

CRITERIA FOR THE SELECTION OF A PROFICIENCY TESTING SCHEME

Background

Participation in interlaboratory comparisons and proficiency testing (PT) is an important tool for laboratories to check the reliability of their results by comparison within their peer group and to demonstrate their performance to clients and accreditation bodies. With the increasing availability of PT schemes in many technical fields, the criteria for the selection of an appropriate scheme are becoming more important.

Since some accreditation bodies now accredit PT providers, there may be a tendency for either accreditation bodies or individual assessors to recommend participation in accredited PT schemes or to require an accredited laboratory to justify its selection of a non-accredited PT scheme.

The purpose of this document is to establish the relationship between accreditation and the criteria for the selection of a PT scheme.

Technical Criteria

In a joint paper of EA, EUROLAB and EURACHEM on proficiency testing [1] some technical criteria for the selection of an appropriate PT scheme are given:

- **Material/Matrix:** The sample material/matrix is as close as possible to that normally tested by the laboratory.
- **Measurands:** The measurands in the test samples or materials include as many as reasonable of those normally measured by the laboratory in that sample type.
- **Levels:** The levels of these measurands are broadly within the range usually measured by the laboratory in that sample type.
- **Frequency:** The frequency of rounds of the scheme is sufficient as recommended in EA-3/04 [2] in connection with the other means of quality applied by the laboratory for the respective test (method, measurand, material/matrix).
- **Statistical protocol:** The statistical protocol for evaluating the participants' performance is considered to be appropriate for the measurands and test methods covered.

Selection

When selecting a new PT scheme, a laboratory should focus on the technical criteria. It should be noted that it might not be possible to participate in or even find PTs for all methods, materials/matrices, measurands and measurement ranges that the laboratory carries out. A reasonable and effective way of covering similar tasks has to be accepted [1]. Thus, a laboratory may have to accept some compromises because a PT scheme ideally suited to its needs might not be available.

When a laboratory participates in a PT scheme for the first time, it should be able to give reasons for the choice that it makes based on technical criteria, but it is not necessary for it to have to justify the selection to the extent that, for example, a customer audit would be required.

After the finalisation of the PT round, the laboratory should assess not only its own performance in relation to its peer group of laboratories but also the performance of the PT provider and the appropriateness of the scheme with regard to its own needs. For example, the report delivered by the PT provider and any support to take appropriate corrective actions, if necessary, might be important criteria for the quality of the PT provider's services and influence future decisions on the choice of a PT provider.

For clarity, it is important to note that a PT provider is a supplier of an external service as mentioned in section 6.6. In relation to the laboratory, the PT provider is in a similar position to the producers of laboratory equipment or of consumable materials. It is not a requirement of ISO/IEC 17025 for a PT provider to be accredited. But ISO/IEC 17025 gives in section 7.7.2 a) a note that PT provider that meeting the requirements due to ISO/IEC 17043 are considered to be competent. So an accreditation of a PT provider does not require any other evidence concerning the competence of the PT provider. But a laboratory can base its decision to participate in a specific PT scheme also on other criteria as for example on its experience of the scheme in the past.

Further guidance on the selection, use and interpretation of PT schemes can be found in the EURACHEM document [4].

Conclusions

In choosing an appropriate PT provider, the laboratory has a number of choices to make. Accreditation of a PT provider is one criterion. Other technical criteria could be more relevant.

EUROLAB promotes the approach that a laboratory should select the most appropriate PT scheme according to its needs. The laboratory should subsequently assess the appropriateness of a scheme in the light of the results gained. This also holds in the case of an accredited PT provider.

References

- [1] EA, EUROLAB, EURACHEM position paper on *the “Trade-off” issue between Participation in Proficiency Testing and the Level and Frequency of Surveillance Activities*, 2004
- [2] EA 3/04 (rev01), *“Use of Proficiency Testing for Accreditation in Testing”*, www.european-accreditation.org
- [3] ISO/IEC 17025:2017, *“General requirements for the competence of testing and calibration laboratories”*
- [4] EURACHEM Guide on *“Selection, use and interpretation of proficiency testing (PT) schemes by laboratories”*, 2000, www.eurachem.org