



ICAO

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WORKING PAPER

NACC/WG/AGA/TF/1 — WP/07
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First North American, Central American and Caribbean Working Group (NACC/WG) Aerodromes and Ground Aids (AGA) Implementation Task Force Meeting (NACC/WG/AGA/TF/1)
Mexico City, Mexico, 3 to 7 July 2023

Agenda Item 6: GREPECAS Project F2: Aerodrome planning and Vol III of the Regional Air Navigation Plan

NATIONAL AND REGIONAL AIR NAVIGATION PLAN IN THE AGA AREA

(Presented by the Secretariat)

EXECUTIVE SUMMARY

This working paper presents relevant information and data in the AGA area for the National and Regional Air Navigation Plans in accordance with the Global Air Navigation Plan (GANP).

Action:	Suggest actions are under section 6.
<i>Strategic Objectives:</i>	<ul style="list-style-type: none">• Strategic Objective 1 – Safety• Strategic Objective 2 – Air Navigation Capacity and Efficiency
<i>References:</i>	<ul style="list-style-type: none">• Global Air Navigation Plan Strategy: https://www4.icao.int/ganpportal/GanpDocument#/• Global Air Navigation Plan (GANP): https://www4.icao.int/ganpportal/

1. Introduction

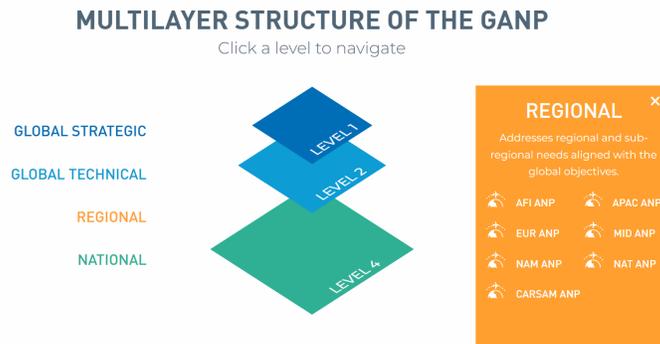
1.1. According to Global Air Navigation Plan Strategy, the regional and national levels of the Global Air Navigation Plan (GANP) ensure consistency from the development of operational improvements to their implementation. Such levels provide the global aviation community with a common basis for short- and medium-term implementation planning.

1.2. The regional level addresses regional and subregional performance and operational needs, differences, constraints and opportunities through the ICAO Regional Air Navigation Plans and other regional initiatives aligned with the global strategic and technical levels.

1.3. The national level focuses on State planning. The development of national air navigation plans, in coordination with relevant stakeholders and in alignment with regional and global plans, is a strategic part of the State's national aviation planning framework and is crucial to achieve the common vision being developed in the GANP.

2. Regional Air Navigation Plan (RANP)

2.1 The Regional Air Navigation Plans (RANPs) represents the regional level of the GANP, in which addresses regional and subregional performance and operational needs, differences, constraints and opportunities through the ICAO regional air navigation plans and other regional initiatives aligned with the global levels (see the figure below).

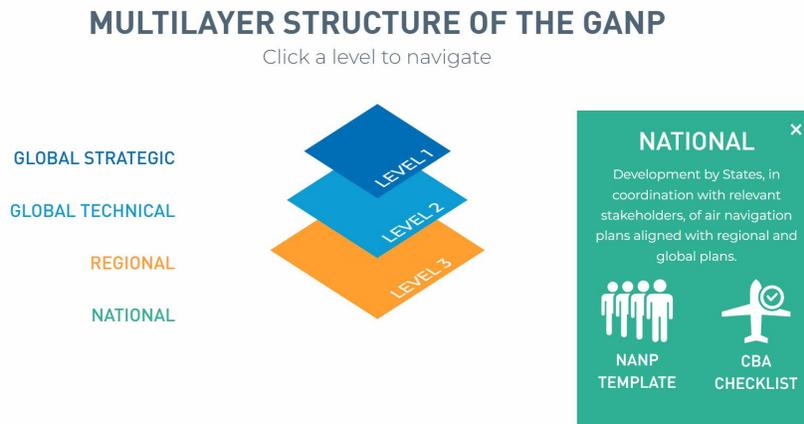


2.2 Since 2014, the ICAO Council decided to establish a new format for Regional Air Navigation Plans (RANPs). It was agreed that the new RANP would be composed by three volumes: Volume I would contain the steady elements of the plan, which amendment requires the approval of the Council, Volume II would contain the dynamic elements of the plan, which amendment does not require Council approval (approval is through regional agreement involving relevant Planning and Implementation Regional Groups (PIRGs)) and Volume III would contain the dynamic/flexible elements of the plan, with guidance for planning the implementation of air navigation systems and their modernization, taking into account emerging programmes such as Aviation System Block Upgrade (ASBUs) and related technology roadmaps outlined in the GANP.

2.3 In consequence of the decision of the ICAO Council, the CAR/SAM Regional Planning and Implementation Group (GREPECAS) has been working since 2015 to adapt the CAR/SAM ANP format and structure. Recently, in the Twentieth Meeting of the GREPECAS/20 (November 16 to 18, 2022), the version 0 of the e-ANP Volume III of the CAR/SAM Air Navigation Plan was approved, by Conclusion GREPECAS/20/07. **Appendix A** of this working paper presents the items from version 0 of the e-ANP Volume III of the CAR/SAM Air Navigation Plan related to airports, which should be developed by the States together with the airports.

3. National Air Navigation Plan (NANP)

3.1 The national level of the GANP, under the responsibility of the State, focuses on national planning. The development by States, in coordination with relevant stakeholders, of Air Navigation Plans as a strategic part of their national aviation planning frameworks and their alignment with relevant regional and global plans are crucial to achieving the common vision being developed in the GANP (see the figure below).



3.2 The complete NANP Template is scheduled to be published by the ICAO Headquarter in December 2023. Appendix B presents the contents that are foreseen in the NANP Template, with detail for the AGA area.

4. Key Performance Indicators (KPI), AGA Area

4.1 KPIs are quantitative means of measuring current/past performance, expected future performance as well as actual progress in achieving performance objectives. For Air Navigation Services, they provide information to be reviewed by States on service performance and support decision-making for operational improvements; <https://www4.icao.int/ganportal/ASBU/KPI>

4.2 According with GANP, all KPIs are related to operational aviation and airport services, supported by information and technology.

4.3 In the case of AGA area, the following KPIs are important to evaluate and measure;

1. KPI01: Departure punctuality
2. KPI02: Taxi-out additional time
3. KPI08: Additional time in terminal airspace
4. KPI09: Airport peak capacity
5. KPI10: Airport peak throughput
6. KPI11: Airport throughput efficiency
7. KPI12: Airport/Terminal ATFM delay
8. KPI13: Taxi-in additional time
9. KPI14: Arrival punctuality
10. KPI21: Number of runway incursions

11. KPI22: Number of runway excursions

Note: Appendix C provides a description of every KPI.

4.4 To obtain the results of the different KPIs it is necessary to obtain pre-set data that feeds the algorithm to calculate the KPI. Data collection involves asking the following questions:

- What type of data is it?
- What is the source of the data?
- What is the precision of the data?
- What is the periodicity with which the data is obtained?
- What are the formatting characteristics of the data?
- What is the data validation process?
- Who are the suppliers of the data?
- What is the metadata of the data (type of data, date, time, system that obtained it, who obtained it, etc.)? A clear and precise definition of the data.

5. Conclusion

5.1 Therefore, the following draft conclusion is presented for consideration:

DRAFT CONCLUSION	
NACC/WG/AGA/TF/XX	GRF PROJECT
<p>What:</p> <p>That, given the importance of developing the National and Regional Air Navigation Plans, the Task Force AGA concludes that it is important to develop and update the AGA Database and to develop a pilot project with an international airport in the CAR Region to develop the management process GANP KPI.</p>	<p>Expected impact:</p> <p><input type="checkbox"/> Political / Global</p> <p><input checked="" type="checkbox"/> Inter-regional</p> <p><input type="checkbox"/> Economic</p> <p><input type="checkbox"/> Environmental</p> <p><input checked="" type="checkbox"/> Operational/Technical</p>
<p>Why:</p> <p>Data and information about airports are important for the planning process, mainly to develop NANP and RANP according to GANP.</p>	
<p>When: 15 December 2023</p>	<p>Status: <input checked="" type="checkbox"/> Valid / <input type="checkbox"/> Superseded / <input type="checkbox"/> Completed</p>
<p>Who: <input checked="" type="checkbox"/> States <input checked="" type="checkbox"/> ICAO <input checked="" type="checkbox"/> Other: aerodrome operators</p>	

6. Suggested Action

6.1 The Meeting is invited to:

- a) Take note of the information presented in this WP;
- b) Review and, if appropriate, approve the draft conclusion presented in 4.1;
- c) Request that States develop their National and Regional Air Navigation Plans together with aviation stakeholders, and with the support of the ICAO Regional Office and GREPECAS; and
- d) Other actions that the meeting considers necessary.

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APPENDIX A

CAR/SAM AIR NAVIGATION PLAN

VOLUME III

CONTENT:

PART 0 — Introduction

PART I — General Planning Aspects (GEN)

PART II – Performance Management Planning and ANS Implementation (PMP)

Table PMP III-1 – Strengths, weakness, opportunities and threads in the (NAME) Region

Table PMP III-2 – List of performance objectives by KPA for the (NAME) Region

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

Table PMP III-4 – Performance baseline within the (NAME) Region

Table PMP III-5 – Performance targets and needs within the (NAME) Region

Table PMP III-6 – Selected ASBU Elements / Operational Improvements for the (NAME) Region

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

Table PMP III-8 – Performance benefits accrued form the implementation of the selected ASBU elements / Operational Improvements for the (NAME) Region

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

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) AIRPORT	(3) ASBU Elements / Operational Improvements	(4) Dependencies and relations	(5) Start Year	(6) End Year	(7) Remarks

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

**APPENDIX B
TITLE**

NATIONAL AIR NAVIGATION PLAN (NANP)

CONTENT

INTRODUCTION

VOL I, Part I - General

- Geographical scope
- Traffic Forecast
- Specific regional priorities

VOL I, Part II - Aerodromes

- **Introduction**
- **Aerodromes**
 - o **Domestic and/or International**
 - o **Heliports**
 - o **Current traffic and Traffic Forecast**

VOL I, Part III - CNS

VOL I, Part IV - ATM

VOL I, Part V - Meteorology

VOL I, Part VI - SAR

VOL I, Part V II - AIM

VOL II, Part I - General

VOL II, Part I I - Aerodromes

- **Introduction**
- **Aerodromes**
 - o **Name of the city and aerodrome, preceded by the location indicator.**
 - o **Designation of the aerodrome**
 - o **Required rescue and firefighting service (RFF)**
 - o **Aerodrome reference code (RC)**
 - o **Runway Designation numbers**
 - o **Visual aids for low visibility aerodrome operations**
 - o **Non-precision approach aids -Type of each of the runways**
 - o **Reduced runway declared distances for take-off**
 - o **Aerodrome capacity management**
 - o **Aerodrome capacity assessment and requirement**
 - o **Closure of regular aerodromes**
 - o **Scheduling aerodrome maintenance**
 - o **Other**

VOL I, Part III - CNS

VOL I, Part IV - ATM

VOL I, Part V - Meteorology

VOL I, Part VI - SAR

VOL I, Part V II – AIM

Vol III, Part I -General Planning method

Vol III, Part II –Performance management planning and ANS implementation (PMP)

STEP 1: DEFINE SCOPE, CONTEXT AND SET AMBITIONS

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

STEP 3: QUANTIFY OBJECTIVES, SET TARGETS AND CALCULATE NEEDS

STEP 4: SELECT SOLUTIONS

STEP 5: IMPLEMENT SOLUTIONS

STEP 6: ASSESS ACHIEVEMENTS

APPENDIX CKEY PERFORMANCE INDICATOR (KPI)"
KPIs (AGA)

No	KPI	Data Requirement	Data Feed Providers
1	KPI01: Departure punctuality	For each departing scheduled flight: Scheduled time of departure (STD) or scheduled off-block time (SOBT) Actual off-block time (AOBT)	Schedule database(s), airports, airlines and/or ANSPs
2	KPI02: Taxi-out additional time	For each departing scheduled flight: Scheduled time of departure (STD) or scheduled off-block time (SOBT) Actual off-block time (AOBT)	Schedule database(s), airports, airlines and/or ANSPs
3	KPI08: Additional time in terminal airspace	For each arriving flight: Terminal airspace entry time, computed from surveillance data (radar, ADS-B...) Actual landing time (ALDT) In addition, for the advanced KPI variants: Terminal airspace entry segment, computed from surveillance data (radar, ADS-B...) Landing runway ID	Airlines (OOOI data), airports, ADS-B data providers and/or ANSPs
4	KPI09: Airport peak capacity	Scheduling parameters for slot-controlled airports Airport Acceptance Rates (AAR), Airport Departure Rates (ADR)	Airports
5	KPI10: Airport peak throughput	For each flight: Actual landing time (ALDT) Actual take-off time (ATOT).	Airports

6	KPI11: Airport throughput efficiency	<p>For each arriving and/or departing flight:</p> <p>Actual landing time (ALDT) and take-off time (ATOT) Estimated landing time (ELDT) and take-off time (ETOT) (from flight plan)</p> <p>For each time interval:</p> <p>Declared landing capacity of the airport Declared departure capacity of the airport Declared total capacity of the airport</p>	Airports
7	KPI12: Airport/Terminal ATFM delay	<p>For each IFR flight:</p> <p>Estimated Take-off Time (ETOT) computed from the last filed flight plan Calculated Take-off Time (CTOT) ID of the flow restriction generating the ATFM delay Airport or terminal airspace volume associated with the flow restriction Delay code associated with the flow restriction</p>	ATFM
8	KPI13: Taxi-in additional time	<p>For each arriving flight:</p> <p>Actual landing time (ALDT) Actual in-block time (AIBT)</p> <p>In addition, for the advanced KPI variant:</p> <p>Landing runway ID Arrival gate ID</p>	<p>Airports (airport operations), airlines (OOOI data), ADS-B data providers and/or ANSPs.</p> <p>Note: OOOI Data refers to times of the actual aircraft movements of Gate Out, Wheels Off, Wheels On, and Gate In.</p>
9	KPI14: Arrival punctuality	<p>For each arriving scheduled flight:</p> <p>Scheduled time of arrival (STA) or scheduled in-block time (SIBT) Actual in-block time (AIBT)</p>	Schedule database(s), airports, airlines and/or ANSPs
10	KPI21: Number of runway incursions	<p>For each reported occurrence:</p> <p>Date of occurrence Airport of occurrence</p>	Airports and airlines
11	KPI22: Number of runway excursions	<p>For each reported occurrence:</p> <p>Date of occurrence Airport of occurrence</p>	Airports and airlines