



**Agenda Item 4: Report on activities and deliverables for the GESEA and Subgroups**

**TRAINING IN PBN PROCEDURE DESIGN - LIMA, PERU**

**(Prepared by Brazil)**

**SUMMARY**

This working paper presents information on the advanced training in performance-based navigation (PBN) procedure design, held in Lima, Peru, between May 12 and 30, 2025. The training was organized by GESEA with the participation of instructors from Brazil and Peru. The event aimed to strengthen technical capabilities in PBN procedures in the SAM Region.

**References:**

- Doc 8168 Vol. II PANS-OPS, 20th ed.
- Doc 9613 – Performance-based Navigation (PBN) Manual
- Regional Project RLA/06/901; y
- GESEA Meeting.

**1. Background**

1.1 As part of regional efforts to consolidate the implementation of performance-based navigation (PBN) in the SAM Region, intensive training in procedure design was conducted in Lima, Peru. This training was organized in response to the need to keep the technical staff of the States up-to-date. It was identified through surveys conducted among SAM Region Member States. The activity combined distance learning (DLE) with personal training.

1.2 The course aimed at developing specific technical capabilities in RNAV and RNP procedure design, and to prepare new specialists to meet the growing demand in the region's Member States.

**2. Analysis**

2.1 The course was developed in two phases:

- a) EAD phase: from February 3 to 7, 2025, with the participation of 28 students.
- b) In-person phase: May 12-30, 2025, with 18 participants in Lima.

2.2 Representatives from the following States participated: Argentina, Bolivia, Brazil, Chile, Cuba, Colombia, Ecuador, Panama, Paraguay, Peru, Uruguay and Venezuela.



*Figure 1 - Representatives of the States*



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2.3

Topics included:

- a) Fundamentals of PBN navigation;
- b) Development of RNAV arrival (STAR) and departure (SID) procedures, using RF leg;
- c) RNP approaches with Baro-VNAV; and
- d) Practical workshops and application exercises.

2.4

The event featured instructors Fábio Luiz Langowski (Brazil) and Luis Perales (Peru), who guided the theoretical and practical activities, promoting technical exchange among the participating States.

2.5

The course represented a successful framework for regional cooperation, allowing for the consolidation of common knowledge and methodologies, in addition to strengthening the network of trained professionals in the region.

2.6 Considering the current operational context, it is suggested that the activities of Subgroup SG2 (PANS OPS) be reactivated. This reactivation will allow progress in the quality requirements of ICAO Doc 8168, ensure the validity of existing procedures and maintain regional consistency in PANS OPS standards.

3. **Suggested actions**

3.1 The Meeting is invited to:

- a) Take note of the results achieved in ongoing PBN training;
- b) Recognize the importance of regional initiatives such as this one for harmonizing and strengthening technical capabilities
- c) Encourage States to continue supporting regional training programs coordinated by GESEA and the ICAO SAM Regional Office;
- d) Consider periodically including similar training programs within the framework of Project RLA/06/901; and
- e) Reactivate the SG2 PANS OPS Subgroup and appoint a coordinator for 2025 and 2026.

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