



International Civil Aviation Organization

THE SIXTH MEETING OF IONOSPHERIC STUDIES TASK FORCE (ISTF/6)

Bangkok, Thailand, 19 – 21 January 2016

Agenda Item 5: Work plan and next meetings toward completion of tasks, and assessment of possibility to disband the Task Force

REVIEW OF ISTF ACTION LIST

(Presented by Secretariat)

SUMMARY

This paper presents the status the ISTF action list for review and update by the meeting.

1. INTRODUCTION

- 1.1 An action list is being maintained by the ISTF.
- 1.2 The list has been updated with all actions taken in ISTF webconferences #4 to 8.

2. DISCUSSION

- 2.1 The action list is provided in **Appendix A** for review and update by the meeting.

3. ACTION REQUIRED BY THE MEETING

- 3.1 The meeting is invited to:
 - a) note the information contained in this papers; and
 - b) review and update the ISTF action list.

Action Item	Action	Owner	Contributors	Target date	Status	Result	Comment
ACTION ITEM 2/1	To develop a guidance material on collection of scintillation data at strategic locations. Preliminary draft of the guidance material should be available by November 2012 and the finalized guidance material, incorporating all the recommended changes, should be available by December 2012	Task 1 Leader		Dec-12	Closed	Guidance material	Based on Hong Kong Satellite Positioning Reference Station Network and adopted as the guidance material and sample MOU for States
ACTION ITEM 2/2	Secretary to communicate with the APEC GIT Co-chairs regarding the data sharing template. Target date for receiving information from APEC GIT is end of December 2012.	ICAO Secretary		Dec-12	Closed	Information from APEC received	
ACTION ITEM 2/3	to coordinate with IGWG Iono Group to acquire LTIAM Tool. Target date is by the end of December 2012.	Task Lead, Task – 2		Dec-12	Closed		7 feb. 14: approval from FAA is pending Sep. 14 ROK contacted FAA again, with no result.
ACTION ITEM 2/4:	categorize the ionospheric delay measurements and scintillation measurements into geographical region to confirm an even spread of all the observation sites in the region. Target date for the Action Item was agreed as January 2013.	Task 1 Leader		Jan-13	Closed	WP ISTF 3	
ACTION ITEM 2/5	to prepare a mechanism to identify the terms of use of data as proposed by the data source and incorporate that in the data processing. Target date for this Action Item is January 2013.	Task 1 Leader		Jan-13	Closed	Data server interface was implemented	
ACTION ITEM 2/6a	a) Setting up of Server – Japan (January 2013)	Japan		Jan-13	Closed	Server at ENRI up and running	Data server sponsored by ENRI should need to be ready to receive/compile the data. Period of analysis could start from discussing which key parameters could be used for identifying such periods. States like India and Japan, which have already carried out some level of analysis, are requested to suggest these periods/parameters based on their experience. Data formats need to be reviewed and updated for their applicability for the purpose of analysis:
ACTION ITEM 2/6b	b) Finalizing data format – Japan (January 2013)	Japan		Jan-13	Closed		Refer to action item 3/1
ACTION ITEM 2/6c	c) Key parameters to categorize data – Republic of Korea – (January 2013)	Republic of Korea		Jan-13	Closed	ISTF/3 IP/7 was presented by ROK	Closed in ISTF/3
ACTION ITEM 3/1	Japan to coordinate with the Chairman of ITU-R WP-3L for the formats of scintillation data with the same name “SCINTEX” to have a unified format.	Task 1 Leader and Dr. Tsugawa			Closed		Closed 6 Feb. 14. Refer to Action 4/3
ACTION ITEM 3/2	to coordinate with FAA for obtaining permission to use the LTIAM tool by ISTF.	- Task Lead, Task-2 and Prof. Lee, ROK			Closed		Duplicated action
ACTION ITEM3/3	to set up the data server for data sharing according to the outcome of ISTF/3 and prepare a manual for the use of the data server including keeping logs for accessing the restricted data	Task 1 Leader			Closed	setup of the ISTF data server for data sharing and exchange by Japan	
ACTION ITEM 3/4	to identify the past periods of interest for data Analysis	Task 2 Leader			Closed	dates of interest documented into a file with MS-excel format	Closed 6 Feb. 14
ACTION ITEM 3/5	- Secretary to issue a letter to India (Airport Authority of India) requesting the use of GAGAN-TEC data.	ICAO Secretary			Closed	Letter received	
ACTION ITEM 4/1	to check whether and under which conditions Septentrio data could be shared within ISTF	Australia		31-Aug-14	Closed	Project stopped.	
ACTION ITEM 4/2	To develop guidelines about how to generate data in GTEX	Task 1 Leader		31-Oct-14	Closed	16 Feb.15 User Guide of RNx2GTEX for Linux/Unix (ver 1.1.3) User Guide of RNx2GTEX for Windows (ver 2.1)	Delayed, due to rotation of Dr. Tsukawa. GTEX format: end of Oct. 14 Significant amount of data are available in Raw/RINEX data
ACTION ITEM 4/3	To finalize SCINTEX format with ITU by email	Dr. Tsukawa, Japan		30-Jun-14	Closed		In progress through emails and F2F - Final agreement to take place, depending on ESA side Document completed and sent to IGS meeting - Mamoru Ishii to send F.Lecat
ACTION ITEM 4/4	To provide the dates relevant for data Analysis relating to equatorial ionospheric anomalies	all participants		31-Mar-14	Closed	16Feb15 Data were collected from Philippines, India, Singapore and Hong Kong china. During the meeting data from Thailand were handed over to ENRI. Australia has provided the ftp information, but has not yet been transferred onto the ISTF data server	Closed for India on 24 June 14, which has proposed an approach based on 2delta/2sigma data mining for selecting the dates of interest. Dates are proposed in Excel spreadsheet. 16-Sep.-14: However thanks to AATR method, data analysis can proceed.
ACTION ITEM 4/5	identify which tools to use for data conversion to the common format RINEX.	Task 3 Leader	Australia, India, Japan	7-Mar-14	Closed	Tools selected: TEQC, RTKLIB, which should cover 99% of the needs	
ACTION ITEM 4/6	For LTIAM and ENRI's tools, identify how manual verification will be conducted	Task 3 Leader	Australia, India, Japan	31-Jul-15	Open		In progress - 16 Sep. 14 - postponed to 31 Oct. 14 19 Jun. 15: LTIAM access is now granted 19 Jun.15: target date postponed to 31 Jul 15
ACTION ITEM 4/7	identify the need for ROTI to be included as one of the parameters for scintillation analysis	Task 3 Leader	Australia, India, Japan	31-Mar-14	Closed	ROTI can be included as one of the survey parameters	Republic of Korea may join the contributors

Action Item	Action	Owner	Contributors	Target date	Status	Result	Comment
ACTION ITEM 4/8	ISTF Participants to send comments about Space weather draft Conops document to Secretary and Secretary to coordinate with IAVWOPSG.	all participants	Secretariat ICAO	14-Feb-14	Closed	Japan introduced to IAVWOPSG the importance of local ionospheric events for navigation, and will attend ICAO MET Div meeting in July 14, with an IP.	The IP will be shared with ISTF participants
ACTION ITEM 4/9	to confirm if/when there will be a joint session with NSP CSG about ISTF outcomes and way forward to implement mitigation models in the GBAS system	Dr. Saito		15-Oct-14	Closed	Yes joint session on 17Feb.15	
ACTION ITEM 4/10	to coordinate data transfer from Singapore to the ISTF server	Dr. Saito		15-Oct-14	Closed	Data delivered by Singapore	
ACTION ITEM 4/11	collect available information on ionospheric threat definition on SBAS and GBAS systems about EGNOS with ESA	Dr. Surendra Sunda		12-Dec-14	Closed	No paper about EGNOS available in the public domain	
ACTION ITEM 4/12	collect available information on ionospheric threat definition on SBAS and GBAS systems about WAAS and MSAS	Dr. Saito		12-Dec-14	Closed	3 or 4 papers identified and shared during webconference #3	
ACTION ITEM 5/1	to prepare guidance material for GTEX format	Dr. Mamoru Ishii		10-Jun-15	Closed	Guidance material for GTEX format delivered 19 June 15	
ACTION ITEM 5/2	to modify AATR tool to handle cycle slips and irregular data	Dr. Saito		13-Mar-15	Closed		Not distributed yet
ACTION ITEM 5/3	to identify operational hazards related to the ionospheric threats	Dr. Sakai		12-Jun-15	Closed	The spatial variation of ionospheric delay is dominant and the temporal variation is not as significant as the spatial one. The meeting requested to include some typical values for range error for spatial and temporal variation.	
ACTION ITEM 5/4	to identify factors influencing the mitigation strategy (ground stations distribution, iono model used, etc)	Dr. Sakai		12-Jun-15	Closed	Factors identified: Observation density, fidelity of ionospheric model, availability of archived data, and system specific implementation of ionospheric correction are identified as the factors of importance	
ACTION ITEM 5/5	Develop the structure of guidance material for SBAS	Dr. Sakai		12-Jun-15	Closed	Structure of guidance material for SBAS delivered 19 Jun 15: A draft table of contents is presented. After discussion, it was requested to include APAC regional consideration and typical values of influencing factors for SBAS mitigation strategy	
ACTION ITEM 5/6	Using the draft GAST D SARPS guidance as a reference, 1. Identify the operational hazards related to the ionospheric threats for GBAS; 2. Identify factors influencing the mitigation strategy for GBAS in addition to parameters referenced in the GBAS related SARPS guidance material (such as occurrence probability, number of simultaneously influenced satellites, etc.) 3. Summarizing the iono characteristics of the APAC region (SED, plasma bubbles, optionally nominal ionosphere) for 2 sets of parameters in the APAC region; 4. Recommend/develop tool(s) for generating the threat model; and 5. Develop a methodology to generate the threat model	Dr. Yoshihara, Task Lead/Task-5 for GBAS		12-Jun-15	Closed	Structure delivered 19 Jun 15	
ACTION ITEM 5/7	to distribute upgraded AATR tool (now handling cycle slips and irregular data)	Dr. Saito		26-Jun-15	Open		
ACTION ITEM 5/8	to develop high-level requirements for space weather services for CNS in APAC region	Ms. Susan E. O'Rourke (MET SG chair), Mr. Lo Weng Kee (CNS SG Chair), Dr. Saito, Dr. Ishii, Mr. Peter Dunda (MET RO) and Mr. Lecat (CNS RO).		30-Dec-15	Open		
ACTION ITEM 5/9	to find out suitable journals for technical publications	Dr. Saito and Prof. Lee		30-Dec-15	Open		the GBAS threat model and SBAS guidance material should be in public domain
ACTION ITEM 5/10	Since AATR data analysis of GAGAN-TEC data has been done by Dr. Sunda, to analyze just a part of GAGAN-TEC data to cross-check the Dr. Sunda's results	Dr. Saito		30-Dec-15	Open		
ACTION ITEM 5/11	to urgently sends an email to Jiyun to modify LTIAM so that LTIAM reads RINEX data from local disk	Dr. Sunda		30-Dec-15	Open		