



ICAO NSP GWG IGM ad hoc activities

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- * Ionosphere Gradient Mitigation (IGM) ad hoc group
 - under the ICAO Navigation Systems Panel (NSP) GBAS Working Group (GWG)
- * Background
 - In development of GAST-D SARPs, it was found that operation of a GAST-D ground station in the low magnetic latitude regions is subject to impacts due to the ionosphere
 - Plasma bubble gradient is prevalent which when detected will cause exclusion of the impacted satellite
 - Ionospheric scintillation is also present which in severe cases can cause a loss of satellite lock in the Reference Receiver or in less severe cases increase the noise level on measurements and monitor thresholds
 - NSP GWG decided to continue working on further improvement of GBAS performance in the low magnetic latitude region.
- * Core members are from manufacturers and research institutes that supports NSP members

- * To continue support of the SARPs relative to GBAS (not limited to GAST-D) operations in low latitude regions where ionosphere activity is high
 - Develop guidance material associated with application of GBAS in low latitude regions to minimize the impact on continuity and availability.
 - Consider maintenance changes to the SARPs that could improve low latitude operations of GBAS.
- * IGM ad hoc group is working on
 - GAST-D performance assessments in the low latitude regions
 - Scintillation effects on GBAS integrity monitors

- * Published in September 2016
 - ✓ **Review is required by APAC GBAS/SBAS ITF/I**
- * Contents:
 - Ionosphere conditions to consider for GBAS (GAST-C)
 - Development of ionosphere threat model
 - Post-implementation activities
 - ✓ Consideration for GAST-D needs updated
- * Consideration in relation to the NSP GWG IGM ad hoc activities
 - Update of the APAC guidance should be harmonized with the guidance material being prepared by the IGM ad hoc
 - Feedback from APAC States to the IGM ad hoc group would be useful
 - Data sharing from APAC States to the IGM ad hoc activities would be welcome
 - ✓ Susumu Saito (ENRI, Japan) can act as a liaison to the IGM ad hoc