



ASEAN INTER-LABORATORY COMPARISON PROGRAM OF VOLUME STANDARD

Background

Based on the 18th Meeting of ACCSQ WG 3 held on 12 – 13 December 2012 in Thailand, it was agreed that to strengthen legal metrology infrastructure through capacity building and technical assistance program between ASEAN member states (AMS), inter-laboratory comparison (ILC) program among AMS is necessary to be carried on. Indonesia was appointed as coordinator of the ILC. As coordinator, Indonesia was requested to provide the artifact of volume standard and design and conduct the protocol of ILC program on the 19th Meeting of ACCSQ WG 3 held on 1 – 2 May 2013 in Indonesia.

The importance of this program is for establishing and maintaining Mutual Recognition Arrangements (MRA) that are very rigorous and are in part based on comparability of measurement data between AMS. Consequently, this program requires participation of AMS.

Moreover, the ILC program of volume standard is the some kind of important program to measure and improve the competence and capability of national volume laboratory under the Legal Metrology Authorities (or Weight and Measures Office) by comparing measurement results among standards of participant laboratories. The volume standard selected as artifact is a 5 L volume standard and the calibration method used by all of participants was gravimetric method.

Objective

The activity of the ILC of volume standard in the ASEAN region is performed to provide the performance data of volume laboratories in each AMS. Therefore, the calibration results of volume standard in these AMS might be known.

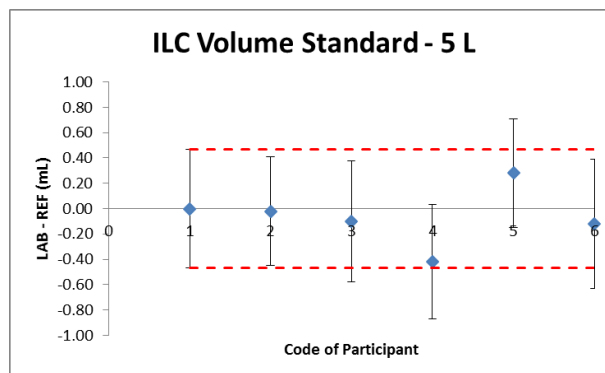
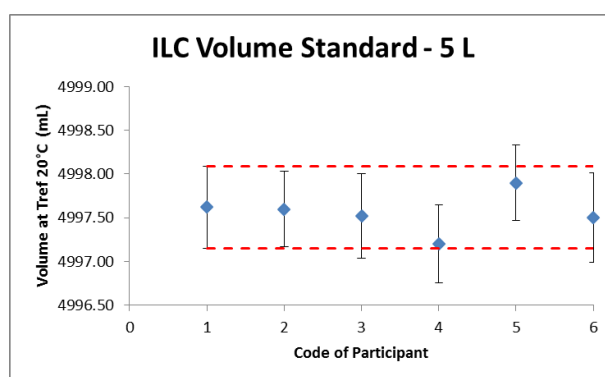
Participants

The laboratories participated are listed below:

1. Volume Laboratory of National Standard Measuring Unit – Directorate of Metrology (Indonesia) as reference,
2. Weights and Measures Office – SPRING (Singapore),
3. NML – SIRIM (Malaysia),
4. Central Bureau of Weights and Measures (Thailand),
5. Legal Metrology Lab, NMC of Cambodia (Cambodia), and
6. National Metrology Laboratory (Philippines).

Result

No. of Participant	Volume at Tref 20°C	Uncertainty (mL)	En
1	4997.62	0.47	0
2	4997.60	0.43	0.04
3	4997.52	0.48	0.16
4	4997.20	0.45	0.65
5	4997.90	0.43	0.43
6	4997.50	0.51	0.18



Conclusion

Generally, the ASEAN ILC program was perfectly conducted. Considering the “E_n” values of each participant, we can conclude that the performances of each participant is good.