



APLAC INTERLABORATORY COMPARISON M027 – Calibration of E2 Weights

Objectives

The aim of the program is to assess the ability of laboratories to competently perform mass calibration and to ascertain whether laboratories achieve their accredited least uncertainty of measurement. Since calibration activities underpin all testing and measurement activities, this program will contribute to establishing mutual confidence in the comparability and traceability of measurements in the Asia-Pacific region and consequently will support the removal of technical barriers to trade.

Description of Artifacts

The artifacts to be calibrated are sets of 100 mg, 2 g, and 20 g OIML weights class E2. Two sets of such artifact will be used in concurrent circulation loops to shorten the time for completion of the proficiency test.

Stability of Artifacts

The artifacts will be measured by the reference laboratory both before and after the circulation to check for the stability of the artifacts.

Organisation and Coordination

This proficiency calibration program is organized by The National Accreditation Body of Indonesia (KAN). KAN will be responsible for inviting participants and assigning confidential codes to participating laboratories. KAN will provide the artifacts, prepare and dispatch artifacts and result sheets to the participants. KAN will collect calibration results from participants, perform the analysis of the data, and prepare the report.

Laboratories from APLAC members will be invited through their accreditation bodies to participate. Each APLAC member may nominate up to a maximum of 2 laboratories from its economy and preference will be given to laboratories which have maximum acceptable uncertainty (MAU) for OIML E2 weight set as described below:



No	Nominal of artifact	OIML E2 Maximum Acceptable Uncertainty (MAU)
1	100 mg	5 μ g
2	2 g	12 μ g
3	20 g	25 μ g

Each participant accreditation body is responsible for the local delivery of the artifacts within their economy and also the delivery to the next accreditation body as listed in the schedule of delivery or back to KAN where appropriate.

Circulation of Artifacts

The artifacts are stored in rigid cases designed to restrict movement and prevent damage to the artifacts.

One set of artifacts will be circulated among the participating laboratories in each of the two loops (designated Loop 1 and Loop 2).

Calibration Procedures

The calibration should be performed by comparison with the reference weight sets in air in the laboratory without applying buoyancy corrections. Detailed instruction to participants will be issued together with the artifacts.

Reference Laboratory

The Research Center for Calibration, Instrumentation and Metrology – The Indonesian Institute of Sciences (Puslit KIM-LIPI) is the reference laboratory for the artifacts used.. The reference values will be derived from Puslit KIM-LIPI results at the beginning, in the middle, and the end of the circulation. Puslit KIM LIPI's CMC of such artifacts as published at KCDB appendix C CIPM MRA are:

No	Nominal of artifact	Puslit KIM LIPI CMC
1	100 mg	1.1 μ g
2	2 g	2.5 μ g
3	20 g	5 μ g

Reporting of Results



The completed result sheet should be submitted by participating laboratories to the local laboratory accreditation body for forwarding to KAN within 2 weeks after completing the calibration.

Analysis of results

KAN and Puslit KIM LIPI will analyze the results and produce a report.

Schedule

- Nov 2013 – Jun 2014 : Invite participation and pre-condition artifacts in reference laboratory
- Jun 2014 – May 2015 : Dispatch artifacts and collect results
- May 2015 – Jul 2015 : Data analysis and issuance of interim report
- Jul 2015 – Aug 2015 : Prepare draft report
- Aug 2015 – Sep 2015 : Submit draft report to APLAC Proficiency Committee for approval
- Sep 2015 – Oct 2015 : Print and issue final report

Convenor and Technical Advisor

The following person has been appointed as convenor for coordinating all correspondences relating to this program and his contact details are:

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References

APLAC PT001 Issue No. 5: “Calibration Interlaboratory Comparisons” published by APLAC.