

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

Sunday November 24 th 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	Patrizia Tavella	
		for Time metrology	BIPM , France	
12:00 to 13:00 hrs	Tutorial 9	Time scale	Yuko Hanado	
		generation	Ex- NICT Japan	
13:00 to 14:00 hrs	Lunch			
14:00 to 15:00 hrs	Lab 3	Simulation of Time	Yuko Hanado	
		Scale generation &	&	
		Quiz	Patrizia Tavella	
15:00 to 15:30 hrs	Tutorial 10	Time scale and	Yuko Hanado	
		clock steering	&	
		setup	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	Certificate & feedback		
	Session			





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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



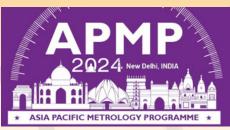
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Participants: Representatives from NMIs/DIs from RMO's beyond APMP will be accepted based on availability of places.

Limitation: 20 participants

Model : Tutorial lectures and hands on training





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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 : <u>tsw2024@nplindia.org</u>
- 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: Bharath Vattikonda bharath.v@nplindia.org Technical committee chair: Kazu Hosaka

kazu.hosaka@aist.go.jp

Local Committee chair : Ashish Agarwal ashish@nplindia.org

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