



## 1. General Aspects

## 2. Projects

Detailed information about the EURAMET projects in the EM field is available from the EURAMET web-site. An overview of the number of ongoing projects is given in the table below.

Comparisons	Traceability	Research
9	8	2

## 3. Comparisons

During 2018/2019, 1 EURAMET comparison and 2 pilot studies have been completed in the EM field. Besides this, EURAMET is or has been active in a number of CCEM comparisons.

## 4. CMCs

### EURAMET EM CMCs

The CMC set EURAMET.EM.15.2018 was published in the KCDB on June 3, 2019.

The new CMC run EURAMET.EM.16.2019 was initiated on July 3, 2019 and is still ongoing. 17 NMIs submitted 114 new entries with 49 matrices and 166 significant improvements of existing entries with 100 matrices. In addition minor changes for 99 entries with 25 matrices and the deletion of 57 entries with 11 matrices were requested.

All the submissions were reviewed by the members of the TC-EM working group on the review of CMCs. The intra RMO review is passed and the CMC set is currently being uploaded to the new KCDB. The inter RMO review will be conducted using the new web based system.

As part of the submission an extension of the EM service category 11.3 (radio frequency measurements / S-parameters) has been requested for the first time submission of CMCs for planar measurements. The extension of the classification scheme has been approved in the meantime by the CCEM.

### Inter RMO Reviews

SIM.EM.11.2019 was posted on the JCRB website on Juli 12, 2019. The CCEM WGRMO Chair suggested EURAMET review the entire short set. EURAMET accepted and performed the review. SIM.EM.11.2019 was published in the KCDB on April 16, 2020.

COOMET.EM.16.2019 was posted on the JCRB website on October 7, 2019. The CCEM WGRMO Chair assigned EURAMET to review the category 1 submissions. EURAMET accepted and performed the review. The CMC set obtained approval on March 28, 2020. It has been published in the KCDB on July 3, 2020.

## 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 to the the members of the EMN for Smart Electrical Grids. This could lead to a reorganization of the sub-committee structure.

The SC-RF&MW has formed two task groups for a more active maintenance of the calibration guides and to address questions related to the traceability of derived quantities.

## **6. Participation in EMRP/ EMPIR**

In the 2019 EMPIR call new projects with EM involvement were funded in the Energy (5 out of 10 submitted proposals), Normative (4 out of 5), RPOT (1 out of 1) and Networks (1 out of 1) calls.

The EURAMET TC-EM Workshop in preparation for the EMPIR 2020 Call was held at LNE Paris on January 13 and 14, 2020. 49 persons subscribed to the meeting. The meeting was structured with plenary sessions to start and end the meeting and parallel thematic sessions inbetween for consolidating ideas. The outcome was a list of 30 project proposals, which were further addressed in the PRT submission 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**

**TC-EM Contact Persons:** The 13th EURAMET TC-EM Contact Persons Meeting was hosted by INM-RMO and took place in Bucharest, Romania on October 8 and 9, 2019. It was attended by 42 persons including one person from BIPM, one from the EURAMET BoD, two from SASO Saudi Arabia and one guest from a Romanian calibration laboratory.

The 2020 meeting will be hosted by BIM and will take place in Sofia, Bulgaria on October 21 and 22.

**Working Group on Strategical Planning (WGSP):** The meeting took place in Bucharest, Romania, on October 7, 2019. It was attended by 7 persons.

### **Subcommittees:**

SC-DC&QM: May 20 – 21, 2019, at NPL, Teddington, UK.

SC-LF: May 16 – 17, 2019, at SIQ, Ljubljana, Slovenia.

SC- P&E: May 14, 2019, at SIQ, Ljubljana, Slovenia.

SC-RF&MW: April 9 – 10, 2019, at INTA, Torrejon de Ardez, Spain.

## **9. Issues**

The COVID-19 situation limits physical meetings. All satellite meetings of the SCs that were planned as part of CPEM 2020 (biannual conference on precision electromagnetic measurements) have been cancelled. Currently it is also unlikely that the next contact person meeting can be held in its usual form.

## **10. Strategic Planning**

Strategic planning of comparisons is done in the SCs. The SC-P&E is most advanced in that respect. It has a plan in operation. The other SCs have only partly addressed the topic so far. It

was discussed at the contact person meeting in Bucharest and the SC covenors are aware that further action is required.

## **11. Outlook for 2020/2021**

### Major Topics:

- The next CMC submission round will make full use of the new KCDB 2.0 platform. Careful planning and preparation is needed to avoid confusion and frustration of the users with the new tool.
- Further evaluation of the relationship between SCs and newly established EMNs. Changes in TC-EM committee structure might be considered.
- Follow-up program to EMPIR. Requirements and possibilities.



Form of subsequent pages