APMP - BIPM Joint TCTF Workshop

Bureau International des Poids et Mesures

"UTC(k) Timescale Generation and GNSS Time Transfer"

November 23rd and 24th, 2024

IST Time, New Delhi India: (09:00 hrs– 17:30 hrs)

(UTC 03:30 to 12:00 hrs)

Zoom Meeting details: Shall be circulated to registered participants.

Saturday November 23rd 2024			
Time slot	**Session**	**Title**	**Speaker**
09:00 to 09:15 hrs	Inauguration		Welcome remarks by TCTF chair
09:15 to 09:45 hrs	Tutorial 1	Setup and operational requirements of a time scale lab	Ashish Agarwal, NPL India
09:45 to 10:45 hrs	Tutorial 2	GNSS time transfer techniques	Michael Wouters NMIA, Australia
10:45 to 11:15 hrs	**Group pic, Coffee & Tea Break**		
11:15 to 12:00 hrs	Tutorial 3	CGGTTS data analysis	Bharath Vattikonda, NPL India
12:00 to 13:00 hrs	Tutorial 4	GNSS receiver calibration	Shinn- Yan Lin, Chunghwa Telecom, Taiwan
13:00 to 14:00 hrs	**Lunch**		
14:00 to 15:00 hrs	Tutorial 5	NTP and PTP time dissemination	Michael Wouters NMIA, Australia
15:00 to 16:00 hrs	Tutorial 6	White rabbit Dissemination	Paul Eric Pottie, SYRTE, France
16:00 to 16:30 hrs	**Coffee & Tea Break**		
16:30 to 17:30 hrs	Lab 1	NTP services & Lab tour	Deepak Sharma, Divya Singh Yadav NPL India
19:00 to 21:00 hrs	Dinner		Hotel Exotica Grand

Sunday November 24th 2024			
Time slot	**Session**	**Title**	**Speaker**
09:00 to 09:20 hrs	Tutorial 7	Clock Data Analysis	Yuko Hanado Ex- NICT Japan
09:20 to 10:30 hrs	Lab 2	Clock Data Analysis	Yuko Hanado (Ex-NICT Japan) & Bharath Vattikonda (NPL India)
10:30 to 11:00 hrs	**Coffee & Tea Break**		
11:00 to 12:00 hrs	Tutorial 8	Statistical methods for Time metrology	Patrizia Tavella BIPM , France
12:00 to 13:00 hrs	Tutorial 9	Time scale generation	Yuko Hanado Ex- NICT Japan
13:00 to 14:00 hrs	**Lunch**		
14:00 to 15:00 hrs	Lab 3	Simulation of Time Scale generation & Quiz	Yuko Hanado & Patrizia Tavella
15:00 to 15:30 hrs	Tutorial 10	Time scale and clock steering setup	Yuko Hanado & Bharath Vattikonda
15:30 to 16:00 hrs	**Coffee & Tea Break**		
16:00 to 17:00 hrs	Lab 4	Clock steering	Yuko Hanado, Bharath Vattikonda & Preeti Kandpal (NPL India)
17:00 to 17:30 hrs	Closing Session	Certificate & feedback	

APMP - BIPM Timescale Workshop 2024

https://www.apmp2024.in

"UTC(k) Timescale Generation and GNSS Time Transfer"

Tutorials :

- Statistical Methods for Time Metrology – Patrizia Tavella
- Clock Data Analysis - Yuko Hanado
- Timescale Generation & Steering – Yuko Hanado
- Operational Requirements of Time Scale – Ashish Agarwal
- GNSS Time Transfer Techniques – Michael Wouters
- GNSS Receiver Calibration – Calvin Lin
- NTP & PTP Dissemination - Michael Wouters
- Time Transfer Through White Rabbit – Paul Eric Pottie
- CGGTTS Data Analysis – Bharath Vattikonda

Hands on Training :

- Clock data analysis - Yuko Hanado (Participants can bring their own data and discuss as well)
- Generation of an Average time scale - Yuko Hanado, Patrizia Tavella
- NTP services & Lab tour - Deepak Sharma & Divya Singh Yadav
- Clock Steering with respect to UTC(k) - Bharath Vattikonda

Venue: National Physical Laboratory, New Delhi, India

Date: 23 - 24 of November 2024

Participants: Representatives from NMIs/DIs from RMO's beyond APMP will be accepted based on availability of places.

Limitation : 20 participants

Model : Tutorial lectures and hands on training

Eligibility:

- Open to participants involved in Timescale or GNSS Time Transfer activities at UTC(k) laboratories in National Metrology Institutes (NMIs) or Designated Institutes (DIs). Preference will be given to participants from NMIs/DIs that are members of the Asia Pacific Metrology Programme (APMP).

Application Process:

- Applicants shall submit their qualifications in the proforma attached with this flyer
- Letter of support for the required funding from the head of the Institute or Head of the Laboratory
- Applications shall be emailed to : **tsw2024@nplindia.org**
- Last date for application: **15th November**

Registration Fee: 300 USD
(https://www.apmp2024.in/registration)

Important Instruction:

- Participants must bring their own laptops (Wifi or LAN support) with a Python working environment
- Participant shall submit a report within 6 months after attending this workshop as a follow up action.

Financial Support:

- Participants from the developing economies shall be supported partially on reimbursement as mentioned below
- 25 % support for Indonesia, Malaysia, Thailand, Kazakhstan,
- 50 % support for Philippines,
- 75 % support for Vietnam, Sri Lanka, Nepal, Kenya, Uzbekistan, Mongolia, Papua New Guinea,
- 100 % support for Cambodia and Bangladesh.
  For more details please write to us

Co-Ordinator:

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Technical committee chair:

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