



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 GBAS

(Presented by Chair of Expert Group 3-1)

SUMMARY

This paper presents the draft of the revision of the GBAS 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 GBAS 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 GBAS iono guidance document.

Item #	Action	Result
G-1	Update GAST D related parts of the guidance document.	Materials based on the latest GAST D SARPs and related standards have been included in the draft together with existing materials on GAST D.
G-2	Consider work by NSP GBAS Working Group (GWG) IGM ad hoc group	Not much matured materials are available yet. The IGM ad hoc of NSP is occupied with the DFMC GBAS related tasks. NSP has started working on

		ICAO GBAS Manual which will include guidance on ionospheric threat mitigation.
G-3	Add explanation to the protection levels.	Materials about the protection levels have been included in the draft.
G-4	Input on GBAS ionospheric data analysis based on the experience in the GBAS Proof of Concept project at Suvarnabhumi International Airport, Bangkok.	A summary of how to develop the GBAS ionospheric threat model based on the experience and input by Thailand has been included as a new section.

2.2 Regarding the item G-2, it was noted that the ICAO NSP GWG has started working on ICAO Manual on GBAS and the guidance on ionospheric threat mitigation will also be included. Activities of ICAO NSP GWG IGM ad hoc group and GBAS Manual development will be monitored by the Chair of the expert group and will be reported to future meetings.

2.3 Contents on the dual-frequency and multi-constellation (DFMC) GBAS have not been included in the draft GBAS iono guidance document, because the DFMC GBAS SARPs development has just started, and its conceptual architecture has not been fully finalized yet.

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

Conclusion/Decision GBAS-SBAS ITF/5/01 - Draft GBAS safety assessment guidance document related to anomalous ionospheric conditions	
What: That, the GBAS 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 reflect the development of GAST D SARPs and progress of GBAS development and implementation in the region.	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:	

3. ACTION REQUIRED BY THE MEETING

3.1 The meeting is invited to:

- a) review the draft GBAS iono guidance document.
- b) provide any comments and feedbacks; and
- c) endorse the draft for presentation at the CNS-SG meeting.