Fact sheet of the interlaboratory comparison:

ILC temperature 2022-2023

Context and objectives:

In 2021, CT2M organizes a european-wide interlaboratory comparison on the calibration of Temperature measurement chain. You are a calibration laboratory (accredited or not) or a test laboratory carrying out its internal calibration: this interlaboratory comparison is organized for you!

The objectives of this aptitude test are:

- Determine your performance by positioning yourself in relation to other laboratories,
- Ensure the quality of your calibration results,
- Meet the normative and accreditation requirements,
- Validate your calibration method.

CT2M commitments:

- Confidentiality of results, protection of anonymity,
- Organization and exploitation of results according to standards in force (ISO 17043, ISO 13528)
- Support of participating laboratories.

Proficiency testing item:

The temperature measurement chain consists of the following elements:

- ✓ One Pt100 probe Ø6*100mm with silicone cable length 3m
- ✓ One Delta Ohm HD 2107.1 temperature indicator with 0.01°C resolution

Testing/Calibration Method(s):

The calibration method to be preferred is the method compared to a reference measurement chain. The number of comparisons is left to the free choice, the routine procedure of the participating laboratory is to be used. The temperature measurement chain must be calibrated at the following points: -20°C, 5°C, 20°C, 37°C and 105°C. However, **it is not mandatory to perform all calibration points** if the means implemented by the participants do not allow it. A detailed protocol will be provided to each participant at the beginning of the campaign.

Organization of the proficiency testing:

Each laboratory will have to calibrate the measurement chain within one week (national circuit) or two weeks (international circuit). The measurement chain will circulate from one laboratory to another according to a schedule defined taking into account the unavailability of participants.
The CT2M will provide a file in which the results will have to be retranscribed. For each calibration point, participants will be asked to indicate the following results:

- ✓ « Reference » temperature (T_{ref})
- ✓ Temperature of the "measurement chain to be calibrated" (T_{ins})
- ✓ Correction (T_{ref} - T_{ins})
- ✓ Uncertainty with k=2 (if determined)

However, it is not mandatory to have determined its calibration uncertainty to participate in this interlaboratory comparison. Further information on the method and the means implemented will be provided by the participants on the results file.

Final report:

At the end of the circuit, the results will be treated statistically and a final report will be sent to the participants. It will contain the results of all the participants (with a codification to respect the anonymity), the study of normality and outliers, the performance scores of the participants and all the other elements useful to the interpretation. The performance scores will be based on the robust average of participants (Z-score) and the results of a reference laboratory accredited according toSO 17025 for this calibration (E_n score).
Intermediate reports will also be written during the circuit in the event that a significant number of participants would lead to a circuit duration longer than 6 months.

Important dates:

Key steps	Estimated deadline
Closing date for registration	December 2022
Planning the circuit	August 2022
Sending the detailed protocol Launch of the circuit	In the same time that the schedule of the week of comparison
Publication of the final report	Depending on the number of participants (Intermediate report every 6 months)

Participation fees: 475€ (net total)

This price includes the loan of the measurement chain to be calibrated, the transport costs from the CT2M at the beginning of the circuit, the supply of the results file to be completed, possible intermediate report and the final report containing the exploitation of the results. It should be noted that the transport costs to the following laboratory are the responsibility of the participants, the choice of carrier is free.