



International Civil Aviation Organization

THE FOURTH MEETING OF THE ASIA/PACIFIC GBAS/SBAS IMPLEMENTATION TASK FORCE (APAC GBAS/SBAS ITF/4)

(Video conference, 11- 12 May 2022)

Agenda Item 3: 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; and to
- Draft a Guidance Document on Implementation Process for GBAS/SBAS.

REPORT OF EXPERT GROUP 3-1 ACTIVITIES

(Presented by Chair/Lead/Co-Lead of Expert Group 3-1)

SUMMARY

This paper presents reports on the activities of the Expert Group 3-1 for revision of the GBAS and SBAS safety assessment guidance documents related to anomalous ionospheric conditions.

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.

2. DISCUSSION

2.1 The first meeting of the Expert Group 3-1 was held on 20 January 2022 as a video conference together with another expert group to prepare the Guidance Document on Implementation Process for GBAS/SBAS (Expert Group 3-2). Members of each expert group were identified.

2.2 Dr. Surendra Sunda from India and Mr. Slamet Supriadi from Indonesia were appointed as a Lead and Co-Lead, respectively. Dr. Susumu Saito from Japan who is also one of the co-chairs of the GBAS/SBAS ITF was appointed to serve as a Chair of the Expert Group 3-1.

2.3 The 2nd meeting of the Expert Group 3-1 was held on 11 April 2022 as a video conference. There were 14 participants from 7 States and 1 Organization. The list of participants are included in the Attachment.

2.4 Current versions of both the guidance documents were reviewed by the meeting.

2.5 The meeting found that the GBAS guidance document should include topics related to GAST D, ICAO NSP activities, and others including explanation to the protection levels and updates on experiences of ionospheric threat analysis by States/Administrations.

2.6 SBAS documents should include updates to L1 SBAS including new SBAS systems, explanation to the disturbed ionosphere for SBAS and the GAGAN ionospheric threat model. DFMC SBAS should also be included.

2.7 Work plan was discussed and the Expert Group 3-1 agreed to have online meetings on the monthly basis to develop a first draft by Fall 2022.

2.8 More detailed contents of the discussions are included in the Attachment. Any contribution not only from the Expert Group members but also from all the members of the GBAS/SBAS ITF are welcome.

3. ACTION REQUIRED BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this papers; and
- b) discuss any relevant matters as appropriate.

Attachment

Summary of discussion of the Experts Group on Iono Guidances 11 April 2022

Agenda

1. Round table
2. Review of documents
3. Items to be updated
4. Allocation of members for items to be updated
5. Work plan

Participants (14)

Susumu Saito (Chair, Japan)
Surendra Sunda (Lead, India)
Slamet Supriadi (Co-Lead, Indonesia)
Li Qiang (China)
Li Hong Xiao (China)
Li Xiao (China)
John Moor (IATA)
Anurag Gupta (India)
Michael Rizada (Philippines)
Sarawoot Rungruengwajake (Thailand)
Thamawoot Pocathikorn (Thailand)
Le Vu Truong Son (Vietnam)
Ngueyen Hai Viet (Vietnam)
Ngueyen Manh Tuan (Vietnam)

Discussion Summary

- GBAS safety assessment guidance related to anomalous ionospheric conditions
Discussed based on WP06–GBAS/SBAS ITF/3.
GAST D (GBAS Approach Service Type D) related descriptions should be added. (Some of them have already been incorporated.) Chair to draft GAST D related parts.
Activities at ICAO NSP are introduced.
Annex 10 Attachment D is being revised to include guidance on the ionospheric threat mitigation. It may be made into a separate manual (“GBAS Manual”).
ICAO NSP GBAS Working Group (GWG) has an ad hoc group on ionospheric threat mitigation (IGM ad hoc). Its activity is now pending. Chair to contact the group to utilize their work.
Other updates
Explanation to Protection Levels should be updated with equations. Chair to draft this.
Thailand will input on GBAS ionospheric data analysis based on their experiences in the GBAS Proof of Concept project at Bangkok Svarnabhumi Airport.
- SBAS safety assessment guidance related to anomalous ionospheric conditions
Updates on L1 SBAS
New SBAS services under development/deployment should be included.
Distinguishing disturbed and quiet conditions for SBAS should be included.
GAGAN ionospheric threat model and related descriptions should be included. (GAGAN ionospheric threat model can be described in an Appendix. But related descriptions on

evaluation and application of the threat model can be included in the main body of the document.

India will draft text and an appendix.

China will provide information on BDSBAS.

DFMC SBAS

General information and differences from the L1 SBAS in terms of ionospheric threat mitigation should be included.

Ionospheric delay effects are removed in DFMC SBAS. But scintillation effects remains, which can be a continuity issue.

- Work plan

Milestones

11-12 May 2022: GBAS/SBAS ITF/4

WP to report the progress is expected.

4-8 July 2022: CNS-SG/26

WP to report the GBAS/SBAS ITF is expected.

Fall 2022: Due of a first draft (3 years after establishment of the TF).

Meetings

The expert group will have online meetings on a monthly basis.

Next meeting should be scheduled in late April to discuss input to GBAS/SBAS ITF/4.

Chair to coordinate the date of the next meeting.
