كفاءة المختبرات
LABORATORIES PROFICIENCY

المؤتمر الخليجي الأول لكفاءة المختبرات

FIRST GCC CONFERENCE FOR LABORATORIES PROFICIENCY

Proficiency Test
Inter-Laboratory Comparison

METTLER TOLEDO AG
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What is an Inter-Laboratory Comparison and how does it work?

What is Proficiency Test?

A proficiency test (PT) or Inter-Laboratory Comparison (ILC) is simply, a method that you may use to validate a particular measurement process.

The artifact's reference value is not known by the participating laboratory at the time of its measurement (test).

In a well designed proficiency test, the reference value for the artifact should be principally determined by a competent laboratory with appropriate traceability to the International System of Units (SI).

Why does my Laboratory need PT / ILC

Regardless of the standard that your calibration laboratory's quality system is based upon, proficiency testing is an excellent way to validate one's measurement processes.

Proficiency tests can validate the participating laboratory's measurement method, technical training, traceability of standards, and uncertainty budgets.

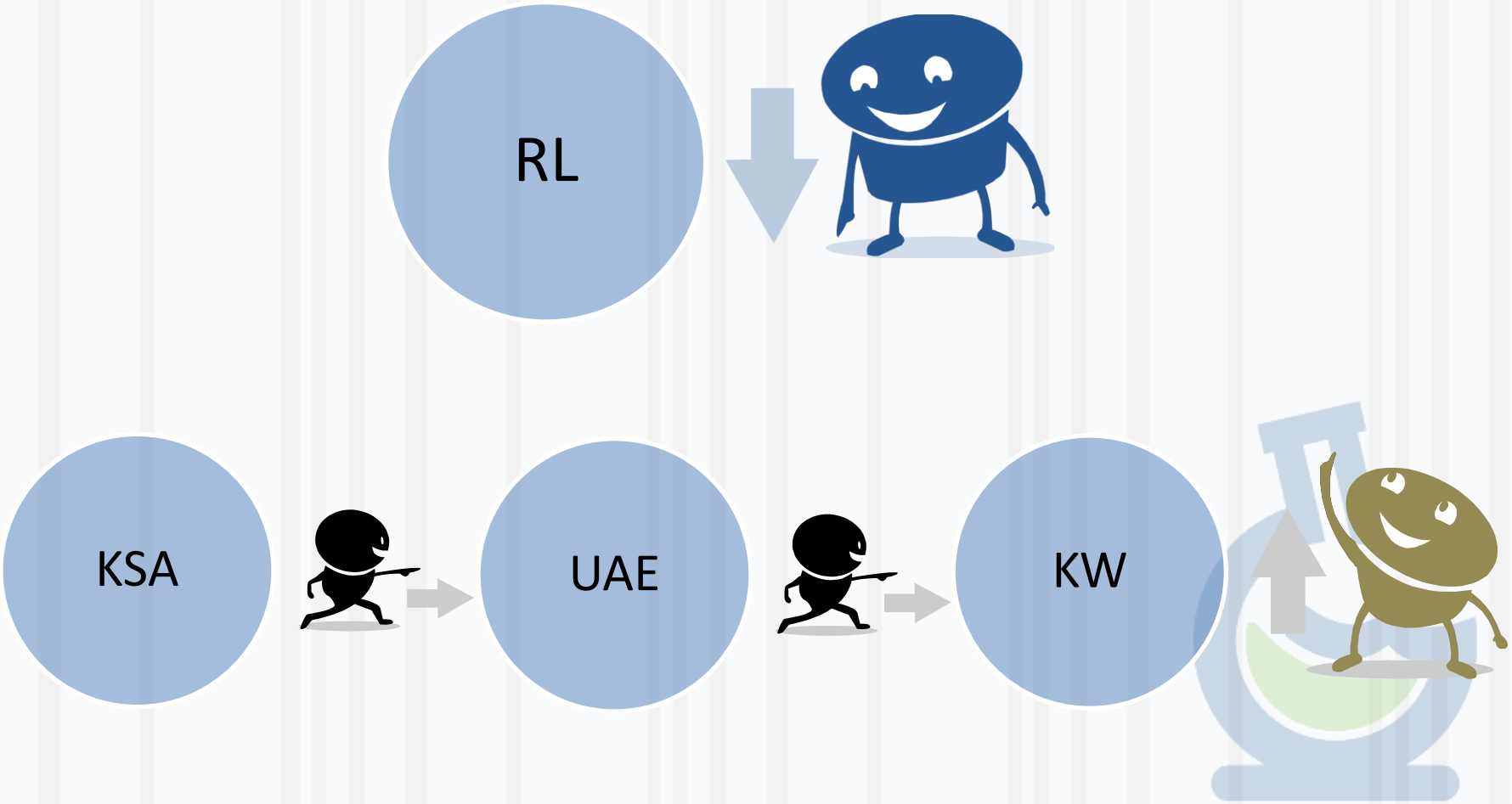
In order for a calibration laboratory to be accredited to ISO 17025 it requires participation in proficiency tests.

How does a PT / ILC work

- e.g. GSO to lead the PT/ILC
- Select participants
- Select units (100mg, 100g, 1kg)
- Select Reference Laboratory (RL)

- Calibration at RL (e.g. MT)
- Shipment to first participant and start loop
- Last participant shipping back the units to RL
- Calibration at RL
- RL to issue PT/ILC confidential report
- GSO to implement next steps according to RL report

How does a PT / ILC work



What does a participant

- Calibrate the units according their best capabilities
- Issuing an official calibration certificate
- Send the units to next participant

CALIBRATION REPORT AND CERTIFICATE

E_n value smaller than 1.00% (Factor of comparing uncertainty between participant and RL)

PT/ILC possible elements of a report

- Abstract	Description about the task
- Introduction	Aim of PT/ILC
- The Laboratories	Full names of participants
- Task and Test Pieces	Determination of conventional mass
- Uncertainties	Within tolerance of the accuracy class
- Shipments	Logistics, packing, loop, etc.
- Results and Certificates	Submit of calibration reports to RL
- Communication	Possibility of community for support
- Problems encountered	Report on any specialties (delays, results)
- Results	Tables ana analysis of the different results
- Non-Conformities	Information on any non-conform results
- Summary and Conclusion	Feedback and observations
- Important E_n value	Uncertainty compared to RL not higher than factor 1

Quality Tool to improve competencies

A MASS COMPARISON AROUND THE WORLD

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ABSTRACT

A group of nine calibration laboratories performed an intercomparison of Conventional Mass in 2004. The comparison consisted of conventional mass for four weight pieces, namely 100 g, 10 g, 100 mg and 2 mg. All participating laboratories are accredited for this measurement. However, they are distributed around the world on different continents, they are accredited under different accreditation bodies and are traceable to different national standards.

This is special, as usually calibration laboratory intercomparisons are performed in one country only or among laboratories that are accredited by one accreditation body. In this intercomparison the only common point of traceability is the international kilogram prototype and the only common point of the quality assurance system of the participants it is their accreditation according to ISO 17025. The paper deals with the results of the intercomparison and hints at problems and findings that can be drawn from the evaluation of the results.

1. INTRODUCTION

Inter-Laboratory Comparisons (ILC) for calibration laboratories are a valuable means for evaluating the quality of a lab's calibration results. Calibration laboratories usually welcome such ILC's as they offer a unique chance to verify their results together with their uncertainty calculation. This strengthens the confidence among the national calibration services, the

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THANK YOU!

METTLER TOLEDO