



Agenda Item 1: ANS context (ATM/CNS) Global and Regional level

b) Status review of conclusions

STATUS OF IMPLEMENTATION OF SAM/IG/26 CONCLUSIONS BY PERUVIAN STATE

(Prepared by Peru)

SUMMARY

This information paper presents a brief summary on the progress made by the Peruvian State in the implementation of SAM/IG current conclusions.

References:

- National Air Navigation Plan – Perú
Version Oct 2020, based on 6th GANP Edition.
- SAM/IG meeting reports.

1. Background

1.1 ICAO invitation to the Twenty-seventh Workshop/Meeting of the SAM Implementation Group (SAM/IG/27) was received this April 19th, in which each participating State is requested to submit an Information Note summarizing the progress made for each of the Conclusions indicated in Appendix 1A, from the Report of the Workshop/Meeting SAM/IG/26 (Virtual, 20-23 September 2021).

2. Analysis

2.1 In compliance with the above, an analysis of the status of implementation of the conclusions and / or tasks originated in SAM /IG meetings is presented, which cover the following topics:

Implementation of Performance-Based Navigation (PBN) in the SAM Region

2.2 **Conclusion SAM/IG/14-6:** Projects and/or action plans for PBN redesign of the main South American TMAs

2.2.1 In accordance with the Jorge Chávez International Airport expansion project, which includes the commissioning of a second runway parallel to the current one and a new passenger terminal, the redesign of the Lima Terminal Area (TMA Lima) is scheduled for 2023. Likewise, the construction of the new Chinchero – Cusco International Airport, contemplates the redesign of the Cusco Terminal Area (TMA Cusco) from the year 2025.

2.3 **Conclusion SAM/IG/21-01:** Objectives of PBN implementation harmonized at regional and interregional level

2.3.1 As foreseen in the National Air Navigation Plan (PNNA), the implementation of RNP-AR procedures has been planned in all national airports in Peru. By 2022, the publication of SID, STAR and IAP RNP-AR procedures is planned at the following airports:

- Arequipa
- Cajamarca
- Pisco
- Tacna
- Tarapoto

2.3.2 Likewise, it must be emphasized that the Peruvian State has reached 100% in the implementation of version 05 of the ATS SAM Route Network, that is, all ATS routes in Peru's upper airspace have RNAV 5 navigation specification.

2.4 **Conclusion SAM/IG/25-04:** Adoption of the Regional Guide on the Implementation of PBN Visual runway procedures.

2.4.1 At present, Peruvian State has PBN procedures for visual flight runways at different airports in the country, which comply with the provisions of the Regional Guide prepared by GESEA.

2.4.2 The PBN procedures for visual flight runway currently published in the AIP Peru, are:

Airport	Visual RWY	PBN Procedure	Implemented since:
Cajamarca	RWY 34	RNP RWY34 (AR)	2010
Chiclayo	RWY19L (TWY adapted as temporal RWY)	RNP RWY19L (AR)	2021
Piura	RWY01	RNP RWY01 (LNAV/VNAV)	2013
Trujillo	RWY20	RNP RWY20 (AR)	2013

The tailored PBN procedures for visual flight runway are:

Airport	Visual RWY	Tailored PBN Procedure	Implemented since:
Arequipa	RWY 28	RNP RWY28 (AR) – LATAM	2014
Jaen	RWY 34	RNP RWY34 (AR) – LATAM	2016
Jauja	RWY31	RNP RWY31 (AR) – LATAM	2017
Juliaca	RWY 12	RNP RWY12 (AR) – LATAM RNP RWY12 (AR) – VIVA AIR RNP RWY12 (AR) – SKY AIRLINES	2010 2019 2020
Pucallpa	RWY20	RNP RWY20 (LNAV/VNAV) – LATAM	2012
Tacna	RWY 20	RNP RWY20 (AR) – LATAM	2013
Tumbes	RWY 14	RNP RWY14 (AR) – LATAM	2012

2.5 **Conclusion SAM/IG/25-05:** Studies on RNAV visual flight procedures - RVFP

2.5.1 Peru has not implemented RNAV Visual Flight Procedures.

Contingency Plans and Airspace Efficiency

2.6 **Conclusion SAM/IG/23-04:** Procedure to be applied in case of radioactive clouds or accidental release of radioactive material

2.6.1 In 2013, the ATS MET Charter Agreement was prepared and signed, and was updated in 2019, in which the three literals indicated in the conclusion are complied with.

2.7 **Conclusion SAM/IG/21-02:** Consolidation of the implementation of 40NM longitudinal separation minima between adjacent FIRs in the SAM Region and promotion of the Action Plan for the implementation of a 20NM separation.

2.7.1 Peruvian State currently has the ATS agreement letters that include the longitudinal separation of 40 NM with two States of the region according to the following detail:

Adjacent State	Longitudinal Separation	Effective since
Bolivia	N/A	N/A
Brasil	TBD	TBD
Colombia	40 NM	2019
Chile	TBD	TBD
Ecuador	40 NM	2016

2.8 **Conclusion SAM/IG/25-01: Implementation of strategic direct routing - EDE**

2.8.1 Peruvian State, through SUP 01/21: Implementation of Strategic Direct Routing (EDE) in the upper oceanic airspace of the Lima FIR, dated June 1, 2021, informed users of the implementation of direct routing for the oceanic area of the Lima FIR.

2.9 **Conclusion SAM/IG/25-02:** Adoption of the guidelines of the SAM ATS contingency framework plan (MCATS/SAM) and alignment of national plans.

2.9.1 The guidelines of the Framework Plan for Contingencies ATS of the SAM Region (MCATS / SAM) are being applied, and has begun with the inclusion of the formation of the operational group for decision making by the supplier.

2.9.2 Supplement AIP 06/21 on December 18, 2021 publishes the ATS Contingency Plan for the Peruvian State, which considers the establishment of the ATS Contingency Operational Group (AOCG), as responsible for carrying out the necessary coordination in case of contingency, in accordance with the guidelines of the Framework Plan for Contingencies ATS of the SAM Region (MCATS / SAM).

2.9.3 Peruvian State is also preparing the Guide for the Implementation of the National Contingency Plan, which addresses ICAO guidelines.

2.10 **Conclusion SAM/IG/25-03:** Activities for the development of the SAM ATM/CNS contingency framework.

2.10.1 The ATS supplier of Peru has within its operational instruction manual, procedures to meet ATM/CNS contingencies for the different aerodromes at the national level; however, the elaboration of an ATM/CNS Contingency Plan at the national level is planned.

2.10.2 A regional guide is deemed necessary to standardize the aforementioned Plan in the States of the Region.

ATFM Implementation

2.11 **Conclusion SAM/IG/24-01:** procedure for PDA drafting and disseminating and developing ATFM Teleconferences.

2.11.1 On April 2, 2020, Peruvian State began the preparation of the PDA taking as a reference the template of Appendix D of the Guide for the implementation of the ATFM service in the SAM region 2020-2025, which is published through the ANSP CORPAC website (<https://portal2.corpac.gob.pe/Main.asp?T=5719>) and disseminated via e-mail to the regional ATFM SAM units.

2.11.2 In order to work on various issues related to the provision of the ATFM service, since 2020, ATFM Programs and Ad Hoc Teleconferences are developed, in which the Collaborative Decision Making (CDM) methodology is applied.

2.11.3 Teleconferences cover various topics and involve the provider (ATS, ATFM), airlines, airport operator, as well as the authority (navigation and itineraries). Among the topics that are discussed we find: the daily sending of the schedule of coordinated flights (without itinerary) by the airport operator to the Affluence Management Unit (FMU Lima); meteorological information (SIGMET, TAF, etc.) for the development of the ATFM Daily Plan; the coordination for the declaration of temporary capacities, the development of BRISA feed data and the regional Dashboard, among others.

2.12 **Conclusion SAM/IG/23-01:** Implementation of ATFM measures in accordance with Doc 9971, and coordination in case of ATS contingencies.

2.12.1 Regarding paragraphs a) and b) of the conclusion, the ATFCM Operational Concept for the Peruvian State (CONOPS ATFCM) is being prepared. The document describes the functions of the Posts (FMP) and Dependencies (FMU) of flow Management, as well as the profile, competencies of the ATFM personnel and the guide for the ATFM Instruction Program referred to all those who participate in it.

2.12.2 The application of ATFM measures, indicated in paragraph c), are strictly based on Doc 9971 to manage when there is a capacity/demand imbalance, a fact identified only at the Jorge Chavez International Airport (AIJC). In this sense, the AIJC is the only airport that has an FMP, and the ATFM service is applied from 7 a.m. to 7 p.m. and only to domestic flights departing from a province to AIJC (Lima). The need to expand the operation of the FMP is being assessed.

2.12.3 Paragraph d) is fulfilled since the application of ATFM measures does not include international flights.

2.12.4 As for literal e), the ATFM process is applied correctly, fulfilling each of its phases: Strategic, Pre-tactic, Tactical and Post-operations analysis and performance control.

2.13 **Conclusion SAM/IG/26-01:** Adoption of the ATFM Operations Plan (OPSAM)

2.13.1 Peruvian State, through the provider CORPAC and the Authority – DGAC, participates in the "Operational Teleconference ATFM SAM - BRISA", in which it acts by sharing essential information at the strategic, pre-tactical and post-operational levels among the States of the SAM region. Participation is made in both the weekly BRISA and the monthly BRISA. Also, according to regional planning, Peru is ready to be the HOST of the same when required.

2.13.2 Regarding the implementation of the "Regional Dashboard of indicators", the State generates the requested data monthly in compliance with the agreed format, sent to GESEA for updating it in compliance with the established deadline.

2.14 **Conclusion SAM/IG/26-02:** Adoption of the Guide on the implementation of ATFM in the SAM Region 2022- 2026.

2.14.1 Regarding the implementation of the different phases established in the Guide for the implementation of the ATFM in the SAM Region 2022-2026, the Peruvian State is in the process of implementing the first three phases, as indicated below:

➤ Phase I

The Peruvian State in accordance with the provisions of national regulations has developed the measurement of runway capacity and ATC sectors in those aerodromes where demand has exceeded or is expected to exceed the capacity of the ATS system, in this sense it has developed such measurement in the aerodromes of Lima and Cusco not identifying to date to carry out the study in other aerodromes nationwide; on the other hand, in relation to the forecast of growth in demand for air operations, an analysis of demand growth has been carried out with a focus on the post-COVID recovery.

➤ Phase II A

There are means that originate, distribute ATFM information to the ATS dependencies through the AMHS, likewise, the PDA and the Post Operations Daily Report are prepared according to the ICAO guidelines which are disseminated through the ANSP website and via email respectively. In addition, the CDM methodology has been implemented through Ad Hoc Teleconferences between stakeholders. As for the lack of completion of this phase, note that, although we have the RAP 311 that gives the general guidelines, the NTC ATFCM has not yet been published, being currently in preparation.

➤ Phase II B

To date, the State does not have a dedicated software for ATFM applications, which allows the integration of AMAN/DMAN and ACDM. An analysis and implementation of the dynamic update of the capacities and demands of the Jorge Chavez International Airport is currently being developed, which is in the first phase. Additionally, CDM coordination with the support areas (especially with the MET service) for the realization of the daily Scheduled Teleconferences is pending.

Operational implementation of new automated ATM systems and integration of existing ones

2.15 **Conclusion SAM/IG/25-06:** Approval of the ATM/FPL Roadmap and of the format for acknowledgment (ACK) and rejection (REJ) of flight plans and associated messages.

2.15.1 Peruvian State receives the flight plans transmitted via AMHS from 95% of the airlines with scheduled international flights, giving acknowledgment with the messages of acknowledgment of reception (ACK) and rejection (REJ).

2.15.2 As for companies with domestic flights such as LATAM, VIVA AIR and SKY AIRLINES, they present their flight plans via AMHS through the different controlled aerodromes within the Peruvian State.

2.16 **Conclusion SAM/IG/21-03:** Activities required in the AIDC pre-operational phase to reduce migration times to the operational phase.

2.16.1 Peruvian State was one of the first implementing activities and solutions aimed at solving the problems encountered in the pre-operational phase during the AIDC interconnection processes between Adjacent Centers of the States, in that sense the present conclusion is fully implemented.

Adjacent State	AIDC effective from
Bolivia	N/A
Brasil	TBD
Colombia	2020
Chile	2018
Ecuador	2018

2.17 **Conclusion SAM/IG/23-03:** Adaptation of AMHS terminals of aeronautical meteorology users.

2.17.1 To date, all users of the AMHS Messaging Network use AMHS Terminals, for sending MET information in traditional format (TAC). These Terminals have the capacity to send attachments, which is consistent with what is required, considering that the sending of meteorological information with the GML or XML format, is attaching the message with said extension, which is done manually.

2.17.2 The new requirement, indicates that the AMHS Terminals build the attachment with the OPMET information in IWXXM format and transmit it (interconnections) in an AMHS message or that an application is installed that encodes the OPMET information in the IWXXM format and generates a file in XML format automatically to be sent by the AMHS system. This requirement is not implemented to date, because the current AMHS system does not support this functionality, which is why the provider CORPAC S.A is in the process of acquiring a new system.

2.18 **Conclusion SAM/IG/25-07:** Implementation of ADS-B Satellite through a Regional Technical Cooperation Project.

2.18.1 Peruvian State is in the process of implementing the terrestrial ADS-B surveillance system, in addition to the ADS-C / CPDLC services for ocean areas are already contracted. Regarding the ADS-B Satellite, the Air Navigation Plan of Peru has considered its implementation as an ASBU element within a medium term, for which all technical studies must be carried out in advance based on an operational requirement, cost-benefit analysis and other corresponding analyses.

2.19 **Conclusion SAM/IG/26-03:** Revision of the CNS tables of Vol. II of the CAR/SAM Air Navigation Plan and support in the elaboration of Vol. III of the ANP CAR/SAM, on the CNS topics.

2.19.1 During the last Interop WG Workshop organized by the SAM Regional Office, Peru provided the updated Tables of VOL II of the CAR/SAM Air Navigation Plan. In that same Workshop, the Peruvian State presented its specialists designated to participate in the New ANP sub-group in the CNS specialty to support the elaboration of VOL III as well as the updated list of participants from the other subgroups.

State/Station	Category	Requirement				Remarks
		Type	Signaling Speed	Protocol	Code	
1	2	3	4	5	6	7
PERU						
Lima-M						
Bogota	P1	SAT/d and MPLS	64 k	TCP/IP	IA-5	REDDIG
Brasilia	P1	SAT/d and MPLS	64 k	TCP/IP	IA-5	REDDIG
Ezeiza	P1	SAT/d and MPLS	64 k	TCP/IP	IA-5	REDDIG
Caracas	P1	SAT/d and MPLS	64 k	TCP/IP	IA-5	REDDIG
Guayaquil	P1	SAT/d and MPLS	64 k	TCP/IP	IA-5	REDDIG
La Paz	P1	SAT/d and MPLS	64 k	TCP/IP	IA-5	REDDIG
Montevideo	P1	SAT/d and MPLS	64 k	TCP/IP	IA-5	REDDIG
Santiago	P1	SAT/d and MPLS	64 k	TCP/IP	IA-5	REDDIG
United States (Atlanta)	P1	SAT/d and MPLS	64 k	TCP/IP	IA-5	MEVA REDDIG

3. Suggested actions

3.1. The Meeting is invited to:

- a) Take note of the information provided in this Information Paper; and
- b) discuss matters that deem appropriate.