



International Civil Aviation Organization

THE FIFTH MEETING OF THE ASIA/PACIFIC GBAS/SBAS IMPLEMENTATION TASK FORCE (APAC GBAS/SBAS ITF/5)

(Tokyo, Japan, 21- 23 June 2023)

Agenda Item 2: Progress on the work of Expert Groups constituted to: - Review and revise the GBAS and SBAS safety assessment guidance document related to anomalous ionospheric conditions.

DRAFT OF THE REVISION OF IONO GUIDANCE FOR SBAS

(Presented by Chair of Expert Group 3-1)

SUMMARY

This paper presents the draft of the revision of the SBAS safety assessment guidance document related to anomalous ionospheric conditions. The meeting is invited to review the document and provide any comments.

1. INTRODUCTION

1.1 The 3rd meeting of the GBAS/SBAS Implementation Task Force (GBAS/SBAS ITF/3) decided to establish an expert group (Expert Group 3-1) to revise the GBAS and SBAS safety assessment guidance documents related to anomalous ionospheric conditions (hereinafter referred to as “GBAS iono guidance document” and “SBAS iono guidance document”, respectively.

1.2 The expert group identified the points of update for the GBAS and SBAS iono guidance documents. The workplan was presented to the 4th meeting of the GBAS/SBAS Implementation Task Force (GBAS/SBAS ITF/4).

2. DISCUSSION

2.1 Since the GBAS/SBAS ITF/4 meeting, the expert group met online four times (21 September 2022, 2 November 2022, 8 December 2022, and 5 June 2023). The draft SBAS iono guidance document was developed and reviewed by the expert group members. The main points of update are summarized in Table 1.

Table 1. List of major updates to the SBAS iono guidance document.

ID	Action	Result
S-1	Information on new SBAS services under development/deployment.	SDCM, BDSBAS, KASS, South-PAN, and A-SBAS have been introduced.
S-2	Distinction between the disturbed and quiet ionospheric conditions for SBAS	A new section on this topic has been added.

S-3	GAGAN ionospheric threat model.	In addition to the currently existing WAAS/MSAS ionospheric threat model, a new section on the GAGAN ionospheric threat model based on MLDF (Multi-Layer Data Fusion) has been added in the Appendix A.
S-4	Information on BDSBAS.	The interface control documents (ICD) of BDSBAS which have been published and publicly available has been referred to.
S-5	Information on DFMC SBAS	Differences from L1 SBAS from ionospheric effects perspective only have been incorporated.
S-6	Post Adoption activities	New guidance material included as part of post-adoption activities of SBAS for ionospheric monitoring

2.2 One of the major updates is the new section on the distinction between the disturbed and quiet conditions for SBAS. It should be noted that the distinction for GBAS has already been included in the GBAS iono guidance document.

2.3 Another major update is the GAGAN ionospheric threat model. It is an important update, because it was developed to account for characteristics of the equatorial and low latitude ionosphere.

2.4 The draft SBAS iono guidance document (Appendix A) was reviewed and accepted by the expert group members.

Conclusion/Decision GBAS-SBAS ITF/5/02 - SBAS safety assessment guidance document related to anomalous ionospheric conditions	
What: That, the SBAS safety assessment guidance document related to anomalous ionospheric conditions Edition 2.0 provided in Appendix A to this WP be adopted.	Expected impact: <input type="checkbox"/> Political / Global <input type="checkbox"/> Inter-regional <input type="checkbox"/> Economic <input type="checkbox"/> Environmental <input checked="" type="checkbox"/> Ops/Technical
Why: Major updates to enrich the contents and reflect the progress of SBAS development and implementation in the region and DFMC SBAS SARPs development.	Follow-up: <input type="checkbox"/> Required from States
When: 23-Jun-23	Status: Draft to be adopted by PIRG
Who: <input checked="" type="checkbox"/> CNS Sub group <input type="checkbox"/> APAC States <input checked="" type="checkbox"/> ICAO APAC RO <input type="checkbox"/> ICAO HQ <input type="checkbox"/> Other: XXXX	

3. ACTION REQUIRED BY THE MEETING

- 3.1 The meeting is invited to:
- a) review the draft SBAS iono guidance document;
 - b) provide any comments and feedbacks; and
 - c) endorse the draft for presentation at the CNS-SG meeting.