

APLAC Calibration Programs

M001 - Dimensional Metrology

- 30 laboratories from 13 economies
- 2 loops
- coordinated by NATA
- NML Australia was the Reference laboratory
- gauge blocks - 1, 10, 50 and 100 mm
- 33 mm plain setting ring
- 15.6 mm plug gauge
- normal methods
- final report issued October 1996

M002 - Mass

- 35 laboratories from 15 economies
- 3 loops
- coordinated by NATA
- NML Australia was the Reference laboratory
- 1 g, 10 g, 107 g, 200 g, 1 kg
- normal methods
- final report issued November 1996.

M003 - Resistance

- 30 laboratories from 11 economies
- 1 loop
- coordinated by CNLA
- NML Chinese Taipei is the Reference laboratory
- two 1 Ω and two 10 k Ω IET SRL standard resistors
- normal methods
- final report issued December 2000

M004 - AC/DC Voltage

- 43 laboratories from 15 countries
- 2 loops
- coordinated by HOKLAS
- SCL Hong Kong is the Reference Laboratory
- HP 3478A and HP 34401A digital multimeters
- normal methods
- final report issued December 1998

M005 - Thermometer

- 23 laboratories from 10 economies
- 2 loops
- coordinated by SINGLAS
- NMC Singapore is the Reference Laboratory
- Isotech Semi standard PRT (Loop 1);
- Isotech Semi- standard PRT and Hart 1502 indicator (Loop 2)
- normal methods (current specified)
- final report issued October 1998

M006 - Pressure

- 41 laboratories from 15 economies
- coordinated by NATA
- NML Australia was the Reference laboratory
- HBM P31AP 50 MPa reference transducer
- Toledo 8142 digital indicator
- specified method
- final report issued January 1999

M007 - Force

- 10 laboratories from 6 economies
- coordinated by NATA
- NML is the Reference laboratory
- compression load cell 500 kN
- normal methods
- commenced October 1999
- final report issued November 2004

M009 - RF Power

- 27 laboratories from 12 economies
- coordinated by NATA
- NMI Australia is the Reference laboratory
- HP 8478B power sensor
- 0.05, 1, 12, 16, 18 GHz
- normal methods
- commenced May 2001
- final report issued September 2005

M010 - Sound level

- Coordinated by NATA
- 16 laboratories from 10 economies (9 APLAC)
- NML Australia is the Reference laboratory
- B&K model 2236 sound level meter

- absolute sensitivity, frequency weighting
- normal methods
- commenced May 2001
- final report to be issued early 2008

M011 - Thermocouples

- to be coordinated by SAC, Singapore
- NMC Singapore is the Reference laboratory
- normal methods
- expected to commence early 2008

M014 – High Resistance

- coordinated by SCC, Canada
- Two Standard Resistors
- Measure resistance
- commenced March 2002
- final report expected early 2008

M015 – Resistance

- coordinated by JAB, Japan
- Resistance at 1 ohm and 10 Kohm
- commenced August 2004
- final report expected early 2008

M016 – Watt-Hour Meter

- coordinated by IANZ
- Various measurement points
- commence April 2004
- final report expected 2008

M017 – Mass

- jointly coordinated by HKAS/KAN
- 33 laboratories from 11 APLAC economies
- reference values by The Hong Kong Government Standards and Calibration Laboratory (North Asia loop); Research Centre for Calibration Instrumentation and Metrology – Indonesian Institute of Sciences (South Asia loop)
- set of standards – 1g, 10g, 100g mass
- final report for the south loop issued in January 2007
- final report for the north loop expected early 2008

M018 – Short Gauge Blocks

- coordinated by IAJapan

- reference values by The National Metrology Institute, Japan
- Interferometry measurement – 1mm, 8mm, 75mm
- Comparison measurement – 1mm, 10mm, 100mm
- Final report expected early 2008

M019 – Pressure Meter

- Coordinated by KOLAS
- reference values by KTL & KRISS, Korea
- 0 to 100 MPa gauge pressure
- Final report expected 2008

M020 – DC Current Measurement

- To be coordinated by DSM, Malaysia
- reference values by NML-SIRM, Malaysia
- Digital multimeter
- Report meter reading corrections at 10 mA, 100mA and 1A
- Final report expected 2008

M021 – Volume

- Coordinated by KAN, Indonesia
- Graduated measuring cylinders of 100mL capacity with 1 mL nominal least scale value.
- Calibration performed by gravimetric methods based on ASTM E 542 , ISO 4787, AS 2162.1 or other equivalent methods
- Final report expected early 2008

M022 – Platinum Resistance Thermometer

- Coordinated by TLAS, Thailand
- Two Industrial Platinum Resistance Thermometers (IPRT) will be used as the artifacts for this programme. The specification is shown as below:

Range : -40 °C to 450 °C

Size : 300 mm with diameter 6.35 mm

Stability : $\pm 0,002$ °C

R_{TPW} : 100 Ω (± 1 Ω)

Lead wires : 4 wires with spread terminals

Manufacture : Hart or Isotech

- Expected to commence artefact circulation in March 2008

M023 – Relative Humidity Measurement

- Coordinated by Standards Malaysia
- Relative Humidity and temperature transmitter model Vaisala

- Measurement points – 10%rh, 30%rh, 50%rh, 70%rh and 90%rh at 23 °C
- Measurement points – 10%rh, 30%rh, 50%rh, 70%rh and 90%rh at 50 °C
- Reference Laboratory NML-SIRIM, Malaysia
- Expected to commence artefact circulation in June 2008

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