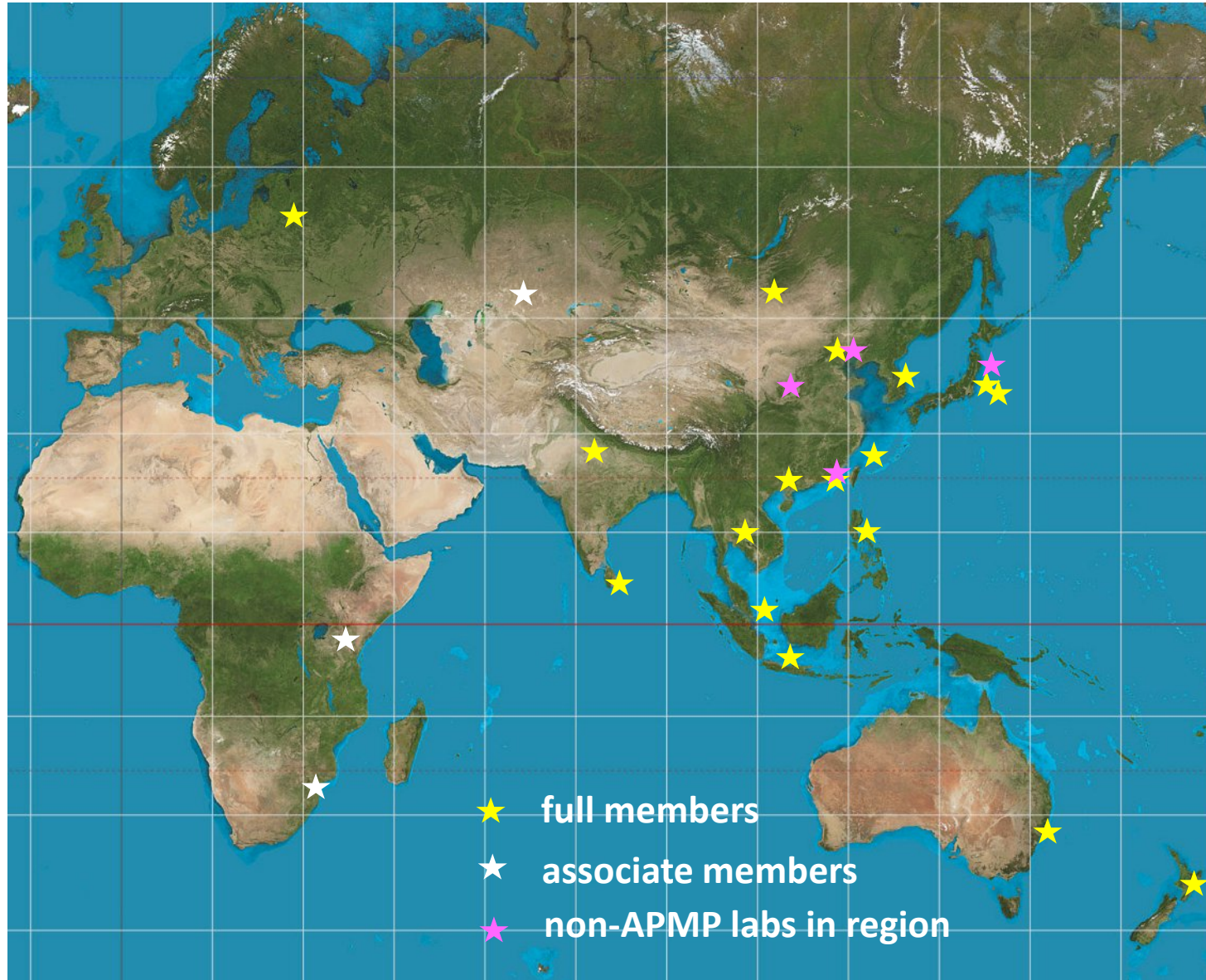**Asia Pacific Metrology Programme**

APMP Technical Committee for Time and Frequency Activity Report

Chair Elect, Aimin Zhang (NIM)
Chair, Dr Michael Wouters (NMIA)
21st CCTF, Paris, June 2017

Laboratories in the APMP region contributing to UTC

full members

associate members

non-APMP labs in region

Structure of the TCTF

Working Groups

Chair Dr Michael Wouters (NMIA) *Chair Elect* Aimin Zhang (NIM)			
Mutual Recognition Agreement (MRA)			
	Coordinator	Mr Louis Marais	NMIA
Global Navigation Satellite Systems (GNSS)			
	Coordinator	Dr Michael Wouters	NMIA
	Sub-coordinator	Mr Jia-Lun Wang	TL
Two-way Satellite Time and Frequency Transfer (TWSTFT)			
	Coordinator	Dr Miho Fujieda	NICT
	Sub-coordinator	Mr Yi-Jiun Huang (new coordinator Nov 2016-)	TL
Optical Frequency Metrology (OFM) (joint TCL/TCTF)			
	Coordinator	Dr Kazumoto Hosaka	NMIJ
Test and Calibration (TC)			
	Coordinator	Dr Ahmad Sahar bin Omar	NMIM
	Sub-coordinator	Mr Stephen Quigg	NMIA

Training course on GNSS time-transfer and receiver calibration

- Three day workshop hosted by TL and held in Taipei in September, 2016
- Funded through the APMP-MEDEA project
- Aimed at NMIs in developing economies – 16 participants from 13 NMIs

Training course followup activities

- **Jan – May 2017** : GNSS receiver calibration campaign, piloted by TL
- **Jul 2017**: On-site visits to selected NMIs
- **Oct 2017**: Concluding workshop at TL

Demonstration of travelling receivers

Technical Committee Initiative : development of a low cost time-transfer platform

Open Traceable Time Platform

www.openttp.org

- A low-cost (<$2K) GPS common view time-transfer system (single frequency)
- Openly available hardware designs and software (software is already available on GitHub)
- Collaboration between NMIA, NPLI, NIMT and NMIM
- Final version of the hardware has just been received for assembly

Asia Pacific Workshop on Time and Frequency (ATF)

ATF 2015

- **ATF 2015** Held in Beijing 31st October, hosted by NIM
- **ATF 2016** Held in conjunction with AP-RASC 2016 in Seoul
- **ATF 2017** Will be held in conjunction with the APMP general assembly in November, 2017, hosted by NPLI

Thank you for your attention!