



*International Civil Aviation Organization*

**THE SECOND MEETING OF IONOSPHERIC STUDIES TASK FORCE (ISTF/2)**

15 – 17 October 2012, Bangkok, Thailand

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**Agenda Item 2: Review outcome of relevant meetings/conferences**

b) CNS/MET SG/16 & APANPIRG/23

**REVIEW OF CNS/MET SG/16 & APANPIRG/23 OUTCOME**

(Presented by the Secretariat)

**SUMMARY**

This paper informs about ISTF related outcome of the Sixteenth CNS/MET Sub-group Meeting and the Twenty Third Meeting of APANPIR. Actions taken on the recommendations made in ISTF/1 meeting have been discussed in this paper.

**1. INTRODUCTION**

1.1 Sixteenth Meeting of Communications, Navigation and Surveillance/Meteorological Sub-Group (CNS/MET SG/16) of APANPIRG was held in ICAO APAC Office, Bangkok from 23 to 27 July 2012. The meeting was attended by 115 participants from 26 States/Administrations, 3 International Organizations and 2 Telecommunication Service Providers.

1.2 Twenty Third Meeting of the Asia/Pacific Air Navigation Planning and Implementation Regional Group (APANPIRG/23) was held in Bangkok from 10 to 14 September, 2012. 118 participants from 26 Member States, 2 Special Administrative Regions of China and 5 International Organizations participated in the meeting.

## 2. DISCUSSION

2.1 CNS/MET Sub-group of APANPIRG, in its Sixteenth meeting reviewed the outcome of the Ninth Meeting of PBN Task Force held from 27 to 29 March 2012 held in Bangkok and recommended draft Conclusion 16/10 inviting ICAO to plan an Asia/Pacific GNSS Landing System (GLS) Seminar to provide information on emerging GLS technology, airport and airline GLS planning, and the development of applicable standards. The proposal was subsequently adopted by APANPIRG through Conclusion 23/26 and the Seminar is scheduled to be held in Sydney on 6 and 7 December, 2012.

2.2 Both CNS/MET Sub-Group and APANPIRG reviewed the outcome of various GNSS related regional meetings/workshops in their Sixteenth and Twenty Third Meeting respectively. Both CNS/MET Sub-group and APANPIRG meetings were informed about the contributions made by ICAO APAC Office in the First Asia-Oceania Space Weather Alliance (AOSWA) Workshop (held in Chiang Mai from 22 to 24 Feb, 2012) and Multi-GNSS for Sustainable Development Workshop organized by UN ESCAP in Bangkok on 21 and 22 March, 2012.

2.3 Report on the outcome of *First Meeting of Ionospheric Studies Task Force* was presented to both the meetings. Suggested changes to the ISTF Terms of Reference were reviewed by CNS/MET Sub-group and the revised Terms of Reference were adopted by the CNS/MET SG through following Decision:

***Decision 16/13 – Terms of Reference for the Ionospheric Studies Task Force (ISTF)***

*That, the revised Terms of Reference for the Ionospheric Studies Task Force (ISTF) provided in Appendix G be adopted.*

*Terms of Reference adopted by the meeting can be viewed at Appendix G to the CNS/MET SG/16 meeting placed on ICAO APAC Website.*

2.4 CNS/MET Sub-Group and APANPIRG noted/agreed with the following recommendations of ISTF

- a) Task Force should first confirm if there is a need to use a more complex (compared to the existing model) ionospheric model in the Asia/Pacific region after analysis of the shared and go to the next step of developing it if it is required;
- b) Shared data should be used only for the study and development of ionospheric models in Asia/Pacific Region for the purpose of satellite based air navigation;
- c) Tasks and Task Leads identified to progress the objective of developing regional ionospheric models for GBAS and SBAS;
- d) ISTF will meet twice a year during its initial phase in view of the forthcoming solar max and for developing a harmonized approach for data collection and analysis to maximize the benefits;

- e) ISTF was of the opinion that a mechanism for sharing the data in the data archive should be worked out; and
- f) A suggestion was made to create a web-based forum to exchange information and ICAO APAC Office was invited to look into the possibility of accommodating this requirement in the regional website.

2.5 CNS/MET SG/16 considered Task Force's recommendation that States, which are not participating in the ISTF activities, be urged to share ionospheric data from their national sources and based on its recommendation APANPIRG/23 adopted following Conclusion:

***Conclusion 23/28 – Sharing of Ionospheric Data***

*That, the States which are not participating in the Ionospheric Studies Task Force be urged to share ionospheric data from their national sources with the Task Force to support development of regional ionospheric models for GBAS and SBAS.*

2.6 Both the meetings noted and appreciated the excellent meeting arrangements made by Japan Civil Aviation Bureau (JCAB) and Electronic Navigation Research Institute (ENRI) and thank both the organizations for hosting the meeting.

2.7 Japan informed CNS/MET Sub-group that completed data collection template had been received from eight states and 542 stations had been nominated as data source for ionospheric delay measurement and 37 stations had been nominated as data sources of ionospheric scintillation measurements.

2.8 Hong Kong, China shared the strategy and experience in collecting and sharing GNSS data to support the ionospheric studies and development of Ground Based Augmentation System (GBAS) in ASIA/PAC region. The paper highlighted the limited scintillation monitoring facilities available in the region. Hong Kong China recommended and the meeting agreed that ICAO should be requested to provide guidance on collection of scintillation data from strategic locations for ionospheric studies in the ASIA/PAC region before the next solar storm peak in 2013. ISTF is invited to consider development of the requested guidance document.

2.9 Both the meetings were also informed about the status of GBAS implementation in Australia and elsewhere in the world. It was informed that ENRI has been operating CAT – I GBAS functional prototype at Kansai International Airport (RJBB) to collect data for Hazardous Misleading Information (HMI) analysis since January 2011. Details on the results of the tests carried out on this GBAS system were provided.

2.10 CNS/MET SG/16 discussed issues related to space weather and their impact on the communication and navigation systems. It was considered that space weather information function should be more appropriately covered as a multidiscipline approach at the regional level. CNS/MET Sub-group after an extensive deliberation on the subject recommended a draft Decision inviting CNS and MET Sub-groups to propose a strategy to engage APANPIRG and its contributory bodies in addressing all aspects of space weather in the regional context. Based on CNS/MET Sub-group recommendation, APANPIRG/23 adopted following Decision:

*Decision 23/48 – Aspect of Space Weather*

*That, CNS and MET SGs review the impact of space weather in the CNS and MET area and report to APANPIRG.*

2.11 Under Agenda Item 18 of the CNS/MET Sub-group, meeting was reminded that the CNS and MET Sub-groups will be meeting separately from next year onwards. New Terms of Reference were approved by APANPIRG/22 for the two Sub-groups. ISTF will be report to the CNS Sub-group from 2013 onwards.

2.12 Issues related to interference on GNSS frequencies were discussed in the meetings. Information on the mitigation actions taken to remove these interferences was also informed.

**3. ACTION BY THE MEETING**

3.1 The meeting is invited to:

- a) meeting is invited to note ISTF related outcome of the two meetings; and
- b) progress the work assigned to it by the CNS/MET Sub-group.

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