


Policy for Proficiency Tests and Inter-laboratory Comparisons

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1. Scope

This Document applies to policies for monitoring the validity of results by proficiency testing, interlaboratory comparison, or other appropriate methods to compare results with those of other laboratories.

[Note1] ISO/IEC 17025:2017 clauses 7.7.1 and 7.7.2 require monitoring of the validity of the results.

Clause 7.7.1 a) to k) can be performed within the laboratory, but clause 7.7.2 requires monitoring of the validity of the results by comparison with the results of other laboratories. This document addresses the requirements of ISO/IEC 17025:2017 clause 7.7.2.

[Referenced documents]

- (1) ILAC-P9:01/2024 ILAC Policy for Proficiency Testing and/or Interlaboratory comparisons other than Proficiency Testing [<https://ilac.org/publications-and-resources/ilac-policy-series/>]
- (2) ISO/IEC 17043:2023 Conformity assessment -- General requirements for the competence of proficiency testing providers
- (3) JIS Q 17043:2011 General requirements for the competence of proficiency testing providers

2. Participation in proficiency test or inter-laboratory comparisons

Laboratories shall plan and conduct monitoring of their own performance by comparison with the results of other laboratories for the tests for which they are accredited. Comparisons with other laboratories may be by proficiency test and/or inter-laboratory comparisons, or by other appropriate methods of comparison with other laboratories. The frequency of these shall be at least once during the accreditation period, especially where there are available and appropriate proficiency test or inter-laboratory comparison programs. If there are tests that cannot be conducted during the accreditation period, they shall be planned and conducted according to the plan, including during the next accreditation period.

2.1 Proficiency test

When using proficiency test, preference is given to participation in programs by providers accredited under ISO/IEC 17043, but this is not limited to this.

[Note] Even if a proficiency test program is provided, it does not necessarily indicate the performance of the test depending on the test method and purpose, so use after determining whether the program is appropriate.

2.2 Inter-laboratory comparison

When using inter-laboratory comparison, it is desirable to participate in the program of a provider accredited under ISO/IEC 17043, but this is not limited to this.

- (1) Comparisons to verify the validity of standards, such as those organized by a committee or planned and carried out by laboratories, comparisons of results due to differences in equipment, and comparisons of results due to differences in test conditions.
- (2) Comparisons of results between laboratories in different regions, carried out by a laboratory that operates multiple testing laboratories in different regions.
- (3) Comparisons with results tested by customers of the testing laboratories using their own equipment.

When possible, it is desirable to make it possible to perform statistical processing of the results of inter-laboratory comparisons.

When planning proficiency tests or inter-laboratory comparisons, it is advisable to refer to ISO/IEC 17043:2023 Clause 7.2 for scheme design.

3. Consideration of the results of proficiency tests or inter-laboratory comparisons and performance evaluation

Laboratories should consider the results of proficiency tests or inter-laboratory comparisons and evaluate their own performance. Performance evaluations include, for example, Z-score judging based on statistical processing of measurement results (Z-scores of 2 or less are evaluated as "satisfactory," Z-scores of more than 2 but less than 3 are evaluated as "doubtful," and Z-scores of 3 or more are evaluated as "unsatisfactory"). If the proficiency testing provider does not provide performance evaluation results to laboratories, laboratories should determine their own performance evaluation criteria and perform the evaluation.

Notes on performance evaluation: A "satisfactory" evaluation result may be evidence that the laboratory's testing and measurement capabilities at that time are reliable, but it does not necessarily indicate continued performance capabilities. Conversely, even if the performance evaluation is unsatisfactory, the result may have occurred accidentally and does not necessarily indicate a problem with the laboratory's everyday capabilities. For measurement results with uncertainty, such as electromagnetic compatibility emissions measurements, it is necessary to consider the entire data as well as the numerical values of statistical processing. ISO/IEC 17043 also allows for qualitative data, making it possible to compare results that cannot be statistically processed. [Note]

[Note] Inter-laboratory comparisons can also be applied to tests where the results are not numerical values, such as EMC immunity tests results and mechanical shock tests results.

4. Discussion of Results

The laboratory shall analyze the results of the proficiency test or inter-laboratory

comparison, and if the results are judged to be unsatisfactory, shall investigate the cause, and if any cases of non-conforming work are found, shall take corrective action. The laboratory shall also report to VLAC a record of any corrective action taken in accordance with the laboratory's management system.

5. References (Informative)

The following organizations provide proficiency testing programs in VLAC accreditation fields. Laboratories select and participate in a program that matches purpose for monitoring the validity of the test results.

- (1) KEC Electronic Industry Development Center <https://www.kec.jp/>

Provides PT for EMC radiated emission tests.

- (2) IFM Quality Services Pty Ltd <http://www.ifmqs.com.au/>

Refer to the “Electrical Proficiency Test Program Order Form” on the internet web site.(example) EMC conducted emission, leakage current, IP test etc.

- (3) Japan Electromagnetic Environment Measurement Association <https://jeema.jp/>

Provides radiated electromagnetic field immunity testing (proficiency testing of electric field strength measurement for immunity testing) and radio frequency conducted interference immunity testing (proficiency testing of interference voltage measurement for immunity testing).

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Revision of this document from VR106A-2024

The description of the scope of application in the previous version has been corrected, and the overall description has been revised to make the frequency of implementation more realistic.

1) This provision stipulates monitoring of validity through comparison with the results of other laboratories, but the previous version also included intra-laboratory comparisons in Appendix A (examples of validation), which resulted in deviations from the scope of application of this provision. In this version, the alternative measures citing Appendix A have been deleted, and only proficiency tests or inter-laboratory comparisons are subject to implementation.

2) Although proficiency tests or inter-laboratory comparisons are available and appropriate for tests within the accreditation scope, it may be practically difficult to conduct all of them within the validity period of accreditation, so it has been decided that laboratories will conduct them based on a plan.