

1. General Aspects

The EURAMET TC-PR had the annual meeting at the Instituto Português da Qualidade (IPQ) in Caparica, Portugal on January 30 to 31, 2019, with a Workshop prior to the meeting on January 29, 2019.

All activities on projects, comparisons and traceability are updated and can be found on the EURAMET project website <http://www.euramet.org/technical-committees/search-tc-projects/>.

2. Projects

Currently, there are 21 projects within the TC-PR with the status “in progress” or “ongoing”. 7 are comparisons, 12 are traceability projects, 1 is a consultation project and 1 is a research project.

- The consultancy project PR1101 “Strategic planning in Photometry and Radiometry” is led by the TC chair. In 2019, the outcome of the 2018 workshop on coordination, collaboration and support was summarized and presented. The results were grouped in specific topics and actions were suggested. A further workshop was on the upcoming EMPIR Call. At this EMPIR workshop the proposed topics were discussed and suggestions for the TC-PR meeting concerning the support for specific PRTs were done. At the TC-meeting, a large issue was the discussion on ENMs. The TC is involved in the EMN on "Quantum Technologies" and "Climate and Ocean Observation" so far. The TC expressed their need for sustainable structures in other research fields of the TC and expressed concerns about the future role of the TC-PR.
- The research project PR1048 *Cryogenic Solar Absolute Radiometer (CSAR)* aim to develop an instrument that will be able to serve as a future primary standard for the ground-based measurement of Solar Irradiance. The long-term objective is to replace the current artefact-based standard (World Standard Group, WSG) with an instrument that is exclusively based on fundamental physical principles, and that can therefore operate as a true SI standard.
- The traceability projects have the aim to maintain traceability between participating NMIs within the TC-PR.
- For the “Comparison” projects, see next section.

3. Comparisons

The following comparisons are in progress or were completed/concluded since the last GA. Details can be found on the EURAMET project website.

REG. NO.	TITLE	PILOT	STATUS	KCDB
443	<u>Comparison of Ultraviolet Power Meters</u>	LNE	in progress	<u>EURAMET.PR-S4</u>
1116	<u>Spectral responsivity in the range from 900 nm to 1600 nm</u>	VSL	in progress	<u>EURAMET.PR-K2.a</u>
1226	<u>Comparison of Reference Solar Cells</u>	PTB	in progress	<u>EURAMET.PR-S5</u>
1339	<u>Comparison on Total Solar Irradiance</u>	PMOD/WRC	in progress	<u>EURAMET.PR-S6</u>

1412	<u>Key Comparison on spectral regular transmittance</u>	LNE-INM	in progress	<u>EURAMET.PR-K6.2015</u>
1456	<u>Key comparison on spectral regular transmittance 2018</u>	LNE-INM	in progress	<u>EURAMET.PR-K6.2015.1</u>
1468	<u>Pilot study on the detection efficiency of single-photon detectors - SI-SPAD</u>	PTB	in progress	

Completed/concluded since the last GA were:

REG. NO.	TITLE	PILOT	STATUS	KCDB
1307	<u>Bilateral comparisons on transmittance and luminous flux</u>	IO-CSIC	Completed	<u>EURAMET.PR-K6.3</u> <u>EURAMET.PR-K4.3</u>
1344	<u>Bilateral comparison of luminous flux using lamps as transfer standards</u>	LNE	Completed	<u>EURAMET.PR-K4.2</u>
1359	<u>Bilateral comparison of spectral transmittance using a set of filters as transfer standards</u>	LNE	Concluded	<u>EURAMET.PR-K6.3</u>

Proposed, but not yet registered are the following comparisons:

- Bilateral comparison between UME and SASO:
 - on diffuse reflectance: Link needed, probably KRISS; Wait for end of ongoing comparison.
 - on luminous flux: Technical Protocol was reviewed.
- Supplementary comparison on Wavelength suggested by IO-CSIC.
- DFM and RiSE plan to propose a bilateral comparison on spectral responsivity.

4. CMCs

EURAMET.PR.13.2017 was not approved. From this batch, three follow-up batches were submitted, i.e. EURAMET.PR.14.2018, EURAMET.PR.15.2018 and EURAMET.PR.16.2019. All were approved in the intra- as well as in the inter-RMO review. In these three batches, 45 CMCs were submitted, 45 were approved and 4 were withdrawn. Currently a new batch, EURAMET.PR.17.2019, is under intra-RMO review. The batch contains 44 new or changed entries from 6 NMIs.

5. Activities of the Subcommittees

TC-PR has no Subcommittees.

6. Participation in EMRP / EMPIR

In 2018, the projects 18SIB03 BxDiff (New quantities for the measurement of appearance) 18SIB10 chipS-CALe (Self-calibrating photodiodes for the radiometric linkage to fundamental constants) succeeded to be funded within the SI Broader Scope call. The project 18NET04 ForClimateOcean (European metrology network for climate) was granted in the Network call. In Summary, from the 9 PRTs submitted (SIB: 6 / NORM: 1 / NET: 2), 7 advanced to SRTs (SIB: 4 / NORM: 1 / NET: 2) from which 3 were granted (SIB: 2 / NORM: 0 / NET: 1).

The TC is currently involved in the following projects:

EMPIR call 2015 SI: 15SIB07, PhotoLED

EMPIR call 2016 Energy	16ENG02, PV-Enerate
EMPIR call 2016 Environment	16ENV03, MetEOC-3
EMPIR call 2016 Normative	16NRM02, SURFACE
EMPIR call 2016 Normative	16NRM08, BIRD
EMPIR call 2017 Fundamental	17FUN06, SIQUST
EMPIR call 2018 SI Broader Scope	18SIB03, BxDiff
EMPIR call 2018 SI Broader Scope	18SIB10, chipS-CALe
EMPIR call 2018 Network	18NET04, ForClimateOcean

A list with links to the EURAMET webpages for the TC-PR EMRP and EMPIR projects can be found here: <https://www.euramet.org/technical-committees/tc-pr/emrp-empir/>

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

There has been one Researcher Mobility Grant for the MIQC2 project at the beginning of 2018.

8. Meetings

The annual EURAMET TC-PR was held at the Instituto Português da Qualidade (IPQ) in Caparica, Portugal on January 30 to 31, 2019 with a workshop prior to the meeting on January 29, 2019.

Next meeting will be at INM-MD in Moldova, from January 29th to 30st, 2020, with a workshop prior to the meeting on January 28th, 2020.

9. Issues

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10. Strategic Planning

In the annual meeting of TC-PR (January 30 – 31) there were essentially three main topics with respect to the strategic planning of the TC. Maria-Luisa Rastello, CCPR chair and vice-chairperson (GA) of EURAMET gave a presentation on the purpose and the aims of the European Metrology Networks (EMNs). EMNs are considered by EURAMET to be one main building block for collaboration and sustainability. There was a general discussion between the TC members on this new structure and on the commitments of NMIs for the EMNs research work. The TC is currently involved in the EMNs on "Quantum Technologies" and "Climate and Ocean Observation". The TC expressed the need for sustainable structures also in other research fields of the TC and expressed concerns about the future role of the TC-PR. In combination with this topic, also a discussion on a possible follow-up program for EMPIR took place. Furthermore, there were the decisions about the EMPIR-projects to be supported by the TC in the 2019 call.

In the workshop prior to the meeting, the new structure of the CMCs and their submission process were discussed. Also, a summary of the last-year workshop on coordination and collaboration between the TC-PR members were given. This is considered being a continuing process for the upcoming years.

The presentations are available as documents for the annual meeting in Bratislava on the TC-PR website.

11. Outlook for 2019/2020

In the next period, the focus will be mainly on the following topics:

- First, the collaboration shall be more strengthened between the members of the TC-PR. This activity will be supported by the already mentioned workshop on collaboration, coordination and support and its evaluation. The progress in the coordination and collaboration will be constantly monitored at least once a year during the annual meeting or the workshop.
- Second, the TC-PR has to deal with the new established European Metrology Networks. The activities of the TC have to be aligned with the EMN activities. Furthermore, it has to be assured, that also the other TC-PR-relevant topics will find their place in the new EURAMET structure with respect to progress in research and development.
- Furthermore, the second round of EURAMET Key Comparisons will have to be planned in order to follow-up quickly the currently running CCPR Key Comparisons. The process of identifying pilots and participants of these KCs has already started and is an ongoing process.

