-development (I+R+D), multilateral financing, training/joint virtual meetings.</li> <li>○ Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators.</li> <li>○ Put civil aviation as a development engine on the State and Regional agenda</li> </ul> | <ul style="list-style-type: none"> <li>○ New disruptions that may negatively affect aviation (natural disasters, climate change, outbreaks, war/conflict, cyber attacks, economic downturn)</li> </ul> |
| <b>Security</b>                 | <ul style="list-style-type: none"> <li>○ National Plans aligned with global plans and supporting regional implementation</li> <li>○ Regional Integration and Harmonization with Horizontal Cooperation Mechanisms</li> </ul> | <ul style="list-style-type: none"> <li>○ Gaps in plan implementation (ANS, CNS, Technology, Training, budgets)</li> <li>○ Weak alignment and little communication between global plans (GANP, GASP, GASEP).</li> <li>○</li> </ul> | <ul style="list-style-type: none"> <li>○ Greater collaboration in Technology, ICAO Technical Cooperation, innovation-research-development (I+R+D), multilateral financing, training/joint virtual meetings.</li> <li>○ Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators.</li> </ul>  | <ul style="list-style-type: none"> <li>○ New disruptions that may negatively affect aviation (natural disasters, climate change, outbreaks, war/conflict, cyber attacks, economic downturn)</li> </ul> |

| 11 Key Performance Areas | STRENGTHS  | WEAKNESS  | OPPORTUNITIES   | THREATS   |
|--------------------------|--|---|---|---|
|                          |  |   | <ul style="list-style-type: none"> <li>○ Put civil aviation as a development engine on the State and Regional agenda</li> </ul>   |   |
| Enviroment               | <ul style="list-style-type: none"> <li>○</li> </ul>  | <ul style="list-style-type: none"> <li>○</li> </ul> | <ul style="list-style-type: none"> <li>○ Greater collaboration in Technology, ICAO Technical Cooperation, innovation-research-development (I+R+D), multilateral financing, training/joint virtual meetings.</li> <li>○ Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators.</li> <li>○ Put civil aviation as a development engine on the State and Regional agenda</li> </ul> | <ul style="list-style-type: none"> <li>○ Negative impact on aviation due to political, environmental or economic changes (fuel, etc.)</li> <li>○</li> </ul> |
| Cost effectiveness       | <ul style="list-style-type: none"> <li>○ Industry maturity and operating models (airlines, airports)</li> <li>○</li> </ul> | <ul style="list-style-type: none"> <li>○</li> </ul> | <ul style="list-style-type: none"> <li>○ Greater collaboration in Technology, ICAO Technical Cooperation, innovation-research-development (I+R+D), multilateral financing, training/joint virtual meetings.</li> <li>○ Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators.</li> <li>○ Put civil aviation as a development engine on the State and Regional agenda</li> </ul> | <ul style="list-style-type: none"> <li>○ Negative impact on aviation due to political, environmental or economic changes (fuel, etc.)</li> <li>○</li> </ul> |

| <b>11 Key Performance Areas</b> | <b>STRENGTHS</b>  | <b>WEAKNESS</b>  | <b>OPPORTUNITIES</b>   | <b>THREADS</b>  |
|---------------------------------|---|--|--|---|
| <b>Interoperability</b>         | <ul style="list-style-type: none"> <li>○ National Plans aligned with global plans and supporting regional implementation</li> <li>○ Robust regional infrastructure, implementation experience and harmonized services</li> <li>○ Regional Integration and Harmonization with Horizontal Cooperation Mechanisms</li> </ul> | <ul style="list-style-type: none"> <li>○ Gaps in plan implementation (ANS, CNS, Technology, Training, budgets)</li> <li>○ Difficulty in institutional communication, collaboration and alignment between CAR and SAM.</li> <li>○ Different levels of maturity in the implementation of ANS and airport management models.</li> <li>○ Weak alignment and little communication between global plans (GANP, GASP, GASEP).</li> <li>○</li> </ul> | <ul style="list-style-type: none"> <li>○ Greater collaboration in Technology, ICAO Technical Cooperation, innovation-research-development (I+R+D), multilateral financing, training/joint virtual meetings.</li> <li>○ Trend towards the automation of processes and services with a focus on innovation, sustainability and harmonization</li> <li>○ Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators.</li> <li>○ Put civil aviation as a development engine on the State and Regional agenda</li> </ul> | <ul style="list-style-type: none"> <li>○ Negative impact on aviation due to political, environmental or economic changes (fuel, etc.)</li> <li>○</li> </ul> |
| <b>Access and equity</b>        | <ul style="list-style-type: none"> <li>○</li> </ul>   | <ul style="list-style-type: none"> <li>○</li> </ul>  | <ul style="list-style-type: none"> <li>○ Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators.</li> <li>○ Put civil aviation as a development engine on the State and Regional agenda</li> </ul>  | <ul style="list-style-type: none"> <li>○</li> </ul>   |

| <b>11 Key Performance Areas</b>           | <b>STRENGTHS</b> | <b>WEAKNESS</b> | <b>OPPORTUNITIES</b>  | <b>THREADS</b> |
|---|------------------|-----------------|---|----------------|
| <b>Participation by the ATM community</b> | ○                | ○               | <ul style="list-style-type: none"> <li>○ Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators.</li> <li>○ Put civil aviation as a development engine on the State and Regional agenda</li> </ul> | ○              |
| <b>Flexibility</b>                        | ○                | ○               | <ul style="list-style-type: none"> <li>○ Timely availability of ICAO technical documentation in the official languages. New GANP - ASBU four layers and indicators.</li> <li>○ Put civil aviation as a development engine on the State and Regional agenda</li> </ul> | ○              |

Table PMP III-2 – List of performance objectives by KPA for the CAR/SAM Region

## EXPLANATION OF THE TABLE

## Column

- (1) ICAO defined 11 Key Performance Areas. *Include the list of KPAs and its definition.*
- (2) Focus Areas. These focus areas have been selected from the catalogue of performance objectives.
- (3) Performance Objectives. These objectives have been selected from the catalogue of performance objectives.
- (4) Remarks

| (1)<br>KPA s      | (2)<br>Focus Areas                 | (3)<br>Performance Objectives   | (4)<br>Remarks   |
|-------------------|------------------------------------|---|--|
| <b>Efficiency</b> | Flight time & distance             | Apply en-route speed reduction if traffic is already airborne                                 |  |
| <b>Efficiency</b> | Flight time & distance             | Avoid taxi-out additional time resulting from adverse conditions                              |  |
| <b>Efficiency</b> | Flight time & distance             | Avoid taxi-in additional time resulting from adverse conditions                               |  |
| <b>Efficiency</b> | Flight time & distance             | Overcome route selection inefficiencies associated with route network design                  |  |
| <b>Efficiency</b> | Flight time & distance             | Facilitate direct routing of portions of the flight (if this does not cause network problems) |  |
| <b>Capacity</b>   | Capacity, throughput & utilization | Improve what's needed to reduce longitudinal separation minima                                | <b><i>PBN implementation in progress. PBCS when required</i></b> |

| (1)<br>KPA s          | (2)<br>Focus Areas                 | (3)<br>Performance Objectives  | (4)<br>Remarks                                      |
|-----------------------|------------------------------------|--|---|
| <b>Capacity</b>       | Capacity, throughput & utilization | Overcome capacity limitations attributable to route network design   | <i>PBN implementation in progress</i>               |
| <b>Capacity</b>       | Capacity, throughput & utilization | Take advantage of increased navigation precision (airspace with PBN operations) to implement route networks and airspace structures with smaller lateral and vertical safety buffers | <i>PBN implementation in progress</i>               |
| <b>Capacity</b>       | Capacity, throughput & utilization | Increase airport peak arrival capacity   | <i>ACDM implementation project (to be analyzed)</i> |
| <b>Capacity</b>       | Capacity, throughput & utilization | Equip additional RWY ends with instrument approaches   | <i>PBN implementation in progress</i>               |
| <b>Capacity</b>       | Capacity, throughput & utilization | Reduce approach minima (ceiling & visibility)  | <i>PBN implementation in progress</i>               |
| <b>Capacity</b>       | Capacity, throughput & utilization | Increase airport arrival rate  | <i>PBN implementation in progress</i>               |
| <b>Capacity</b>       | Capacity, throughput & utilization | Apply merging & synchronisation of arrival flows   | <i>Point merge implemented (Brazil, Colombia)</i>   |
| <b>Predictability</b> | Punctuality                        | Increase the number (%) of flights adhering to the planned take-off time   |   |
| <b>Predictability</b> | Punctuality                        | Increase the number (%) of scheduled flights adhering to the scheduled ON-block time   |   |
| <b>Predictability</b> | Variability                        | Reduce gate-to-gate flight time variability of frequent scheduled flights  |   |

| <b>(1)</b><br><b>KPA s</b>         | <b>(2)</b><br><b>Focus Areas</b> | <b>(3)</b><br><b>Performance Objectives</b> | <b>(4)</b><br><b>Remarks</b> |
|------------------------------------|----------------------------------|---|------------------------------|
| Safety                             | <i>To be incorporated</i>        |   |                              |
| Security                           | <i>To be incorporated</i>        |   |                              |
| Enviroment                         | <i>To be incorporated</i>        |   |                              |
| Cost effectiveness                 | <i>To be incorporated</i>        |   |                              |
| Interoperability                   | <i>To be incorporated</i>        |   |                              |
| Access and equity                  | <i>To be incorporated</i>        |   |                              |
| Participation by the ATM community | <i>To be incorporated</i>        |   |                              |
| Flexibility                        | <i>To be incorporated</i>        |   |                              |

Table PMP III-3 – List of KPIs by performance objective and KPA for the CAR/SAM Region

## EXPLANATION OF THE TABLE

## Column

- 1 KPAs and Focus Areas from Table PMP III-2.
- 2 Performance Objectives from Table PMP III-2.
- 3 KPIs based on the ICAO list of KPIs. *If there is a KPI you would like to introduce, please submit it for coordination with the global performance expert group*
- 4 Remarks

| <b>(1)</b><br><b>KPA &amp; Focus area</b>      | <b>(2)</b><br><b>Performance objectives</b>   | <b>(3)</b><br><b>KPI s</b> | <b>(4)</b><br><b>Remarks</b> |
|--|---|----------------------------|------------------------------|
| Efficiency<br>Flight time & distance           | Apply en-route speed reduction if traffic is already airborne                                 | KPI08                      |                              |
| Efficiency<br>Flight time & distance           | Avoid taxi-out additional time resulting from adverse conditions                              | KPI02                      |                              |
| Efficiency<br>Flight time & distance           | Avoid taxi-in additional time resulting from adverse conditions                               | KPI13                      |                              |
| Efficiency<br>Flight time & distance           | Overcome route selection inefficiencies associated with route network design                  | KPI04                      |                              |
| Efficiency<br>Flight time & distance           | Facilitate direct routing of portions of the flight (if this does not cause network problems) | KPI05                      |                              |
| Capacity<br>Capacity, throughput & utilization | Improve what's needed to reduce longitudinal separation minima                                | KPI06                      |                              |
| Capacity<br>Capacity, throughput & utilization | Overcome capacity limitations attributable to route network design                            | KPI06                      |                              |

| <b>(1)</b><br><b>KPA &amp; Focus area</b>             | <b>(2)</b><br><b>Performance objectives</b>  | <b>(3)</b><br><b>KPI s</b> | <b>(4)</b><br><b>Remarks</b>             |
|---|--|----------------------------|--|
| <b>Capacity</b><br>Capacity, throughput & utilization | Take advantage of increased navigation precision (airspace with PBN operations) to implement route networks and airspace structures with smaller lateral and vertical safety buffers | KPI06                      |  |
| <b>Capacity</b><br>Capacity, throughput & utilization | Increase airport peak arrival capacity   | KPI09                      | ASBU element impact non defined in GANP6 |
| <b>Capacity</b><br>Capacity, throughput & utilization | Equip additional RWY ends with instrument approaches   | KPI10                      |  |
| <b>Capacity</b><br>Capacity, throughput & utilization | Reduce approach minima (ceiling & visibility)  | KPI10                      |  |
| <b>Capacity</b><br>Capacity, throughput & utilization | Increase airport arrival rate  | KPI10                      |  |
| <b>Capacity</b><br>Capacity, throughput & utilization | Apply merging & synchronisation of arrival flows   | KPI10                      |  |
| <b>Predictability</b><br>(Punctuality)                | Increase the number (%) of flights adhering to the planned take-off time   | KPI01                      | ASBU element impact non defined in GANP6 |
| <b>Predictability</b><br>(Punctuality)                | Increase the number (%) of scheduled flights adhering to the scheduled ON-block time   | KPI14                      | ASBU element impact non defined in GANP6 |
| <b>Predictability</b><br>(Variability)                | Reduce gate-to-gate flight time variability of frequent scheduled flights  | KPI15                      | ASBU element impact non defined in GANP6 |

Table PMP III-4 – Performance baseline within the CAR/SAM Region

## EXPLANATION OF THE TABLE

## Column

- 1 States in **Table GEN I-1**
- 2 List of FIRs/ CTAs/TMAs/Airports by State within **Table ATM I-1** or **Table PMP III-CAR/SAM-1** and **Table AOP I-1**.
- 3 Value for the list of KPIs in **Table PMP III-3**.
- 4 Remarks

**Legend:** -- KPI calculation is in progress

++ KPI is not yet developed

| (1)<br>STATE | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs          |       |       |       |       |       |       |       |       |       |                  | (4)<br>Remarks  |
|--------------|--------------------------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------------|---|
|              |                                | KPI01<br>(Var 2A) | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13 | KPI14 | KPI15<br>(Var 1) |   |
| BRAZIL       | SBGR                           | 83,8%             | 3,7   |       |       |       |       | 34    | 26    | 1,8   | 54,6% | 5,9              | BASELINE 2021 (average all flights > DEP+ARR in SBGR) |
|              | SBBR                           | 90,5%             | 3,1   |       |       |       |       | 48    | 26    | 1,6   | 65,0% | 5,5              | BASELINE 2021 (average all flights > DEP+ARR in SBBR) |
|              | SBGL                           | 80,0%             | 3,0   |       |       |       |       | 30    | 6     | 1,5   | 64,1% | 5,9              | BASELINE 2021   |
|              | TMA SAO<br>PAULO               |                   |       | ++    | ++    | --    | 3,9   |       |       |       |       |                  | BASELINE 2021 (SBGR, SBKP, SBSP)                      |
|              | TMA BRASILIA                   |                   |       | ++    | ++    | --    | 3,6   |       |       |       |       |                  | BASELINE 2021 (SBBR)                                  |
|              | TMA Rio de<br>JANEIRO          |                   |       | ++    | ++    | --    | 2,9   |       |       |       |       |                  | BASELINE 2021 (SBRJ, SBGL)                            |

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| (1)<br>STATE | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs      |       |       |       |             |       |       |       |       |        |       | (4)<br>Remarks              |
|--------------|--------------------------------|---------------|-------|-------|-------|-------------|-------|-------|-------|-------|--------|-------|-----------------------------|
|              |                                | KPI01<br>(2A) | KPI02 | KPI04 | KPI05 | KPI06       | KPI08 | KPI09 | KPI10 | KPI13 | KPI14  | KPI15 |                             |
| PERU         | SPJC                           | 87%           | 3.57  |       |       |             |       | 35    | 23    | 1.68  | 61%    | ++    |                             |
|              | SPZO                           | 72.09%        | 3.78  |       |       |             |       | 6     | 5     | 0.85  | 69.65% | ++    |                             |
|              | TMA LIMA                       |               |       | ++    | ++    | --          | ++    |       |       |       |        |       |                             |
|              | TMA CUSCO                      |               |       | ++    | ++    | 11<br>(CHS) | ++    |       |       |       |        |       | CHS= hourly sector capacity |
|              | FIR LIMA                       |               |       | ++    | ++    | ++          |       |       |       |       |        |       |                             |

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| (1)<br>STATE | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs      |       |       |       |       |       |       |       |       |       |       | (4)<br>Remarks |
|--------------|--------------------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
|              |                                | KPI01<br>(2A) | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13 | KPI14 | KPI15 |                |
| CHILE        | SCEL                           | 31.7%         | ++    |       |       |       |       | ++    | ++    | ++    | ++    | ++    |                |
|              | SCIE                           | 32.9%         | ++    |       |       |       |       | +     | ++    | ++    | ++    | ++    |                |
|              | SCFA                           | 31.5%         | ++    |       |       |       |       | ++    | ++    | ++    | ++    | ++    |                |
|              | TMA SANTIAGO                   |               |       | ++    | ++    | ++    | ++    |       |       |       |       |       |                |
|              | TMA CONCEPCION                 |               |       | ++    | ++    | ++    | ++    |       |       |       |       |       |                |
|              | TMA<br>ANTOFAGASTA             |               |       | ++    | ++    | ++    | ++    |       |       |       |       |       |                |
|              | FIR ++                         |               |       | ++    | ++    | ++    |       |       |       |       |       |       |                |

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| (1)<br>STATE | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs |       |       |       |       |       |       |       |       |       |       | (4)<br>Remarks |
|--------------|--------------------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
|              |                                | KPI01    | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13 | KPI14 | KPI15 |                |
| ARGENTINA    | SABE                           | 73.7%    | 2.4   |       |       |       |       | 39    | 14    | 2.0   | 92.2% | 5.7   | 2019 BASELINE  |
|              | SAEZ                           | 57.9%    | 3.5   |       |       |       |       | 29    | 10    | 3.1   | 81.1% | 5.7   | 2019 BASELINE  |
|              | TMA BAIRES                     |          |       | ++    | ++    | --    | --    |       |       |       |       |       |                |
|              | FIR TODAS                      |          |       | 0.6%  | 0.84% | ++    |       |       |       |       |       | 5.4   | 2019 BASELINE  |

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| (1)<br>STATE          | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs |       |       |       |       |       |       |       |       |       |       | (4)<br>Remarks |
|-----------------------|--------------------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
|                       |                                | KPI01    | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13 | KPI14 | KPI15 |                |
| DOMINICAN<br>REPUBLIC | MDPC                           | ++       | ++    |       |       |       |       | 40    | ++    | ++    | ++    | ++    | TBD            |
|                       | MDSB                           | ++       | ++    |       |       |       |       | 35    | ++    | ++    | ++    | ++    | TBD            |

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| (1)<br>STATE | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs |       |       |       |       |       |                                    |       |       |       |       | (4)<br>Remarks   |
|--------------|--------------------------------|----------|-------|-------|-------|-------|-------|------------------------------------|-------|-------|-------|-------|--|
|              |                                | KPI01    | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09                              | KPI10 | KPI13 | KPI14 | KPI15 |  |
| COSTA RICA   | MROC                           | ++       | ++    |       |       |       |       | RWY<br>07<br>VMC:<br>33<br>IMC: 16 | --    | ++    | ++    | ++    | Costa Rica is currently part of flight data investigation group, to understand what KPI's are more feasible to be calculated with the available information from Radar systems. The KPI 10 |

|  |      |    |    |  |  |  |  |  |    |    |    |    |  |
|--|------|----|----|--|--|--|--|--|----|----|----|----|--|
|  |      |    |    |  |  |  |  | <b>RWY<br/>25</b><br>VMC:<br>20<br>VMC:<br>15<br><br><b>07/25</b><br>IMC: 06<br>Runway<br>07 for<br>landings<br>and<br>runway<br>25 for<br>takeoffs. |    |    |    |    | marked – is most likely to be developed in the future than the others. This may change as the project moves forward. |
|  | MRLB | ++ | ++ |  |  |  |  | <b>RWY<br/>07</b><br>VMC:<br>22<br>IMC: 10<br><br><b>RWY<br/>25</b><br>VMC:<br>20<br>VMC:<br>10  | -- | ++ | ++ | ++ |  |



| (1)<br>STATE   | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs |       |       |       |       |       |       |       |       |       |       | (4)<br>Remarks |
|----------------|--------------------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
|                |                                | KPI01    | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13 | KPI14 | KPI15 |                |
| EL<br>SALVADOR | MSLP                           | ++       | ++    |       |       |       |       | 8     | ++    | ++    | ++    | ++    | TBD            |

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| (1)<br>STATE | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs |       |       |       |       |       |       |       |       |       |       | (4)<br>Remarks |
|--------------|--------------------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
|              |                                | KPI01    | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13 | KPI14 | KPI15 |                |
| GUATEMALA    | MGGT                           | ++       | ++    |       |       |       |       | 12    | ++    | ++    | ++    | ++    | TBD            |

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| (1)<br>STATE | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs |       |       |       |       |       |       |       |       |       |       | (4)<br>Remarks |
|--------------|--------------------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
|              |                                | KPI01    | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13 | KPI14 | KPI15 |                |
| BELIZE       | MZBZ                           | ++       | ++    |       |       |       |       | 15    | ++    | ++    | ++    | ++    | TBD            |

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| (1)<br>STATE | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs |       |       |       |       |       |       |       |       |       |       | (4)<br>Remarks |
|--------------|--------------------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
|              |                                | KPI01    | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13 | KPI14 | KPI15 |                |
| HAITI        | MTPP                           | ++       | ++    |       |       |       |       | 14    | ++    | ++    | ++    | ++    | TBD            |
|              | MTCH                           | ++       | ++    |       |       |       |       | 8     | ++    | ++    | ++    | ++    | TBD            |

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| (1)<br>STATE | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs |       |       |       |       |       |       |       |       |       |       | (4)<br>Remarks |
|--------------|--------------------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
|              |                                | KPI01    | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13 | KPI14 | KPI15 |                |
| HONDURAS     | MHLM                           | ++       | ++    |       |       |       |       | 5     | ++    | ++    | ++    | ++    | TBD            |

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| (1)<br>STATE | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs |       |       |       |       |       |       |       |       |       |       | (4)<br>Remarks |
|--------------|--------------------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
|              |                                | KPI01    | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13 | KPI14 | KPI15 |                |
| NICARAGUA    | MNMG                           | ++       | ++    |       |       |       |       | ++    | ++    | ++    | ++    | ++    | TBD            |

**Table PMP III-5 – Performance targets and needs within CAR/SAM Region**

**EXPLANATION OF THE TABLE**

*Column*

- 1 States in **Table GEN I-1**
- 2 List of FIRs/CTAs/TMAs/Airports by State within **Table ATM I-1** or **Table PMP III-CAR/SAM- 1** and **Table AOP I-1**.
- 3 Targets for the list of KPIs in **Table PMP III-3**. *(include the value of the regional targets/needs for the different operational environments identified in step 1)*
- 4 Remarks

| (1)<br>STATE  | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3)<br>KPIs TARGETS |        |       |       |       |         |       |       |        |       |                  | (4)<br>Remarks |
|---------------|--------------------------------|---------------------|--------|-------|-------|-------|---------|-------|-------|--------|-------|------------------|----------------|
|               |                                | KPI01<br>(Var 2A)   | KPI02  | KPI04 | KPI05 | KPI06 | KPI08   | KPI09 | KPI10 | KPI13  | KPI14 | KPI15<br>(Var 1) |                |
| <b>BRAZIL</b> | SBGR                           | ≥ 80%               | ≤3 min |       |       |       |         | --    | --    | ≤3 min | --    | ≤ 10 min         |                |
|               | SBBR                           | ≥ 80%               | ≤3 min |       |       |       |         | --    | --    | ≤3 min | --    | ≤ 10 min         |                |
|               | SBGL                           | ≥ 80%               | ≤3 min |       |       |       |         | --    | --    | ≤3 min | --    | ≤ 10 min         |                |
|               | TMA SAO PAULO                  |                     |        | ++    | ++    | --    | ≤ 4 min |       |       |        |       |                  |                |
|               | TMA BRASILIA                   |                     |        | ++    | ++    | --    | ≤ 4 min |       |       |        |       |                  |                |
|               | TMA Rio de JANEIRO             |                     |        | ++    | ++    | --    | ≤ 4 min |       |       |        |       |                  |                |

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| (1)<br>STATE | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3)<br>KPIs TARGETS |        |       |       |       |       |       |       |        |       |       | (4)<br>Remarks |
|--------------|--------------------------------|---------------------|--------|-------|-------|-------|-------|-------|-------|--------|-------|-------|----------------|
|              |                                | KPI01<br>(2A)       | KPI02  | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13  | KPI14 | KPI15 |                |
| PERÚ         | SPJC                           | ≥ 80%               | ≤4 min |       |       |       |       | --    | --    | ≤3 min | ≥ 80% | ++    |                |
|              | SPZO                           | ≥ 80%               | ≤4 min |       |       |       |       | --    | --    | ≤3 min | ≥ 80% | ++    |                |
|              | TMA LIMA                       |                     |        | ++    | ++    | --    | ++    |       |       |        |       |       |                |
|              | TMA CUSCO                      |                     |        | ++    | ++    | --    | ++    |       |       |        |       |       |                |
|              | FIR LIMA                       |                     |        | ++    | ++    | ++    |       |       |       |        |       |       |                |

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| (1)<br>STATE | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3)<br>KPIs TARGETS |       |       |       |       |       |       |       |       |       |       | (4)<br>Remarks |
|--------------|--------------------------------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
|              |                                | KPI01<br>(2A)       | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13 | KPI14 | KPI15 |                |
| CHILE        | SCEL                           | ≥ 32%               | ++    |       |       |       |       | ++    | ++    | ++    | ++    | ++    |                |
|              | SCIE                           | ≥ 33%               | ++    |       |       |       |       | +     | ++    | ++    | ++    | ++    |                |
|              | SCFA                           | ≥ 32%               | ++    |       |       |       |       | ++    | ++    | ++    | ++    | ++    |                |
|              | TMA SANTIAGO                   |                     |       | ++    | ++    | ++    | ++    |       |       |       |       |       |                |
|              | TMA CONCEPCION                 |                     |       | ++    | ++    | ++    | ++    |       |       |       |       |       |                |
|              | TMA<br>ANTOFAGASTA             |                     |       | ++    | ++    | ++    | ++    |       |       |       |       |       |                |
|              | FIR ++                         |                     |       | ++    | ++    | ++    |       |       |       |       |       |       |                |

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| (1)<br>STATE | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs TARGETS |       |       |       |       |       |       |       |       |       |       | (4)<br>Remarks |
|--------------|--------------------------------|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
|              |                                | KPI01            | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13 | KPI14 | KPI15 |                |
| ARGENTINA    | SABE                           |                  |       |       |       |       |       |       |       |       |       |       |                |
|              | SAEZ                           |                  |       |       |       |       |       |       |       |       |       |       |                |
|              | TMA BAIRES                     |                  |       |       |       |       |       |       |       |       |       |       |                |
|              | FIR TODAS                      |                  |       |       |       |       |       |       |       |       |       |       |                |

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| (1)<br>STATE          | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs |       |       |       |       |       |       |       |       |       |       | (4)<br>Remarks |
|-----------------------|--------------------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
|                       |                                | KPI01    | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13 | KPI14 | KPI15 |                |
| DOMINICAN<br>REPUBLIC | MDPC                           | ++       | ++    |       |       |       |       | --    | ++    | ++    | ++    | ++    | TBD            |
|                       | MDSB                           | ++       | ++    |       |       |       |       | --    | ++    | ++    | ++    | ++    | TBD            |

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| (1)<br>STATE | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs |       |       |       |       |       |       |       |       |       |       | (4)<br>Remarks |
|--------------|--------------------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
|              |                                | KPI01    | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13 | KPI14 | KPI15 |                |
| COSTA RICA   | MROC                           | ++       | ++    |       |       |       |       | --    | ++    | ++    | ++    | ++    | TBD            |
|              | MRLB                           | ++       | ++    |       |       |       |       | --    | ++    | ++    | ++    | ++    | TBD            |

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| (1)<br>STATE   | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs |       |       |       |       |       |       |       |       |       |       | (4)<br>Remarks |
|----------------|--------------------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
|                |                                | KPI01    | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13 | KPI14 | KPI15 |                |
| EL<br>SALVADOR | MSLP                           | ++       | ++    |       |       |       |       | --    | ++    | ++    | ++    | ++    | TBD            |

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| (1)<br>STATE | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs |       |       |       |       |       |       |       |       |       |       | (4)<br>Remarks |
|--------------|--------------------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
|              |                                | KPI01    | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13 | KPI14 | KPI15 |                |
| GUATEMALA    | MGGT                           | ++       | ++    |       |       |       |       | --    | ++    | ++    | ++    | ++    | TBD            |

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| (1)<br>STATE | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs |       |       |       |       |       |       |       |       |       |       | (4)<br>Remarks |
|--------------|--------------------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
|              |                                | KPI01    | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13 | KPI14 | KPI15 |                |
| BELIZE       | MZBZ                           | ++       | ++    |       |       |       |       | --    | ++    | ++    | ++    | ++    | TBD            |

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| (1)<br>STATE | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs |       |       |       |       |       |       |       |       |       |       | (4)<br>Remarks |
|--------------|--------------------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
|              |                                | KPI01    | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13 | KPI14 | KPI15 |                |
| HAITI        | MTPP                           | ++       | ++    |       |       |       |       | --    | ++    | ++    | ++    | ++    | TBD            |
|              | MTCH                           | ++       | ++    |       |       |       |       | --    | ++    | ++    | ++    | ++    | TBD            |

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| (1)<br>STATE | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs |       |       |       |       |       |       |       |       |       |       | (4)<br>Remarks |
|--------------|--------------------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
|              |                                | KPI01    | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13 | KPI14 | KPI15 |                |
| HONDURAS     | MHLM                           | ++       | ++    |       |       |       |       | -     | ++    | ++    | ++    | ++    | TBD            |

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| (1)<br>STATE | (2)<br>FIR/CTA/TMA<br>/AIRPORT | (3) KPIs |       |       |       |       |       |       |       |       |       |       | (4)<br>Remarks |
|--------------|--------------------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|
|              |                                | KPI01    | KPI02 | KPI04 | KPI05 | KPI06 | KPI08 | KPI09 | KPI10 | KPI13 | KPI14 | KPI15 |                |
| NICARAGUA    | MNMG                           | ++       | ++    |       |       |       |       | ++    | ++    | ++    | ++    | ++    | TBD            |

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**Table PMP III-6 – Deployment planning: selected ASBU Elements / Operational Improvements for the CAR/SAM Region****EXPLANATION OF THE TABLE***Column*

- 1 States in **Table GEN I-1**
- 2 List of FIRs/ CTAs/TMAs/Airports by State within **Table ATM I-1** or **Table PMP III-CAR/SAM - 1** and **Table AOP I-1**.
- 3 Selected ASBU elements /operational improvements for each operational environment.

*Please note that the ASBU elements are a set of operational improvements, however, there could be other improvements outside of the ASBU framework that might address identified issues and opportunities and therefore contribute to achieve the pursued level of performance.*

- 4 Dependencies and relations: see type description for each element in GANP Layer 2**
- 5 Year when implementation of the selected solution is planned to start.
- 6 Year when implementation of the selected solution is foreseen to be completed.
- 7 Remarks

| (1)<br>STATE | (2)<br>FIR/CTA<br>/TMA/AIRPORT                             | (3)<br>ASBU Elements / Operational<br>Improvements | (4)<br>Dependencies and<br>relations                    | (5)<br>Start Year | (6)<br>End Year | (7)<br>Remarks |
|--------------|--|--|---|-------------------|-----------------|----------------|
| BRAZIL       | SBGR SBBR SBGL   | SURF-B0/1  | ----  |                   |                 | KPI02, KPI13   |
|              | SBGR SBBR SBGL   | APTA-B0/1  | AMET-B0/1 AMET-B0/2<br>NAVS-B0/3                        |                   |                 | KPI10          |
|              | SBGR SBBR SBGL   | APTA-B0/2  | AMET-B0/1 AMET-B0/2                                     |                   |                 | KPI10          |
|              | SBGR SBBR SBGL   | TBD  | TBD   |                   |                 | KPI09          |
|              | SBGR SBBR SBGL   | TBD  | TBD   |                   |                 | KPI01          |
|              | SBGR SBBR SBGL   | TBD  | TBD   |                   |                 | KPI14          |
|              | SBGR SBBR SBGL   | TBD  | TBD   |                   |                 | KPI15          |
|              | TMA <sub>s</sub> SAO PAULO,<br>BRASILIA, RIO DE<br>JANEIRO | RSEQ-B0/1  | AMET-B0/1 AMET-B0/2<br>ACDM-B0/1 ACDM-B0/2              |                   |                 | KPI08          |
|              | TMA <sub>s</sub> SAO PAULO,<br>BRASILIA, RIO DE<br>JANEIRO | FRTO-B1/2  | APTA-B0/1 APTA-B1/1<br>SNET-B0/1                        |                   |                 | KPI06          |
|              | TMA SAO PAULO  | RSEQ-B0/3  | AMET-B0/1   |                   |                 | KPI10          |
|              | FIR ATLANTICO  | CSEP-B1/3  | COMI-B0/3 COMI-B0/4<br>COMS-B0/1 COMS-B0/2<br>NAVS-B0/3 |                   |                 | KPI06          |

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| (1)<br>STATE | (2)<br>FIR/CTA<br>/TMA/AIRPORT | (3)<br>ASBU Elements / Operational<br>Improvements | (4)<br>Dependencies and<br>relations | (5)<br>Start Year | (6)<br>End Year | (7)<br>Remarks |
|--------------|--------------------------------|--|--------------------------------------|-------------------|-----------------|----------------|
| PERÚ         | SPJC SPZO                      | SURF-B0/1  | -----                                |                   |                 | KPI02, KPI13   |
|              | SPJC SPZO                      | TBD  | TBD                                  |                   |                 | KPI09          |
|              | SPJC SPZO                      | TBD  | TBD                                  |                   |                 | KPI01 KPI14    |
|              | TMA LIMA, CUSCO                | FRTO-B1/2  | APTA-B0/1 APTA-B1/1<br>SNET-B0/1     |                   |                 | KPI06          |
|              | FIR LIMA                       | FRTO-B1/2  | APTA-B0/1 APTA-B1/1<br>SNET-B0/1     |                   |                 | KPI06          |

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| (1)<br>STATE | (2)<br>FIR /TMA/AIRPORT | (3)<br>ASBU Elements / Operational<br>Improvements | (4)<br>Dependencies and<br>relations   | (5)<br>Start | End  | KPI                                 |
|--------------|-------------------------|--|--|--------------|------|-------------------------------------|
| CHILE        | SCEL                    | RSEQ-B0/2 = Departure<br>Management                | AMET-B0/1 AMET-B0/2<br>ACDM-B0/1 ACDM-B0/2<br>SURF-B1/4 WAKE-B2/1<br>WAKE-B2/4 WAKE-B2/8<br>SURF-B0/2 APTA-B0/2<br>NOPS-B0/5 | 2022         | 2025 | KPI02 - Taxi-out<br>additional time |
|              | SCEL                    | RSEQ-B0/1 =<br>Arrival Management                  | AMET-B0/1 AMET-B0/2<br>WAKE-B2/1 WAKE-B2/4<br>WAKE-B2/7 SURF-B0/2<br>SURF-B1/4 ACDM-B0/1<br>ACDM-B0/2                        | 2022         | 2025 | KPI10: Airport peak<br>throughput   |

| (1)<br>STATE | (2)<br>FIR /TMA/AIRPORT | (3)<br>ASBU Elements / Operational Improvements   | (4)<br>Dependencies and relations                                     | (5)<br>Start | End  | KPI  |
|--------------|-------------------------|---|---|--------------|------|--|
|              |                         | APTA-B1/1 = PBN Approaches (with advanced capabilities)   | APTA-B0/1 AMET-B0/1 AMET-B0/2   | 2023         | 2026 | KPI10 - Airport peak throughput.   |
|              | SCEL                    | APTA-B1/2 = PBN SID and STAR procedures (with advanced capabilities)                                  | APTA-B0/1 AMET-B0/1 AMET-B0/2   | 2023         | 2026 | KPI11: Airport throughput efficiency   |
|              | SCEL                    | ACDM-B0/1 = Airport CDM Information Sharing (ACIS)  | AMET-B0/1 AMET-B0/2 SURF-B0/2   | 2025         | 2027 | No specific KPI available in GANP 6 <sup>o</sup> Ed for intended performance |
|              | SANTIAGO                | FRTO-B0/1= Direct routing (DCT)   | NOPS-B0/1 FRTO-B0/2 FRTO-B0/4 FICE-B0/1                               | 2023         | 2027 | KPI04: Filed flight plan en-route extension                                  |
|              | SANTIAGO                | FRTO-B0/2 = Airspace planning and Flexible Use of Airspace (FUA)                                      | FRTO-B0/1 NOPS-B0/1   | 2024         | 2027 | KPI04: Filed flight plan en-route extension                                  |
|              | SCEL                    | NOPS-B0/1 = Initial integration of collaborative airspace management with air traffic flow management | AMET-B0/1 FRTO-B0/2   | 2024         | 2027 | KPI05 - Actual en-route extension  |
|              | SCEZ/OCA                | CSEP-B1/3 = Performance Based Longitudinal Separation Minima  | COMI-B0/3 COMI-B0/4 COMS-B0/1 COMS-B1/1 COMS-B0/2 COMS-B1/2 NAVS-B0/3 | 2023         | 2026 | KPI06: En-route airspace capacity  |
|              | SCEZ/OCA                | CSEP-B1/4 = Performance Based Lateral Separation Minima   | COMI-B0/3 COMI-B0/4 COMS-B0/1 COMS-B1/1 COMS-B0/2 COMS-B1/2 NAVS-B0/3 | 2023         | 2026 | KPI06: En-route airspace capacity  |
|              | SCEZ/SANTIAGO/SC<br>EL  | TBD   | TBD   | 2023         | 2025 | KPI01: Departure punctuality   |

| (1)<br>STATE | (2)<br>FIR /TMA/AIRPORT | (3)<br>ASBU Elements / Operational Improvements   | (4)<br>Dependencies and relations          | (5)<br>Start | End  | KPI   |
|--------------|-------------------------|---|--|--------------|------|---|
| CHILE        | SCIE                    | APTA-B1/1 = PBN Approaches (with advanced capabilities)   | APTA-B0/1 AMET-B0/1<br>AMET-B0/2           | 2023         | 2026 | KPI10 - Airport peak throughput.            |
|              | SCIE                    | APTA-B1/2 = PBN SID and STAR procedures (with advanced capabilities)                                  | APTA-B0/1 AMET-B0/1<br>AMET-B0/2           | 2023         | 2026 | KPI11: Airport throughput efficiency        |
|              | SCEZ/CONCEPCIÓN         | FRTO-B0/1= Direct routing (DCT)   | NOPS-B0/1 FRTO-B0/2<br>FRTO-B0/4 FICE-B0/1 | 2023         | 2027 | KPI04: Filed flight plan en-route extension |
|              | SCEZ/CONCEPCIÓN         | FRTO-B0/2 = Airspace planning and Flexible Use of Airspace (FUA)                                      | FRTO-B0/1 NOPS-B0/1                        | 2024         | 2027 | KPI04: Filed flight plan en-route extension |
|              | SCIE                    | NOPS-B0/1 = Initial integration of collaborative airspace management with air traffic flow management | AMET-B0/1 FRTO-B0/2                        | 2024         | 2027 | KPI05 - Actual en-route extension           |
|              | SCIE                    | TBD   | TBD  | 2023         | 2025 | KPI01: Departure punctuality                |
| CHILE        | SCFA                    | APTA-B1/1 = PBN Approaches (with advanced capabilities)   | APTA-B0/1 AMET-B0/1<br>AMET-B0/2           | 2023         | 2026 | KPI10 - Airport peak throughput.            |
|              | SCFA                    | APTA-B1/2 = PBN SID and STAR procedures (with advanced capabilities)                                  | APTA-B0/1 AMET-B0/1<br>AMET-B0/2           | 2023         | 2026 | KPI11: Airport throughput efficiency        |
|              | SCFZ/ANTOFAGAST<br>A    | FRTO-B0/1= Direct routing (DCT)   | NOPS-B0/1 FRTO-B0/2<br>FRTO-B0/4 FICE-B0/1 | 2023         | 2027 | KPI04: Filed flight plan en-route extension |
|              | SCFZ/ANTOFAGAST<br>A    | FRTO-B0/2 = Airspace planning and Flexible Use of Airspace (FUA)                                      | FRTO-B0/1 NOPS-B0/1                        | 2024         | 2027 | KPI04: Filed flight plan en-route extension |

| (1)<br>STATE | (2)<br>FIR /TMA/AIRPORT | (3)<br>ASBU Elements / Operational Improvements   | (4)<br>Dependencies and relations | (5)<br>Start | End  | KPI                               |
|--------------|-------------------------|---|-----------------------------------|--------------|------|-----------------------------------|
|              | SCFA                    | NOPS-B0/1 = Initial integration of collaborative airspace management with air traffic flow management | AMET-B0/1 FRTO-B0/2               | 2024         | 2027 | KPI05 - Actual en-route extension |
|              | SCFA                    | TBD   | TBD                               | 2023         | 2025 | KPI01: Departure punctuality      |

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| (1)<br>STATE | (2)<br>FIR/CTA /TMA/AIRPORT | (3)<br>ASBU Elements / Operational Improvements                         | (4)<br>Dependencies and relations  | (5)<br>Start Year | (6)<br>End Year | (7)<br>Remarks               |
|--------------|-----------------------------|---|--|-------------------|-----------------|------------------------------|
| Costa Rica   | MROC MRLB                   | SURF – B0/1 Basic ATCO tools to manage traffic during ground operations | There are currently no dependencies.   | 2024              | 2024            | KPI02, KPI13, KPI 20, KPI 21 |
|              | MROC MRLB                   | FRTO – B0/1 – Direct Routing (DCT)                                      | NOPS-B0/1 - Initial integration of collaborative airspace management with air traffic flow management<br><br>FRTO-B0/2 - Airspace planning and Flexible Use of Airspace (FUA)<br><br>FRTO-B0/4 - Basic conflict detection and conformance monitoring |                   |                 | KPI 04                       |

|           |   |  |     |     |   |
|-----------|---|--|-----|-----|---|
|           |   | FICE-B0/1 - Automated basic inter facility data exchange (AIDC)  |     |     |   |
| MROC MRLB | FRT0 – B0/3: Pre-validated and coordinated ATS routes to support flight and Flow. | FRT0 – B0/1 Direct routing (DCT)<br>FRT0-B0/2 - Airspace planning and Flexible Use of Airspace (FUA)<br>AMET-B0/1 - Meteorological observations products<br>AMET-B0/2 - Meteorological forecast and warning products<br>AMET-B0/4 - Dissemination of meteorological products | TBD | TBD | - |
| MROC MRLB | APTA – B1/2: PBN SID and STAR procedures (with advanced capabilities)             | APTA-B0/2 - PBN SID and STAR procedures (with basic capabilities)<br>AMET-B0/1 - Meteorological observations products<br>AMET-B0/2 - Meteorological forecast and warning products  | TBD | TBD |   |

|           |   |   |      |     |   |
|-----------|---|---|------|-----|---|
| MROC MRLB | DAIM – B1/1 Provision of quality-assured aeronautical data and information            | No relations  | TBD  | TBD |   |
| MROC MRLB | DAIM – B1/2 Provision of digital Aeronautical Information Publication (AIP) data sets | DAIM-B1/1 - Provision of quality-assured aeronautical data and information  | TBD  | TBD |   |
| MROC MRLB | DAIM – B1/3 Provision of terrain data sets.   | DAIM-B1/1 - Provision of quality-assured aeronautical data and information  | TBD  | TBD |   |
| MROC MRLB | DAIM – B1/4 Provision of obstacle data sets.  | DAIM-B1/1 - Provision of quality-assured aeronautical data and information  | TBD  | TBD |   |
| MROC MRLB | FICE – B0/1 Automatic basic interfacility data exchange. (AIDC)                       | COMI-B0/7 - ATS Message Handling System (AMHS)  | 2023 | TBD | Developed in cooperation with COCESNA.  |
| MROC MRLB | RSEQ – B0/1 Arrival management  | AMET-B0/2 - Meteorological forecast and warning products<br>ACDM-B0/1 - Airport CDM Information Sharing (ACIS)<br>ACDM-B0/2 - Integration with ATM Network function | TBD  | TBD | All relations are operational, only the ones that are part of Block 0 are taken into consideration. |
| MROC MRLB | ASUR – B0/1 Automatic Dependent Surveillance Broadcast – (ADS - B)                    | NAVS-B0/3 - Aircraft Based Augmentation Systems (ABAS)  | TBD  | TBD | Developed by COCESNA  |

|  |           |   |  |             |      |                         |
|--|-----------|---|--|-------------|------|-------------------------|
|  | MROC MRLB | ASUR – BO/2 Multilateration cooperative surveillance systems (MLAT)                   | No dependencies  | TBD         | TBD  | Developed by COCESNA    |
|  | MROC MRLB | ASUR – B0/3 Cooperative Surveillance Radar Downlink of Aircraft Parameters (SSR-DAPS) | No dependencies  | Implemented |      | Implemented by COCESNA. |
|  | MROC MRLB | AMET-B0/1 - Meteorological observations products                                      | ASUR-B0/3- Cooperative Surveillance Radar Downlink of Aircraft Parameters (SSR-DAPS) | 2024        | 2024 |                         |

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**Table PMP III-7 – Implementation progress on the selected operational improvements of the ASBU elements / Operational Improvements for the CAR/SAM Region**

**EXPLANATION OF THE TABLE**

*Column*

- 1 States in **Table GEN I-1**
- 2 List of FIRs/CTAs/TMAs/Airports by State within **Table ATM I-1** or **Table PMP III-CAR/SAM - 1** and **Table AOP I-1**.
- 3 Selected ASBU elements/operational improvement for each operational environment.

*Please note that the ASBU elements are a set of operational improvements, however, there could be other improvements outside of the ASBU framework that might address identified issues and opportunities and therefore contribute to achieve the pursued level of performance.*

- 4 Year when implementation of the selected solution is planned to start **PMP III-6**.
- 5 Year when implementation of the selected solution is foreseen to be completed **PMP III-6**.
- 6 Implementation progress:
  - Completed (100%): the development or improvement is reportedly fulfilled (it is either in operational use or there is reported on-going compliance)
  - Ongoing (1-99%): implementation is reported on-going, however not yet fully completed
  - Planned (0%): a planned schedule and proper (approved and committed budgeted) actions are specified within the agreed data for completion but implementation has not yet kicked off
  - Late (0-99%): part or all of the actions leading to completion are “planned” to be achieved after the end year date; or the implementation is ongoing but will be achieved later than that data or the end year date is already exceeded.
- 7 Remarks

| STATE | FIR/CTA /TMA /AIRPORT | ASBU Elements / Operational Improvements | Start Year | End Year | Implementation progress | Remarks |
|-------|-----------------------|--|------------|----------|-------------------------|---------|
|       |                       |  |            |          |                         |         |
|       |                       |  |            |          |                         |         |

**Table PMP III-8 – Performance benefits accrued from the implementation of the selected ASBU elements / Operational Improvements for the CAR/SAM Region**

**EXPLANATION OF THE TABLE**

*Column*

- 1 States in **Table GEN I-1**
- 2 List of FIRs/ CTAs/ TMAs/Airports by State within **Table ATM I-1** or **Table PMP III- CAR/SAM - 1** and **Table AOP I-1**.
- 3 Selected ASBU elements/operational improvements for each operational environment.

*Please note that the ASBU elements are a set of operational improvements, however, there could be other improvements outside of the ASBU framework that might address identified issues and opportunities and therefore contribute to achieve the pursued level of performance.*

- 4 Value after implementation for the list of KPIs in **Table PMP III-3**.
- 5 Remarks

| STATE | FIR/CTA<br>/TMA/AIRPORT | ASBU Elements/operational<br>improvements | KPI s |  |  |  |  |  | Remarks |
|-------|-------------------------|---|-------|--|--|--|--|--|---------|
|       |                         |   |       |  |  |  |  |  |         |
|       |                         |   |       |  |  |  |  |  |         |
|       |                         |   |       |  |  |  |  |  |         |
|       |                         |   |       |  |  |  |  |  |         |
|       |                         |   |       |  |  |  |  |  |         |