



1. General Aspects

The term of the TC-EM chairman ends May 2023. There were two candidates applying for the position and a majority of the TC-EM contact persons voted for Damir Ilic from FER-PEL, Croatia, who was nominated by the EURAMET president as new TC-EM chairman.

It was recognized that the burden for the TC-EM chairman is rather high. At the last TC-EM contact person meeting different options to distribute this burden a bit more were discussed. It was decided that

1. CMC submission and review will be managed by the former TC-EM chair.
2. Projects will be managed by the SC convenors. They will ask for progress reports and make sure that the projects are in time and properly completed.

The TC-EM has set up a communication group (Karsten Kuhlmann and Luca Callegaro) to collate topics and ideas related to the TC activities and communicate them to the EURAMET communication office.

The TC-EM has selected two contact persons (Karsten Kuhlmann and Jari Hällström) to liaise and contribute to TC-IM 1448 (Development of digital calibration certificates).

2. Projects

Detailed information about the EURAMET projects in the EM field is available from the EURAMET website. An overview of the number of ongoing or agreed projects is given in the table below.

Comparisons	Traceability	Research
8	7	2

3. Comparisons

Seven of the eight comparisons are EURAMET comparisons with a registration in the KCDB. The remaining is a pilot study.

During the last three years, some comparisons going on for a long time or being stuck for various reasons were successfully completed. Now the oldest comparison still ongoing dates back to 2018 and it is in draft A stage. Progress in all comparisons was slowed down in 2019/2020 due to the pandemic. All of them have regained traction in 2022.

4. CMCs

The CMC run EURAMET.EM.18.2022 has been initiated early 2022 with a submission deadline in mid-March. 60 CMC changes (6 new, 32 improved, 22 editorial) were submitted. Almost all of them have passed the intra-RMO and the JCRB review within 12 months. This shows that with the new KCDB an annual submission and review cycle is feasible.

EURAMET.EM.19.2023 has been initiated early 2023, again with a submission deadline in mid-March. 126 CMC changes were submitted (28 new, 67 improved, 24 editorial, 7 deleted). The intra-RMO review is currently ongoing.

The plan is to maintain an annual review cycle with a submission deadline in spring.

5. Activities of the Subcommittees

There are 4 SCs: DC and Quantum Metrology (SC DC&QM), Low Frequency (SC LF), Radiofrequency and Microwave (SC RF&MW), Power and Energy (SC P&E). All SCs have a strong focus on organizing comparisons as part of the MRA. Furthermore they are dealing with R&D activities related to EMPIR.

SC-DC&QM and SC-P&E have a strong involvement with the newly established EMNs for Quantum Technologies and Smart Electricity Grid. In particular the SC-P&E is practically identical with the members of the EMN for Smart Electrical Grids. This could lead to a reorganization of the sub-committee structure in the future. As of now, there is no need to change the structure. Currently the tasks of SCs and EMNs are complementary and the efficient planning of joint meetings limits overhead. In addition, it is better to see how the EMN develops long-term before any structural changes are made.

The recently appointed convenor of the SC LF, Helge Malmbeek (JV, Norway), is leaving the metrological field. He has been replaced by Věra Nováková Zachovalová (CMI, Czechia), who took over on April 13, 2023.

Calibration guidelines 7 (oscilloscopes), 12 (VNAs) and 15 (digital multimeters) are maintained by the SCs. Guides no 7 and no 12, both maintained by the SC RF&MW, have been revised and are currently under review. The SCs LF and DC&QM are planning on a revision of no 15.

6. Participation in EMRP/ EMPIR

In the 2022 EPM call new projects with EM involvement were only funded in the Normative call (2 out of 4 submitted proposals) and the RPOT call (2 out of 2). In the IEM call and the Health call 4 and 1 proposals were submitted, respectively, but none of them was funded.

Two workshops were held to prepare for the EPM call 2023. An online meeting organized by EMN-SEG on November 24, 2022, and a follow-up hybrid meeting at PTB Berlin organized by the TC-EM on January 10/11, 2023. The outcome was a number of project ideas being further addressed in the PRT phase.

7. Capacity Building: Activities of the last year and future needs

There were no specific TC-EM activities in capacity building besides the regular EURAMET initiatives.

8. Meetings

The TC-EM contact person meeting took place at BIM in Sofia (Bulgaria) on October 5 and 6, 2022. It was organized as a hybrid meeting. The next meeting will be in fall 2023 at METAS, Switzerland.

The last SC meetings were in 2021. They were all online. SC meetings for 2023 are planned as follows:

2023-04-18/19: SC RF&MW in Warsaw, Poland, in-person only, (with the Keysight Metrology Workshop afterwards).

2023-04-18/20: SC P&E in Espoo, Finland, hybrid (together with the EMN-SEG meeting).

2023-05-23/24: SC DC&QM in Brno, Czechia, hybrid (with a Quantum Power workshop on the afternoon of the 2nd day).

2023-05-25/26: SC LF in Brno, Czechia, hybrid

9. Issues

Nothing in particular

10. Strategic Planning

Strategic planning of comparisons is done in the SCs. The SC DC&QM, SC LF and SC P&E have a plan in place. Owing to the reduced number of NMIs active in the field, the SC RF&MW does not have regional loops following BIPM key comparisons and therefore less of a need for a plan. Nonetheless, a plan for comparisons on non-key quantities still should be and will be set in place.

11. Outlook for 2023/2024

There has been little activity in the domain of digital transformation. Many NMIs have started initiatives and it could be a goal for the TC-EM to look deeper into that field and find topics where it could either contribute to or profit from.

