International Civil Aviation Organization

THE EIGHTH MEETING OF THE ASIA/PACIFIC GBAS/SBAS IMPLEMENTATION TASK FORCE (GBAS/SBAS ITF/8)

(Melbourne, Australia, 12-14 May 2026)

Agenda Item 2: Reports of relevant meetings and workshops

REPORT OF THE INSTRUMENT FLIGHT PROCEDURE PANEL ACTIVITIES

(Presented by ICAO)

SUMMARY

Following the last IFPP meeting in March 2026, ICAO has issued an electronic bulletin on 29 April 2026 inviting all States who have published LPV procedures to reassess them due to "an inconsistency between the assumptions behind the obstacle assessment criteria and the navigation systems standards for approach procedures based on SBAS."

1. INTRODUCTION

1.1 The ICAO Instrument Flight Procedure Panel (IFFP) met on 16-27 March 2026 in Beijing, China. Following this meeting, the ICAO Secretary General has issued an Electronic Bulletin to inform all Member States about the reassessment of the missed approach assumptions for the SBAS procedures.

2. DISCUSSION

Please see the Electronic Bulletin in Attachment A.

3. ACTION REQUIRED BY THE MEETING

3.1 The meeting is invited to note the information contained in this paper and share it with the relevant people within your State;

– – – – – – – – – – – – –

Attachment A

Electronic Bulletin 2026/13

International Civil Aviation Organization

ELECTRONIC BULLETIN

For information only

EB 2026/13 29 April 2026

REASSESSMENT OF EXISTING APPROACH PROCEDURES BASED ON SATELLITE-BASED AUGMENTATION SYSTEMS (SBAS)

1. This is to advise States of concerns relating to instrument procedure design, specifically impacting the missed approach segment of satellite-based augmentation systems (SBAS) approaches. States implementing these types of approaches are advised to ensure that procedure design entities (either State operated or private) and regulators responsible for the oversight of procedure design are made aware of the contents of this Electronic Bulletin.

2. The specific issue is regarding an inconsistency between the assumptions behind the obstacle assessment criteria and the navigation systems standards for approach procedures based on SBAS. As a result, the protection provided in the missed approach segment may be inadequate for some navigation systems authorised for localizer performance with vertical guidance (LPV) operations. This Electronic Bulletin provides methods to determine whether minima adjustments are required for existing procedures, and for the assessment of new approach procedures based on SBAS.

3. Aircraft systems are based on the *Minimum Operational Performance Standards (MOPS) for airborne navigation equipment (2D and 3D) using the Global Positioning System (GPS) augmented by SBAS* contained in RTCA DO-229F. Based on the MOPS, some navigation systems revert to terminal mode at the lateral navigation (LNAV) missed approach point (MAPt), or when no MAPt exists, at the landing threshold point/fictitious threshold point, applying scaling and alerting functions based on a 1.0 NM navigation accuracy requirement throughout the missed-approach phase. As such, on a missed-approach predicated on a 0.3 NM navigation accuracy requirement up to the first missed-approach waypoint, the change to 1.0 NM navigation accuracy may not ensure the intended level of protection.

4. All approach procedures based on SBAS need to be reassessed for potential impact. Helicopter approach procedures using the required navigation performance (RNP) 0.3 NM navigation specification in the missed approach are not affected. States are encouraged to ensure that evaluations are carried out, and that any resulting actions are implemented.

5. Short term action for existing published procedures to ensure safety of operation is detailed in the table below:

999 Robert-Bourassa Boulevard
Montréal, Quebec
Canada H3C 5H7

Tel.: +1 514-954-8219
Fax: +1 514-954-6077

E-mail: icaohq@icao.int
www.icao.int

#	**Scenario**	**Action**
1	SBAS Procedure developed using RNP 0.3 (CAT H) Navigation Specification in the missed approach.	Not affected.
2	SBAS Cat I approach procedure has the identical OAS parameters and PBN based missed approach as the ILS procedure to the same runway and LPV OCA/H ≥ ILS OCA/H.	1) LPV OCA/H ≥ ILS OCA/H, no further action required. 2) If LPV OCA/H < ILS OCA/H, raise LPV OCA/H to ILS OCA/H
3	SBAS APV I and CAT I procedure existing on the same chart as LNAV/VNAV RNP approach.	1) If LPV OCA/H ≥ LNAV/VNAV OCA/H, no further action required. 2) If LPV OCA/H < LNAV/VNAV OCA/H, raise LPV OCA/H to LNAV/VNAV OCA/H
4	SBAS APV I and CAT I procedure existing on the same chart as LNAV RNP approach only.	1) If LPV OCA/H ≥ LNAV OCA/H, no further action required. 2) If LPV OCA/H < LNAV OCA/H, raise LPV OCA/H to LNAV OCA/H
5	SBAS APV I and CAT I procedure published with LPV line of minima only.	Restrict use of the procedure until the missed approach is re-evaluated using the long-term action described in paragraphs 6 and 7.
6	SBAS NPA procedure published with LP line of minima only.	Restrict use of the procedure until the missed approach is re-evaluated using the long-term action described in paragraph 6.

6. Long-term action for existing published or new SBAS procedures, using established criteria from the *Procedures for Air Navigation Services — Aircraft Operations* (PANS-OPS, Doc 8168), Volume II — *Construction of Visual and Instrument Flight Procedures* to determine operationally safe margins is provided in the table below (optional):

#	**Procedure Type**	**Action**
1	SBAS NPA	Evaluate the required OCA/H for an RNP APCH NPA
2	SBAS APV I	1) Evaluate the required OCA/H for an SBAS APV I and 2) Evaluate the required OCA/H for a Baro-VNAV 3) If LPV OCA/H < LNAV/VNAV OCA/H, raise LPV OCA/H to LNAV/VNAV OCA/H
3	SBAS CAT I	Evaluate the required OCA/H for an ILS CAT I procedure with the same OAS parameters and PBN based missed approach.

7. Alternative long-term action for existing published or new procedures, reducing impact to the required obstacle clearance altitude/height (OCA/H) in obstacle rich environments for SBAS approach with vertical guidance (APV) I and CAT I procedures only is provided below (optional):

Evaluate obstacles within the expanded missed approach protection area as follows:

a) Based on the SBAS obstacle assessment surfaces (OAS), apply the methodology described in PANS-OPS (Doc 8168), Volume II, Part II, Section 1, Chapter 1, 1.5.2.3 to expand the total protection area of the missed approach, extending the SBAS OAS Z and Y surfaces, until the area width applicable to RNP 1 is reached.

b) Apply 1.5.2.4 and 1.5.3 of the chapter mentioned in a) and assess all obstacles within the expanded missed approach area for potential impact on the procedure's required OCA/H.

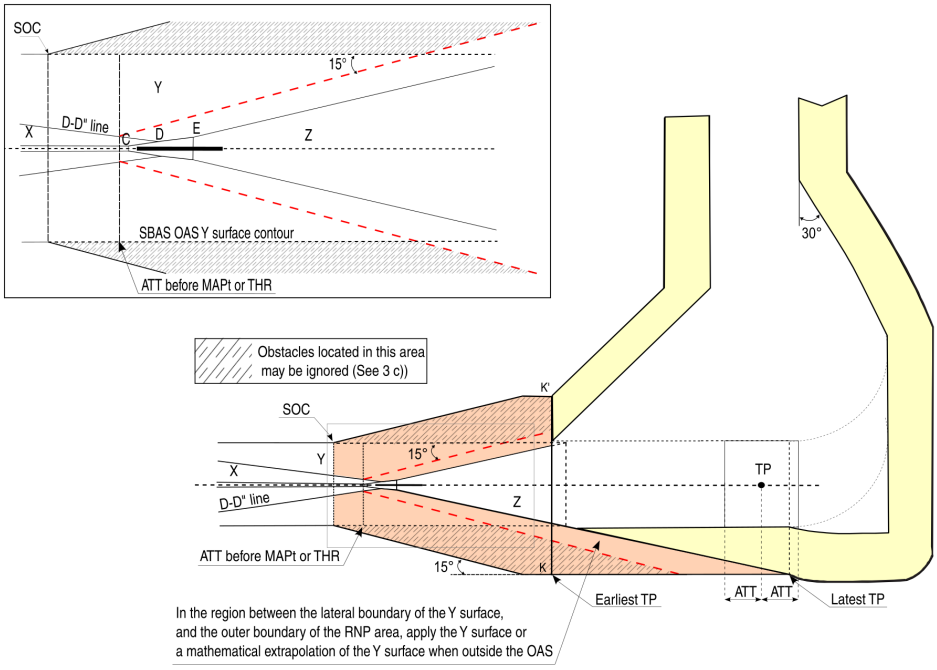
c) Due to the nature of the procedure some of the obstacles identified in the area described in a) may be ignored when determining the OCA/H:

   i) Draw a line perpendicular to the final approach track at along-track tolerance (ATT) (444 m (0.24 NM)) before the published missed approach point. If no missed approach point is published, draw the line at ATT (444 m (0.24 NM)) before the landing threshold point / fictitious threshold point.

ii) Locate the intersection of the line drawn in i) with the outer edge of the X surface on both sides of the nominal track.

iii) Use the two points determined in ii) as starting points to draw two lines towards the missed approach, splaying 15° from the nominal initial missed approach track. Extend to the outer boundary of the area determined in a), or on the inside of the turn, the earliest turning point, whichever is earlier.

iv) Obstacles prior to this line and outside of the corridor of 0.95 NM (0.8 NM CAT H) semi area width (½ AW) may be excluded from the assessment (see figure below).



8. The criteria in PANS-OPS (Doc 8168), Volume II are being re-evaluated, and a change will be published as soon as it is confirmed that this will address the known issue. In the interim, States are strongly recommended to act in accordance with the contents of this Electronic Bulletin to ensure the safety of SBAS operations.

9. For further information you are invited to contact Carys Knowles, Chief Operational Safety Section, by email at cknowles@icao.int and officeanb@icao.int .

– – – – –

Issued under the authority of the Secretary General