



**Vigésima Primera Reunión del Grupo Regional de Planificación y Ejecución del Caribe y Sudamérica
(GREPECAS/21)**

Santo Domingo, República Dominicana, 15 al 17 de noviembre de 2023

Cuestión 3 del

Orden del Día:

Desarrollos Globales e Interregionales

3.2 Informe de trabajo del Plan Regional CAR/SAM de Navegación Aérea Volumen III y sus avances regionales

AVANCE DEL PLAN REGIONAL CAR/SAM DE NAVEGACIÓN AÉREA - VOLUMEN III

(Presentada por la Secretaría)

RESUMEN EJECUTIVO

Esta Nota de estudio expone las actividades realizadas para continuar con la inserción de datos y líneas base de indicadores KPI en la versión inicial del CAR/SAM RANP Volumen III aprobado por la GREPECAS/20. Se presentan las actividades efectuadas en las Regiones CAR y SAM para reforzar las capacidades de los Estados para esta actividad. Se analizan los retos identificados y se proponen acciones para promover la gestión activa del citado documento. Se presenta para aprobación de GREPECAS una revisión (versión 0.1) para el Volumen III, incorporando datos de la Región CAR.

<i>Acción:</i>	<ul style="list-style-type: none">Las Acciones sugeridas se encuentran incluidas en la Sección 4
<i>Objetivos Estratégicos:</i>	<ul style="list-style-type: none">Seguridad OperacionalCapacidad y eficiencia de la navegación aéreaProtección del medio ambiente
<i>Referencias:</i>	<ul style="list-style-type: none">Convenio sobre Aviación Civil InternacionalInforme Final de la Vigésima Reunión del Grupo Regional de Planificación y Ejecución del Caribe y Sudamérica (GREPECAS/20), Salvador, Brasil, 16 al 18 de noviembre de 2022Plan Global de Navegación Aérea – GANP de OACI. Doc. 9750Manual sobre la actuación mundial del sistema de navegación aérea. Doc. 9883

1. Antecedentes

1.1 Durante la reunión GREPECAS/20 se informó sobre el proceso de formulación del Volumen III del Plan Regional de Navegación Aérea CAR/SAM (RANP). Se informó que la OACI conformó un Grupo de Trabajo

interregional para la aplicación de una Plantilla estandarizada para el Volumen III del CAR/SAM RANP los Planes Nacionales de Navegación Aérea (RANP), con enfoque basado en el rendimiento. Como resultado de ese Grupo de trabajo, se constituyó un proyecto piloto en las Regiones CAR/SAM, con el objeto de facilitar la implementación de este documento en todas la Regiones de OACI.

1.2 Entre 2019-2022 se realizaron actividades con los Estados/Territorios y Organizaciones para difundir la Plantilla propuesta por la OACI y reforzar los conceptos de la planificación basada en performance, con la finalidad de construir el Volumen III del RANP. En estas actividades, la Secretaría había observado la necesidad de fortalecer, primeramente, los Volumen I y II del RANP para posteriormente trabajar en la formulación del Volumen III.

1.3 En este proceso, mediante talleres y teleconferencias, se han identificado oportunidades de mejora para el texto de la plantilla y para las Tablas de planificación, incluyendo propuestas de nuevas columnas y textos aclaratorios, de manera que permitan asociarlos con los conceptos del GANP, así como facilitar la interacción de los planificadores con las herramientas (tutoriales, catálogos, cuadros de mando, AN-SPA, etc.), suministradas en el sitio web del GANP.

1.4 La Reunión GREPECAS /20 observó que la Secretaría juntamente con los Estados, luego de un trabajo de tres años, formuló la versión inicial (versión 0) del Volumen III del e-ANP CAR/SAM, consecuentemente luego de revisar el contenido presentado, la Reunión extendió su aprobación la Conclusión que se muestra en **Apéndice A.**

1.5 Con el propósito de mejorar la comprensión del ANP CAR/SAM, Volumen III, en Nota Informativa GREPECAS21 - NI/05 “Implementación eficaz del ANP CAR/SAM Volumen III” se exponen los fundamentos del GANP, su relación con el Plan Global de seguridad operacional (GASP), el concepto de tres marcos del GANP, y el método de seis pasos para la planificación basada en performance.

2. **Análisis**

2.1 Las regiones CAR/SAM han desarrollado competencias iniciales para la formulación de las Tablas del Volumen III. Sin embargo, se requiere, por parte de los Estados, la inserción de datos de indicadores KPI a nivel de línea base, para avanzar en el paso 3 “Cuantificar objetivos” del método de planificación basada en performance.

2.2 En Lima, Perú, del 12 al 15 de junio del 2023 se realizó el Taller CAR/SAM de seguimiento a la preparación del Volumen III del Plan Regional de Navegación Aérea, con la participación de delegados de 15 Estados y organizaciones, de manera presencial y virtual. Asimismo, participó una Oficial de la sede de OACI Montreal. El material de la discusiones y presentaciones del evento se encuentra en el siguiente enlace:

icao.int/SAM/Pages/MeetingsDocumentation.aspx?m=2023-RANP-VOL3&t=1

2.3 El objetivo del citado Taller fue continuar con la asistencia de la Secretaría, incluyendo el análisis de los nuevos indicadores claves de performance del área de seguridad operacional, conforme a la Séptima Edición del Plan Global de Navegación Aérea (GANP). A la vez, se abordó la revisión a los Planes Nacionales de Navegación Aérea (PNNA) de los Estados, considerando los nuevos elementos, áreas y sub-áreas de enfoque del GANP.

2.4 En los siguientes párrafos se analizan las actividades específicas de la Región CAR y Región SAM;

Región CAR

2.5 En la Octava Reunión del Grupo de Trabajo de Norteamérica, Centroamérica y Caribe (NACC/WG/8) (Ciudad de México, México, 29 de agosto al 1 de septiembre 2023), los Estados decidieron crear un Grupo Ad-hoc que trabaje en el mapeo de la información disponibles, con el objetivo de apoyar la medición y el

proceso de evaluación de los datos disponibles para los KPIs del GANP, con identificación de los metadatos (tipo de dato, fecha, hora, sistema que lo obtuvo, quién lo obtuvo, etc.).

2.6 Además, varios Estados de la Región CAR han comenzado el proceso de desarrollo de sus Planes Nacionales de Navegación Aérea (NANP), con una estrategia de trabajo que contempla como primera fase la evaluación del nivel de implementación de los Elementos Básicos Constitutivos (BBB por sus siglas en inglés), con el objetivo de identificar el nivel de implementación de los servicios mandatorios estipulados en los Anexos de Convención de Chicago e identificar los proyectos prioritarios que debe incluir dentro de los Planes de Navegación Aérea.

2.7 La segunda fase de la estrategia es la evaluación del nivel de implementación de los elementos ASBU de los bloques 0 y 1 del GANP. Esta evaluación se desarrolló a nivel de toda la región CAR concluyéndose que es necesario la implementación de algunos elementos prioritarios ASBU para poder continuar con una implementación continua y que abarque toda la región debido a la interrelación de un elemento con otro, lo que significa que la implementación de un elemento requiere que otro elemento que ya se encuentre operando.

2.8 Así, se identifican los siguientes elementos como prioridad a ser implementados en la región, especialmente CAR, ya que son habilitadores del desarrollo y apoyen la implementación de otros módulos:

- a) AMET-B0/1: habilita otros elementos MET y elementos operativos.
- b) ASUR-B0/1: es el habilitador tecnológico número uno que apoya la implementación de los módulos operativos en el área de Gestión de Tráfico Aéreo y Gestión Aeroportuaria.
- c) FICE-B0/1: Apoya la capacidad y eficiencia.
- d) COMI-B0/7-ATS: Apoya el intercambio de información aeronáutica y meteorológica.

2.9 Basado en la información de los ítems expuestos, se indica que las prioridades regionales para la Región CAR son:

- a) La implementación regional del ADS-B y asegurar cobertura de datos de vigilancia en toda la región.
- b) El sistema de mensajería aeronáutica AMHS (Casi implementado en la totalidad de la región)
- c) Fortalecer y asegurar la infraestructura de comunicaciones, para el intercambio de información entre los Estados NAM/CAR y otras regiones.
- d) Deseables: NAM/ICD y AIDC, siempre que se cuente con la infraestructura de vigilancia necesaria para apoyar esta implementación.
- e) Ir integrando la información MET y AIM.

2.10 Como tercera fase del desarrollo de los planes de navegación aérea, la región CAR está trabajando en la evaluación de los indicadores claves de performance de forma individual por cada Estado con el objetivo de alimentar el e-ANP Volumen III y desarrollar de forma paralela sus NANP.

2.11 De acuerdo con lo antes expuesto, la reunión NACC/WG/8 aprobó una conclusión para que los Estados CAR presenten información para las correspondientes Tablas del Volumen III del ANP CAR/SAM. Estos datos han sido insertados por la Secretaría, generando una propuesta de revisión para el Volumen III (versión 0.1), según se presenta en el **Apéndice B** (en idioma inglés) de la presente nota de estudio. En consecuencia, se propone el siguiente proyecto de conclusión:

CONCLUSIÓN	
GREPECAS/21/XX	APROBACIÓN DE LA VERSION 0.1 DEL VOLUMEN III DEL CAR/SAM RANP
<p>Qué:</p> <p>Se aprueba la versión 0.1 (Apéndice XX de este informe) del Volumen III del CAR/SAM RANP, incluyéndose los datos e información de los Estados de la Región CAR.</p>	<p>Impacto esperado:</p> <p><input checked="" type="checkbox"/> Político / Global <input checked="" type="checkbox"/> Inter-regional <input checked="" type="checkbox"/> Económico <input checked="" type="checkbox"/> Ambiental <input checked="" type="checkbox"/> Técnico/Operacional</p>
<p>Por qué:</p> <p>Para actualizar la información necesaria para la planeación de las mejoras en los servicios y facilidades de navegación aérea, a través de enmienda al Volumen III del CAR/SAM RANP, incluyendo datos e información de la Región CAR, conforme al procedimiento establecido para el Volumen III.</p>	
<p>Cuándo: De inmediato</p>	<p>Estado: <input checked="" type="checkbox"/> Valida / <input type="checkbox"/> Sobreseída / <input type="checkbox"/> Completada</p>
<p>Quién: <input checked="" type="checkbox"/> Estados <input checked="" type="checkbox"/> OACI <input type="checkbox"/> Otros:</p>	

Región SAM

2.12 En la Región SAM, las administraciones muestran dificultades con la organización de equipos estables y multidisciplinarios para la planificación regional, debido a escasez de personal. Aunque se reconocen esas limitaciones para la Región, en Argentina la EANA ha perfeccionado sus procesos con indicadores KPI. En Colombia, se está organizando un equipo de trabajo para impulsar el cálculo de KPIs y recientemente se ha realizado una visita técnica de especialistas de AEROCIVIL a la sede de CGNA Brasil. Chile ha mapeado con mucho detalle los KPIs que son relevantes para su Estado, así como las fuentes de datos y proveedores. Por su parte, Venezuela está recopilando y revisando datos para KPIs como parte de la actualización de su Plan nacional de navegación aérea.

2.13 A la fecha, Perú está desarrollando cálculos para seis KPIs del GANP abarcando los Aeropuertos de Lima y Cusco, y para 2024 ha planeado ampliar cálculos a otros 10 aeropuertos. Brasil ha publicado por tercer año consecutivo su Relatorio de performance abarcando nueve KPIs, además el primer Estado que ha incluido indicadores del área “seguridad operacional”.

2.14 Complementariamente, el equipo para el desarrollo del servicio ATFM de la SAM/IG ha preparado el Dashboard OPSAM para la temporada Invierno 2023 de IATA (Winter23), incluyendo cálculos preliminares¹ para el KPI 10 “Rendimiento pico del aeropuerto” (Rendimiento máximo R60²) de 8 Estados.

2.15 La elaboración del KPI10 del GANP se ha obtenido, de manera preliminar, en base a información suministrada por los servicios ATFM para demanda de tráfico propuesta y demanda ejecutada en aeropuertos seleccionados. Este indicador, por su propia definición, refleja avances en implantaciones en el área clave de

¹ Este indicador KPI10 ya ha sido promulgado en el Volumen III por Argentina, Brasil y Perú. Para el resto de los estados SAM que aparecen en el dashboard el citado KPI es todavía un cálculo preliminar, dado que se está mejorando la calidad de los datos y se están ajustando procesos con los proveedores de datos.

² Definido como el percentil 95 del número de operaciones por hora registradas en un aeropuerto, en las horas “continuas” ordenadas de la hora menos ocupada a la hora más ocupada. Se puede calcular para llegadas, salidas o llegadas + salidas.

performance (KPA) de “capacidad”. De acuerdo con el GANP, el KPI10 está asociado a la implementación de 4 módulos operacionales (APTA, CSEP, RSEQ, WAKE).

2.16 Ver cálculos del KPI10 en Dashboard OPSAM (página 12), en el enlace siguiente:

<https://app.powerbi.com/view?r=eyJrjoiMDZiNjU0MzktOGQ1Yy00ZWJkLTgwMGUtzTQ0NTU2MzVjOGQ0liwidCI6IjI2MjI4ZGNhLTcwZDMtNDkxNy04MjMzLTA4M2FjMzY1NWE5MSJ9>

2.17 En cuanto a las actividades de capacitación, la CGNA de Brasil impartió el Curso/Taller sobre Indicadores de performance del GANP (Río de Janeiro, 3 al 14 de julio 2023). Esta actividad fue dirigida a fortalecer y/o generar competencias para los especialistas a cargo de la gestión del CAR/SAM RANP, Volumen III, así como de los Planes Nacionales. Participaron delegados de 9 Estados de la Región SAM.

3. Tareas y retos identificados para la Región CAR/SAM

3.1 Conforme a lo antes expuesto, se ha mantenido la asistencia a los Estados, Organizaciones, ANSPs de la Región CAR/SAM y se ha trabajado con la Industria. Se debe notar que algunas implantaciones de navegación aérea se encuentran en progreso, entre ellas, los módulos ASBU de Accesibilidad aeroportuaria (APTA) y Operaciones mediante rutas libres (FRTO). Se prevé que dicha implantación puede generar tareas adicionales para el staff que también está asignado a las materias de planificación y soporte del Volumen III del ANP CAR/SAM. De otro lado, los servicios ATFM, ya están manejando datos de demanda de tráfico que se usan como insumo para generar indicadores del área *capacidad*.

3.2 A la fecha, la mayoría de los Estados están preparándose para la formulación de las líneas base de KPIs. Se debería incrementar el suministro de datos por parte de los Estados/Organizaciones. Por lo tanto, para seguir adelante con el Volumen III se requiere redefinir las tareas de los miembros de GREPECAS, abordando los problemas identificados en el proceso, entre otros:

- Comprensión sobre la relevancia del Plan Regional ANP CAR/SAM como instrumento de planificación mundial y para el establecimiento de responsabilidades internacionales, y sobre la relación del Plan Regional con el derecho para el establecimiento de tasas aeronáuticas.
- Falta de cooperación entre el órgano de planificación de navegación aérea del Estado y los proveedores de datos que son necesarios para la formulación de KPIs. En algunos casos ambos dependen de la misma administración, sin embargo, no se facilita la entrega de datos.
- Insuficientes recursos, conocimiento y/o tecnología para gestionar indicadores *sencillos* e indicadores *complejos* (ejemplo: los KPI17 y KPI19 requieren ser automatizados).
- Necesidad de mejorar el análisis costo - beneficio en el proceso de toma de decisiones de implementación de elementos de mejora en el área de navegación aérea.
- Reorientar la planificación regional para introducir el método de los seis pasos como referencia para GREPECAS, de forma que se pueda verificar que los elementos de mejora acordados para la navegación aérea brinden los resultados esperados.

3.3 En este contexto, en la mesa de trabajo Número 2 de GREPECAS/21 se deberá identificar las herramientas necesarias para que las Oficinas NACC y SAM puedan asistir apropiadamente a los Estados/Organizaciones.

4. **Acción sugerida**

4.1 Se invita a la Reunión a:

- a) Revisar la información expuesta en el Apéndice B y, de ser el caso, aprobar el proyecto de Conclusión presentado en párrafo 2.11;
- b) Analizar la presente Nota de Estudio y, complementariamente, la Nota informativa NI/05;
- c) Analizar y discutir en la Mesa de Trabajo número 2 los desafíos específicos que se enfrentan en la implementación efectiva del Volumen III del CAR SAM RANP; y
- d) Proponer y de ser el caso aprobar acciones concretas para apoyar a GREPECAS en la implementación efectiva del Volumen III.

Apéndice A

CONCLUSIÓN GREPECAS/20/07		APROBACIÓN DE LA VERSIÓN INICIAL (VERSIÓN 0) DEL VOLUMEN III DEL ANP CAR/SAM, Y SIGUIENTES ACCIONES PARA LA GESTIÓN Y DESARROLLO DE LA PLANIFICACIÓN BASADA EN PERFORMANCE	
Qué: Que; a) GREPECAS aprueba la versión inicial (versión 0) del Volumen III del ANP CAR/SAM (Apéndice B del informe), formulado en base a la Plantilla del consejo de OACI, y alineado a la Recomendación 4.3/1, literal d), de la AN-Conf 13; b) GREPECAS Apruebe el Programa para la gestión del Volumen III del ANP CAR/SAM (Apéndice B del informe), que permita la implantación sostenible de la planificación basada en performance; y c) Los Estados implementen equipos de trabajo para desarrollar actividades de recopilación de datos y gestión de indicadores KPI del GANP como base para poblar los datos de las Tablas de planificación del Vol. III, con asistencia de la Secretaría para reportar en GREPECAS/21.		Impacto esperado: <input type="checkbox"/> Político / Global <input checked="" type="checkbox"/> Inter-regional <input type="checkbox"/> Económico <input type="checkbox"/> Ambiental <input checked="" type="checkbox"/> Técnico/Operacional	
Por qué: Para llevar a la práctica el método de seis pasos para la planificación basada en performance en las Regiones CAR/SAM y completar el proceso de población de datos de los Estados /Territorios y, por ende, la Gestión del Volumen III.			
Cuándo: a) de inmediato		Estado: <input checked="" type="checkbox"/> Válida / <input type="checkbox"/> Invalidada / <input type="checkbox"/> Finalizada	

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. Text to be deleted is shown with a line through it. | text to be deleted |
| 2. New text to be inserted is highlighted with grey shading. | new text to be inserted |
| 3. Text to be deleted is shown with a line through it 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-7 – Status of deployment of the selected operational improvements of the ASBU elements / Operational Improvements for the (NAME) Region

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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.

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.

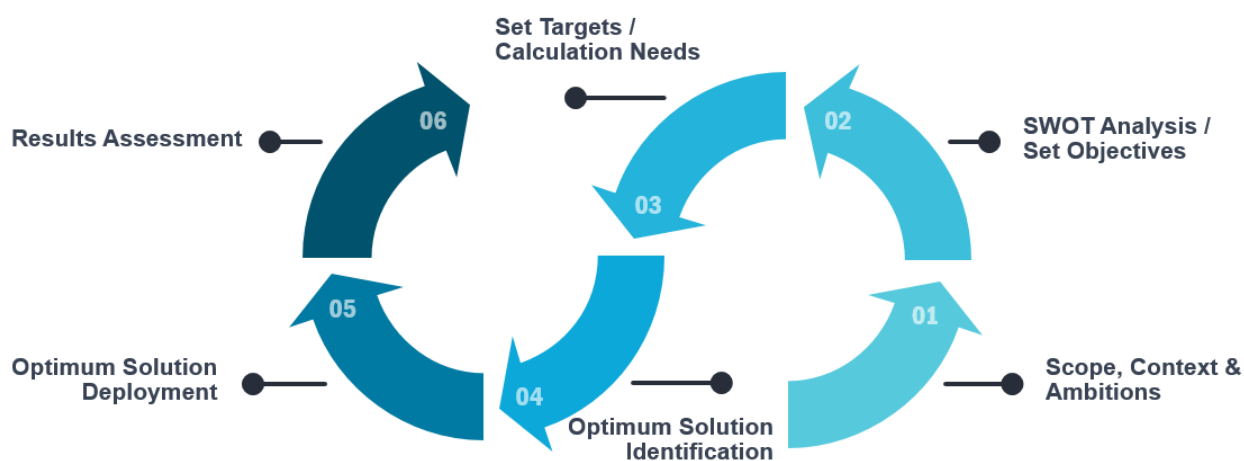


Figure 1 Six-step performance management process

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 (KPA). 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.

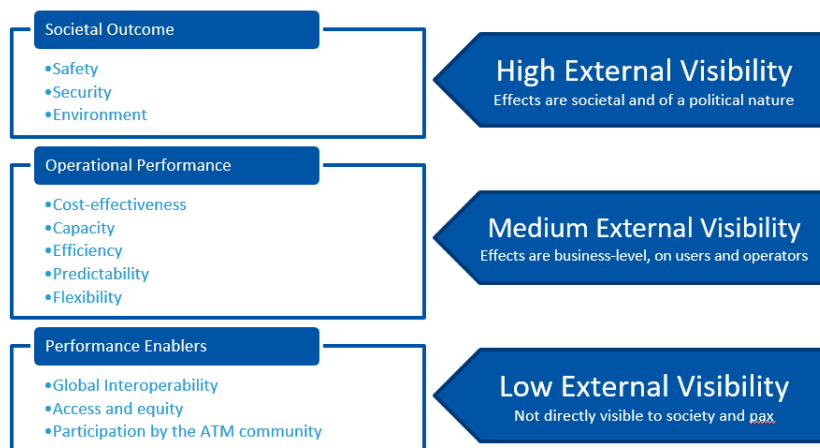


Figure 2 The 11 KPAs of the GANP

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

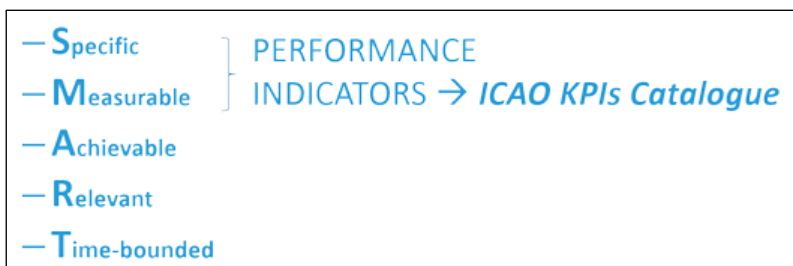
General

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

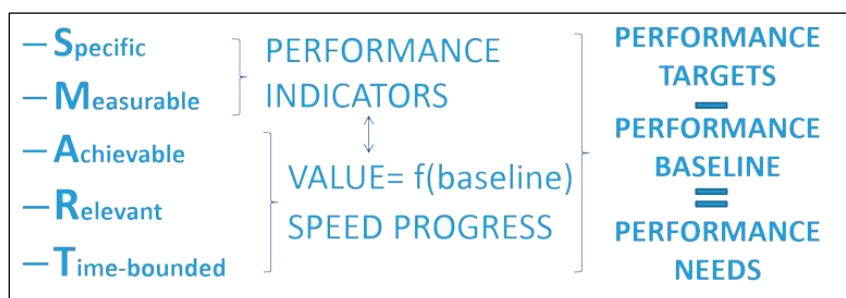
3.5 Performance targets are closely associated with performance indicators, they represent the values of performance indicators that need to be reached or exceeded to consider a performance objective as being fully achieved.

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 2nd High-level Safety Conference (HLSC/2015), the Safety Management Implementation (SMI) public website (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

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 Table GEN I-1 |
| 2 | List of FIRs by State within Table ATM I-1 . |
| 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	Comodoro Rivadavia FIR	Comodoro Rivadavia North CTA	
		Comodoro Rivadavia South CTA	
		Comodoro Rivadavia TMA	
		Rio Gallegos TMA	
		Ushuaia TMA	
	Córdoba FIR	Córdoba North CTA	
		Córdoba South CTA	
		Cordoba TMA	
		Salta TMA	
	Ezeiza FIR	Ezeiza CTA I	
		Ezeiza CTA II	
		Ezeiza CTA III	
		Ezeiza CTA IV	
		Baires TMA	
		Mar del Plata TMA	
		Neuquen TMA	
		Rosario TMA	
	Mendoza FIR	San Carlos de Bariloche TMA	
		Mendoza CTA	
	Resistencia FIR	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 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 Region	
		Mundo Maya Intl. TMA	
		La Aurora TMA	
		Bonito TMA	
La Mesa TMA			
Roatan TMA			
Toncontin TMA			
Sandino TMA			
Guatemala	Central 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 Oceanic West FIR		
Bolivia	La Paz FIR	La Paz CTA	
		Cochabamba TMA	
		La Paz TMA	
		Santa Cruz TMA	
Brazil	Amazonica FIR	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
	Atlantico FIR	Atlantico UTA	
	Brasilia FIR	Brasilia CTA	
		Brasilia UTA	
		Brasilia TMA	
		Belo Horizonte TMA	
	Curitiba FIR	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	
	Recife FIR	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 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 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 Habana TMA Santa Clara TMA Santiago TMA Baracoa CTR Bayamo CTR Jardines CTR Cienfuegos CTR Cayo Largo CTR Agramonte CTR Maceo CTR Guantanamo CTR Marti CTR Holguin CTR Moa CTR Manzanillo CTR Gerona CTR Playa Baracoa CTR Santa Clara CTR Varadero CTR	
Dominican Republic	Santo Domingo FIR	Las Americas TMA Cibao TMA Punta Cana TMA Las Americas CTR Puerto Plata CTR Punta Cana CTR La Romana CTR Santiago CTR Barahona CTR El Higuero CTR El Catey CTR	
Ecuador	Guayaquil FIR	Guayaquil UTA Guayaquil CTA Guayaquil TMA Manta TMA Quito TMA	
French Guiana	Cayenne FIR	Cayenne CTA Cayenne TMA	
Guyana	Georgetown FIR/UIR	Georgetown UTA Georgetown CTA Timehri TMA	
Haiti	Port Au Prince FIR	Port-au-Prince TMA Port-au-Prince CTR Cap-Haitien CTR	

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

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

STATE	FIR/UIR	UTA/CTA/TMA	Remarks
1	2	3	4
		Tacna TMA	
		Trujillo TMA	
Suriname	Paramaribo FIR	Paramaribo CTA	
		Pengel TMA	
United Kingdom (Turks and Caicos Islands)	Miami Oceanic FIR		
United States			
Uruguay	Montevideo FIR	Montevideo CTA	
		Carrasco TMA	
United States	Houston FIR		
	Houston Oceanic FIR		
	Miami FIR		
Venezuela	Maiquetia FIR	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"> • National Plans aligned with global plans and supporting regional implementation • Industry maturity and operating models (airlines, airports) • Potential human resources available • Robust regional infrastructure, implementation experience and harmonized services • Regional Integration and Harmonization with Horizontal Cooperation Mechanisms 	
(2) WEAKNESS	Remarks
<ul style="list-style-type: none"> • Gaps in plan implementation (ANS, CNS, Technology, Training, budgets) • Limited human talent management policies (hiring, training and retention of sufficient and competent human resources) • Difficulty in institutional communication, collaboration and alignment between CAR and SAM. • Different levels of maturity in the implementation of ANS and airport management models. • Weak alignment and little communication between global plans (GANP, GASP, GASEP). • Language and cultural barriers between regions. Lack of timely publication of ICAO Documents in all official languages 	<ul style="list-style-type: none"> •

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

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

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

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

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

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

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

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

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

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

(1) KPA s	(2) Focus Areas	(3) Performance Objectives	(4) Remarks
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

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

(1) KPA & Focus area	(2) Performance objectives	(3) KPI s	(4) Remarks
Capacity 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	
Capacity Capacity, throughput & utilization	Increase airport peak arrival capacity	KPI09	ASBU element impact non defined in GANP6
Capacity Capacity, throughput & utilization	Equip additional RWY ends with instrument approaches	KPI10	
Capacity Capacity, throughput & utilization	Reduce approach minima (ceiling & visibility)	KPI10	
Capacity Capacity, throughput & utilization	Increase airport arrival rate	KPI10	
Capacity Capacity, throughput & utilization	Apply merging & synchronisation of arrival flows	KPI10	
Predictability (Punctuality)	Increase the number (%) of flights adhering to the planned take-off time	KPI01	ASBU element impact non defined in GANP6
Predictability (Punctuality)	Increase the number (%) of scheduled flights adhering to the scheduled ON-block time	KPI14	ASBU element impact non defined in GANP6
Predictability (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) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01 (Var 2A)	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15 (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 PAULO			++	++	--	3,9						BASELINE 2021 (SBGR, SBKP, SBSP)
	TMA BRASILIA			++	++	--	3,6						BASELINE 2021 (SBBR)
	TMA Rio de JANEIRO			++	++	--	2,9						BASELINE 2021 (SBRJ, SBGL)

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(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01 (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 (CHS)	++						CHS= hourly sector capacity
	FIR LIMA			++	++	++							

<<<<

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01 (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 ANTOFAGASTA			++	++	++	++						
	FIR ++			++	++	++							

<<<<

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) 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

>>>>

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

>>>>

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) Remarks
		KPI01	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15	
COSTA RICA	MROC	++	++					RWY 07 VMC: 33 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

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



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

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

>>>>

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

>>>>

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

>>>>

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

>>>>

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs											(4) 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) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs TARGETS											(4) Remarks
		KPI01 (Var 2A)	KPI02	KPI04	KPI05	KPI06	KPI08	KPI09	KPI10	KPI13	KPI14	KPI15 (Var 1)	
BRAZIL	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						

>>>>

(1) STATE	(2) FIR/CTA/TMA /AIRPORT	(3) KPIs TARGETS											(4) Remarks
		KPI01 (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			++	++	++							

<<<<<

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

<<<

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

<<<<

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

>>>>

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

>>>>

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

>>>>

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

>>>>

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

>>>>

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

>>>>

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

>>>>

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

<<<

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) STATE	(2) FIR/CTA /TMA/AIRPORT	(3) ASBU Elements / Operational Improvements	(4) Dependencies and relations	(5) Start Year	(6) End Year	(7) Remarks
BRAZIL	SBGR SBBR SBGL	SURF-B0/1	----			KPI02, KPI13
	SBGR SBBR SBGL	APTA-B0/1	AMET-B0/1 AMET-B0/2 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 _s SAO PAULO, BRASILIA, RIO DE JANEIRO	RSEQ-B0/1	AMET-B0/1 AMET-B0/2 ACDM-B0/1 ACDM-B0/2			KPI08
	TMA _s SAO PAULO, BRASILIA, RIO DE JANEIRO	FRTO-B1/2	APTA-B0/1 APTA-B1/1 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 COMS-B0/1 COMS-B0/2 NAVS-B0/3			KPI06

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(1) STATE	(2) FIR/CTA /TMA/AIRPORT	(3) ASBU Elements / Operational Improvements	(4) Dependencies and relations	(5) Start Year	(6) End Year	(7) 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 SNET-B0/1			KPI06
	FIR LIMA	FRTO-B1/2	APTA-B0/1 APTA-B1/1 SNET-B0/1			KPI06

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

(1) STATE	(2) FIR /TMA/AIRPORT	(3) ASBU Elements / Operational Improvements	(4) Dependencies and relations	(5) 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° 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 EL	TBD	TBD	2023	2025	KPI01: Departure punctuality

(1) STATE	(2) FIR /TMA/AIRPORT	(3) ASBU Elements / Operational Improvements	(4) Dependencies and relations	(5) Start	End	KPI
CHILE	SCIE	APTA-B1/1 = PBN Approaches (with advanced capabilities)	APTA-B0/1 AMET-B0/1 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 AMET-B0/2	2023	2026	KPI11: Airport throughput efficiency
	SCEZ/CONCEPCIÓN	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
	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 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 AMET-B0/2	2023	2026	KPI11: Airport throughput efficiency
	SCFZ/ANTOFAGAST A	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
	SCFZ/ANTOFAGAST 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) STATE	(2) FIR /TMA/AIRPORT	(3) ASBU Elements / Operational Improvements	(4) Dependencies and relations	(5) 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) STATE	(2) FIR/CTA /TMA/AIRPORT	(3) ASBU Elements / Operational Improvements	(4) Dependencies and relations	(5) Start Year	(6) End Year	(7) 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 FRTO-B0/2 - Airspace planning and Flexible Use of Airspace (FUA) 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) FRT0-B0/2 - Airspace planning and Flexible Use of Airspace (FUA) AMET-B0/1 - Meteorological observations products AMET-B0/2 - Meteorological forecast and warning products 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) AMET-B0/1 - Meteorological observations products 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 ACDM-B0/1 - Airport CDM Information Sharing (ACIS) 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 form 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 /TMA/AIRPORT	ASBU Elements/operational improvements	KPI s						Remarks