



ASEAN INTER-LABORATORY COMPARISON PROGRAM OF MASS STANDARDS

Background

Based on ACCSQ WG 3 20th meeting held in Malaysia on 4 – 5 December 2013, it is agreed that to strengthen legal metrology infrastructure through capacity building and technical assistance program between ASEAN member states (AMS), inter-laboratory comparison (ILC) program of mass standards is necessary to be carried on. Indonesia was appointed as coordinator of the ILC. As coordinator, Indonesia was requested to provide the artifacts of mass standards and design and conduct the ILC program from 21 July 2014 to 21 January 2015.

Objective

The ILC program is held to build mutual recognition based on uniformity measurement result between AMS. It is also to measure and improve the competence and capability of national mass laboratory under the Legal Metrology Authorities (or Weight and Measures Office) by comparing measurement results among standards of participant laboratories.

Participants

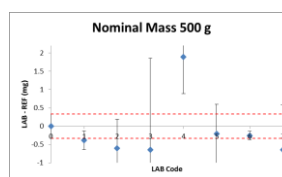
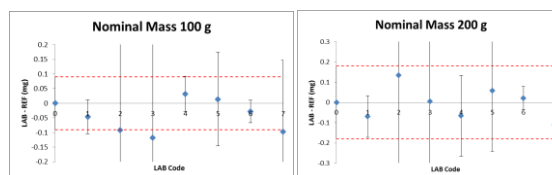
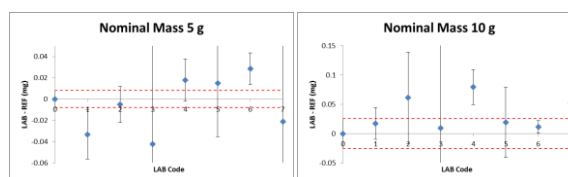
The laboratories participated are listed below:

1. Mass Laboratory of National Standard Measuring Unit – Directorate of Metrology (Indonesia) as reference,
2. Malayan Daching Co. Pte. Ltd (Singapore),
3. Metrology Corporation Malaysia SDN. BHD. (Malaysia),
4. Central Bureau of Weights and Measures (Thailand),
5. Northern Weights and Measures Center (Thailand),
6. National Metrology Center (Cambodia),
7. National Metrology Laboratory of The Philippines (Philippines), and
8. Calibration Centre MINDEF (Brunei Darussalam).

Result

The artifacts used in this ILC are mass standards of OIML Class F₂ produced by Mettler Toledo with nominal mass of 5 g, 10 g, 100 g, 200 g, and 500 g.

Nominal Mass (g)	En						
	Lab Code						
	1	2	3	4	5	6	7
5	1.360	0.274	0.281	0.828	0.293	1.703	0.267
10	0.470	0.749	0.047	2.015	0.299	0.415	0.523
100	0.427	0.256	0.232	0.294	0.076	0.284	0.372
200	0.332	0.254	0.005	0.241	0.169	0.116	0.212
500	0.920	0.689	0.256	1.798	0.237	0.728	0.510



Conclusion

Generally, the ASEAN ILC program was perfectly conducted. Considering the “E_n” values of each participant, only 4 results are unequal (11.43%). The 3 laboratories that gave unequal results need to do some investigation. The uncertainty from Lab 3 is bigger than the others, so that particular lab might want to re-evaluate their uncertainty budget.