



Agenda

Item 2:

Report of activities and deliverables of the GESEA and Subgroups

b) ATM implementation. Progress of the Subgroups.

ACTIVITIES OF SG2 PANS OPS

(Presented by Secretariat)

SUMMARY

The purpose of this paper is to present the recent activities of GESEA SG2 PANS OPS. Measures are proposed to mitigate resource constraints in IFPD units.

References:

- SAM/IG Meetings
- GESEA Plenary Meeting
- Fourth Meeting of the SG2 PANS OPS, Virtual, June 6-7, 2023

1. Background

1.1 The Airspace Study and Implementation Group – GESEA has subgroup 2, intended for activities for the standardized application of the ICAO PANS OPS criteria. The Coordinator of SG2 is Mr. Diego Gamboa (Argentina).

1.2 On April 10, 2023, SG2 held a Preparatory Meeting to adjust the agenda for the fourth SG2 PANS OPS Meeting (GESEA/SG2/4 - Virtual) that took place on June 6 and 7, 2023.

1.3 The following paragraphs analyze the topics of the SG2/4 PANS OPS Meeting and the progress of the activities of the Subgroup. All the material and presentations (Spanish only) of this meeting are available at the following link:

<https://oaci.sharepoint.com/:f:/r/sites/SAM-CAR-ANS-GESEA/Shared%20Documents/GESEA/SG2%20PANS%20OPS/GESEA%20SG2%204%20x%20junio%202023?csf=1&web=1&e=yxVkJa>

2. Analysis

2.1 SG2/4 addressed the subgroup's outcomes and deliverables during 2023, and the scope of the conclusions of SAM/IG/29. The Secretariat presented the status of each conclusion.

2.2 The need to analyze the validity of Conclusion SAM/IG/21/01 "Objectives of harmonized PBN implementation at the regional and interregional level" was identified, since the Region is already focusing on broader airspace optimization projects (e.g., APTA and FRTO implementation of the GANP), and in view of the progress of PBN implementation in the SAM States, which exceeds 92% average for approaches (Baro VNAV -APV). The analysis of other Conclusions is presented below.

2.3 The Meeting agreed on the reconfiguration of two (02) Task Groups. The first of these will be called WG IMPLEMENTATION to address the following issues of Regional implementation:

- a) Roadmap 2022 – 2026: Optimization based on SAM airspace performance. Campaign for review/update of PBN procedures. Action Plans and Monitoring Tables.
- b) Flight procedures with the use of RF in RNP APCH.
- c) Circular 359 – "Elaboration of procedures for visual maneuvers with prescribed defeats using the required navigation performance".
- d) Redesign of TMA based on PBN.
- e) SATDIS tool ver. 2, for RATE availability.
- f) Measurement of CO2 savings in PBN deployments.
- g) Revisions/update of IFP flight procedures, in accordance with Doc. 8168 deadlines.
- h) Other issues associated with the implementation of the PBN.

Mr. Carlos Castañeda, delegated for INAC Venezuela, was appointed as rapporteur of the GT.

2.4 The second will be called GT DOCS. PANSOPS, to address the study or revision of the following documents and texts:

- a) Revision of Doc. 9613 Performance-based Navigation (PBN) Manual, Fifth Edition, (Advance unedited). Other ICAO documentation for PBN and PANS OPS. Update requirements for SRVSOP Circulars.
- b) Action S28/01 of SAMIG28; PANS-OPS Recommendations for Harmonization of Instrumental Procedures in the SAM Region.
- c) Other technical documents.

Mr. Eloy Tafur of DGAC PERU was appointed as rapporteur of the GT.

2.5 It was agreed that Subgroup 2 and its corresponding WGs should frame their activities within the development of the 2022-2026 Roadmap. In this document, in section 6, you will find the support metrics for the aforementioned period where the elements of implementation and the agreed goals and dates are exposed. See **Appendix A** (Spanish only) for the Tables linked to the tasks in the Roadmap.

2.6 It was also noted that the aforementioned Roadmap (in bilingual version) can be found in the library, at the following link:

<https://oaci.sharepoint.com/:f/r/sites/SAM-CAR-ANS-GESEA/Shared%20Documents/GESEA/BIBLIOTECA?csf=1&web=1&e=aCEZga>

Review/Update of IFP Procedures

2.7 Delegates from Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Panama, Paraguay, Peru, Uruguay, and Venezuela analyzed the status of the Revision/Update of PTIs in their States, within the parameters of 5 years of seniority.

2.8 All States maintain an inventory of their PFIs and are approaching the upgrade with different approaches. This includes the retirement of obsolete procedures, such as NDB-based procedures. Another option is the replacement of conventional procedures by PBN procedures, but subject to a previous study, according to the preparation of users, airlines, etc.

2.9 Progress is being made in IFP also through collaboration with airlines. The AACs of the Region have enabled the surveillance of IFPD services, within the framework of the USOAP PQs.

2.10 Difficulties were recognized in some States with respect to the unavailability of design software, or lack of personnel or other resources, including up-to-date and accurate topographic surveys. In this context, the Secretariat has coordinated the support of RLA 06 901 to conduct a PANS OPS Recurrent Course for 2024 (see the proposed 2024 Working Plan below).

2.11 Given the limitations of resources, it is necessary to evaluate the feasibility of a more effective mechanism to achieve synergies in our region based on cooperation for the implementation of PBN and design/update of instrument flight procedures. There are precedents of recent activities with positive results in Bolivia, Paraguay and Uruguay. At the same time, LATAM, through its specialist Raymundo Hurtado, will support initiatives for the review or optimization of procedures.

2.12 It has been recognized that the first priority for upgrade tasks is in the ILS Approach procedures as they are precision procedures with decision height minimums in the range of 200 – 100 ft (respectively for Cat 1 and Cat 2). An initiative to monitor the age of flight procedures is presented in the EXCEL table below.

2.13 As a reference, the scheme of regional FPP (Flight procedures programme) that support member states in matters of PANS OPS training, support for procedure design and quality assurance should be analysed. See link to the information presented in 2019 at the SAM Office, on the FPP of the Asia Pacific Region:

<https://www.icao.int/SAM/Documents/2019-06901-IFPD/SESION%2014%20%20APAC%20FPP.pdf>

Conclusion SAM/IG/14-6: Projects and/or Action Plans for the Redesign of PBNs of the main South American TMAs

2.14 Delegates agreed on the need to adapt an XLS Table to monitor PBN implementation in TMA redesigns, including data on the age of designs and age of linked surveys, RF segment use initiatives, etc.

2.15 It is envisaged that the Table could also be used to include domestic airports at a later stage. This Task in turn would drive the development of the 2022-2026 Roadmap. See an example of the proposal in Table XLS, see **Appendix B** (Spanish only).

Circular 359 – "Elaboration of procedures for visual maneuvers with prescribed defeats using the required navigation performance".

2.16 Mr. Gamboa performed a presentation on Circular 359, clarifying the technical parameters of the VPT procedures and some options regarding Doc. 8168 and Doc. 9905. Circular 359 does not specifically refer to the application for a visual runway, however, the Regional Guide is limited to this type of runway.

2.17 A distinction was made between the instrumental and visual parts of the VPT procedure. Aspects of the processes to be carried out by operators (in Appendix A of the Circular) for aircraft equipment, authorisations, were analysed.

2.18 LATAM, presented the application of a VPT approach at the San Jose airport in Costa Rica for the B-763 fleet. The Operations Officer of the SAM Regional Office, Mr. Javier Puente, coordinated LATAM's participation in the next RASG-PA Meeting in Washington, USA.

2.19 The Meeting tasked the DOCS PANS OPS GT to expand the studies on Circular 359 and its implications with the Regional Guide.

Revision of Doc. 9613 Performance-based Navigation (PBN) Manual, Fifth Edition, (Advance unedited).

2.20 Mr. Tafur, supported by Mr. Hernan Ibarra (Argentina) and Mr. Everaldo Lima (Brazil) through a presentation, addressed the revision of the Doc. 9613 Performance-based Navigation (PBN) Manual, fifth edition. Changes have been made to the organization of the document and new concepts have been included. In some cases, information has been eliminated or consolidated because it is already contained in ICAO Docs. 9992 and 9997. Changes have also been made to PBN terminology and data in the Navigation Specification Tables.

SATDIS tool ver. 2, for RAIM availability

2.21 The Secretariat expressed the need for the support of SG2 for the dissemination of the use of the SATDIS tool for the availability of RAIM in the MAR region. It was reported that a direct access to the website of this tool has been enabled from the GESEA channel in MS TEAMS, showing how the tool can be accessed.

2.22 Likewise, it was reported that there is a list of the focal points of the states in the first pages of the web application, therefore, the focal points of subgroup 2 should contact in their states those in charge of the implementation of SATDIS designated by the aeronautical authority, to offer support from the perspective of the PBN implementation. It was noted that most of these current SATDIS managers do not belong to the area of air navigation.

Measuring CO2 Savings in PBN Deployments

2.23 Regarding the measurement of the CO2 emissions savings that are generated by the implementation of PBN flight procedures, the Secretariat noted that these data are relevant for administrations to be able to show progress in environmental protection issues, however, caution should be taken in the workload that it may mean. For the Flight Procedure Design Units, the task of keeping the environmental community informed about the aforementioned savings. It should be noted that there are already programmes and activities in the administrations for environmental goals, including the ICAO CORSIA programme, to which the States of the MAR region have joined.

Other SG2 Matters

2.24 The Secretariat outlined the need to analyze the PANS OPS Recommendations for harmonization of instrumental procedures in the South American region. These are contained in conclusion SAM/IG/18. The PANSOPS DOCS GT was tasked with carrying out the review of these recommendations and analyzing the relevance of deepening their implementation or discarding them given the time that has elapsed since their formulation.

2.25 The new ICAO ISTAR 4.0 website was presented, and some improvements to its tools compared to the previous version were explained. The data on the SAM Region was analyzed in terms of PBN implementation, reaching 92.38%, that represents 206 of 223 runway thresholds of international airports are implemented.

2.26 Specifically, the Secretariat reported on the actions mandated by the SAMIG/29 meeting to GESEA Subgroup 3. The rapporteurs of the two GTs took note of the actions to be developed according to the field of specialization.

2024 Working Plan

2.27 The Work Plan for the year 2024, supported by RLA /06 901, is shown below;

Activities	Fechas	Objectives / Deliverables
GESEA Plenary Meeting/7	Virtual, 5 to 8 March	<ul style="list-style-type: none"> Organization of the implementation of efficiency and capacity initiatives. 2023 Subgroup Deliverables Review and adjustments of the PTA for Subgroups SG1 – SG2 – SG3 and respective Task Groups. Activities follow up.
Recurrent Course PANS OPS - PBN	Lima, Peru, June 10-14	PANS OPS Recurring Course for Designers with PBN Design Expertise.
GESEA SG2 PANS OPS Meeting	Virtual, 11, 12 13 September	Follow-up of studies and activities of PBN implementation and optimization of the IFPD service.

Scheme for synchronizing GESEA Meetings

J PEREIRA	SG1 GT FRTO – 4TH TUESDAY & WEDNESDAY
D KUC	SG1 GTPLAN/LOA ATS – 1ST MONDAY
C CASTAÑEDA	SG2 GT IMPLAN – 2ND THURSDAY
E TAFUR	SG2 GT DOCS PANS OPS – CONVENES ACCORDING TO PROGRESS
A DUARTE	SG3 GT PLAN DCB – LAST MONDAY
J CORNELIO	SG3 GT DOCS ATFM – 2ND MONDAY
L COSTA	SG3 GT DOCS ATFM – CONVENES ACCORDING TO PROGRESS

3. Suggested Actions

3.1 The Meeting is invited to:

- a) analyse the information provided in this paper;
- b) discuss actions for diligent attention to SG2 issues;
- c) analyze the validity of Conclusion SAM/IG/21/01;
- d) assess how to mitigate the lack of resources in some flight procedure design units;
- e) analyze options to strengthen the activities of the PANS OPS, based on horizontal cooperation; and
- f) Validate the 2024 work plan.

APPENDIX A
Roadmap Tables
(Spanish only)

MÉTRICAS DE SOPORTE PARA EL PERÍODO 2022-2026				
ELEMENTOS	ALCANCE	MÉTRICAS	METAS / FECHAS	ESTATUS A JUNIO 2021
<p>3) PBN SID</p> <p>SID en los aeropuertos internacionales con operaciones internacionales seleccionados. (alternativamente pueden ser consideradas SID omnidireccionales donde exista bajo volumen de tránsito aéreo)</p>	<p>Aeropuertos internacionales (donde aplique)</p>	<p>Indicador: % de aeropuertos internacionales con operaciones internacionales regulares con SID PBN.</p>	<p>90% para 2022</p> <p>100% para 2024</p>	<p>67.7% de los 100 aeropuertos internacionales con SID PBN implantadas.</p>
		<p>Métrica de soporte: número de aeropuertos internacionales con operaciones internacionales regulares con SID PBN implantadas.</p>	<p>Nota: La nueva base de planificación para el cuatrienio considerado en referencia a los Aeropuertos Internacionales figura en la Tabla AOP-1 del ANP CAR/SAM</p>	

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MÉTRICAS DE SOPORTE PARA EL PERÍODO 2022-2026				
ELEMENTOS	ALCANCE	MÉTRICAS	METAS / FECHAS	ESTATUS A JUNIO 2021
<p>4) PBN STAR</p> <p>STAR en los aeropuertos internacionales con operaciones internacionales regulares considerados en 2014: 1680</p>	<p>Aeropuertos internacionales (donde aplique)</p>	<p>Indicador: % de aeropuertos internacionales regulares con operaciones internacionales regulares con STAR PBN, donde se justifique la utilización de las STAR.</p>	<p>90% para 2022</p> <p>100% para 2024</p>	<p>52.5% de los 100 aeropuertos internacionales con STAR PBN implantadas.</p>
		<p>Métrica de soporte: número de aeropuertos internacionales regulares con operaciones internacionales regulares con STAR PBN implantadas, donde que se justifique dicha implantación.</p>	<p>Nota: La nueva base de planificación para el quinquenio considerado en referencia a los Aeropuertos Internacionales figura en la Tabla AOP-1 del ANP CAR/SAM</p>	

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MÉTRICAS DE SOPORTE PARA EL PERÍODO 2022-2026				
ELEMENTOS	ALCANCE	MÉTRICAS	METAS / FECHAS	ESTATUS A JUNIO 2021
5) Aplicaciones de la técnica de CCO y CDO a las salidas y llegadas	Todos los Estados	Indicador: % de aeropuertos internacionales con llegadas y salidas con aplicaciones CCO y CDO.	40% para 2022 60% para 2024 80% para 2026	20% de aeropuertos internacionales con CCO/CDO implantados
		Métrica de soporte: Número de aeropuertos internacionales con llegadas y salidas con aplicaciones CCO y CDO.		
<p>Nota:1) No siempre los CCO/CDO pueden ser implantados conjuntamente, ya que dependen de la complejidad del área terminal considerada.</p> <p>Nota: 2) El CDO no está necesariamente relacionado a la implantación de STAR. El Estado podrá crear procedimientos específicos que garanticen la aplicación de CDO en espacios aéreos con bajo volumen de tránsito aéreo, sin la aplicación de STAR.</p>				

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MÉTRICAS DE SOPORTE PARA EL PERÍODO 2022-2026				
ELEMENTOS	ALCANCE	MÉTRICAS	METAS / FECHAS	ESTATUS A JUNIO 2021
6) Diseño de las TMA con aplicación de la PBN Línea base 2020: 54 TMA seleccionadas	TMA con aeropuertos INTL regulares (donde aplique)	Indicador: % de TMA seleccionadas con aplicación del concepto de espacio aéreo PBN que sirven a aeropuertos internacionales.	85% para 2022 90 % para 2023 100% para 2024	(44/54) 81% de TMA seleccionadas con diseño PBN de acuerdo a la base considerada.
		Métrica de soporte: Número de TMA seleccionadas con aplicación del concepto de espacio aéreo PBN que sirven a aeropuertos internacionales.		
<p>Nota: La base considerada es de 54 áreas terminales (TMA) de los aeropuertos internacionales más importantes de la región</p>				

MÉTRICAS DE SOPORTE PARA EL PERÍODO 2022-2026				
ELEMENTOS	ALCANCE	MÉTRICAS	METAS / FECHAS	ESTATUS A JUNIO 2021
<p>9) Aproximaciones con guía vertical (APV) aeropuerto internacional</p> <p>APV en aeropuertos internacionales (RES. A37-11 Asamblea OACI)</p>	Todos los Estados	<p>Indicador: % de aeropuertos internacionales con procedimientos de aproximación con guía vertical</p> <p>Métrica de Soporte: número de umbrales de pista IFR de aeropuertos internacionales con procedimientos APV implantadas</p>	<p>93% para 2022</p> <p>96% para 2023</p> <p>100% para 2024</p>	(192 de 217) 88.5 % de umbrales IFR de aeropuertos internacionales con procedimientos APV implantados
<p>10) Aproximaciones con guía vertical (APV) aeropuerto nacional</p> <p>APV en aeródromos nacionales IFR, así como aeródromos con pista de vuelo visual seleccionadas.</p>	Todos los Estados	<p>Indicador: % de aeródromos nacionales con procedimientos APV</p> <p>Métrica de Soporte: número de aeródromos nacionales controlados con procedimientos APV implantadas</p>	<p>40% para 2022</p> <p>60% para 2024</p> <p>80% para 2026</p>	TBD por el SG2 de GESEA

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MÉTRICAS DE SOPORTE PARA EL PERÍODO 2022-2026				
ELEMENTOS	ALCANCE	MÉTRICAS	METAS / FECHAS	ESTATUS A JUNIO 2021
<p>11) Rutas PBN (RNAV-5 o RNP2) del espacio aéreo superior</p> <p>Rutas RNAV implantadas en el espacio aéreo superior donde exista necesidad de canalizar el flujo grandes volúmenes de tránsito aéreo.</p>	Todos los Estados	<p>Indicador: % de rutas (RNAV-5 o RNP2) del espacio aéreo superior donde exista necesidad de canalizar el flujo grandes volúmenes de tránsito aéreo.</p> <p>Métrica de Soporte: número de rutas del espacio aéreo superior con alguna especificación de navegación PBN y exista necesidad de canalizar el flujo grandes volúmenes de tránsito aéreo.</p>	<p>90 % para 2022</p> <p>100 % para 2023</p>	(136 de 165) 82.4 % de rutas (RNAV-5 o RNP2) del espacio aéreo superior.

APPENDIX B
(Spanish only)

Perú



HOY

5 AÑOS ATRÁS

19-Oct-2023

19-Oct-2018

TMA's		AEROPUERTOS								
		JEPPS	TIPO IFP	OCA/DA (ft)	OCH/DH (ft)	FECHA DISEÑO	FECHA ULTIMO LEVANT. OBSTACULOS	FECHA DE RE-DISEÑO	VENCE DISEÑO	STATUS
		RWY16L								
LIMA	SPJC LIMA-CALLAO/Jorge Chávez Intl	11-1	CAT I	245	200	6-Jan-2020	6-Jan-2022	6-Jan-2023	7-Jul-2027	ok
		11-1A	CAT II Y III	145	100	7-Jan-2020	6-Jan-2022	6-Jan-2019	7-Jul-2023	VENCE
		11-3	CAT I	245	200	8-Jan-2020		23-Dec-2023	22-Jun-2028	ok
		12-20	RNP AR			9-Jan-2020		23-Dec-2023	22-Jun-2028	ok
		13-1	VOR			10-Jan-2020		23-Dec-2023	22-Jun-2028	ok
		13-2	VOR							
		10-2	STAR							
		10-2A	STAR							
		10-2B	STAR							
		10-2C	STAR							
		10-2D	STAR							
		10-2E	STAR RNAV							
		10-2F	STAR RNAV							
		10-3	SID							
		10-3A	SID RNAV							
		10-3B	SID							
		10-3C	SID RNAV							
		10-3D	SID							
		10-3E	SID							
		10-3F	SID RNAV							
		10-3H	SID RNAV							
		10-3K	SID RNAV							
		RWY16R								
		11-2	CAT I							
		11-2A	CAT I							
		11-4	CAT I							
		12-21	RNP AR							

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