

## 1. General Aspects

The EURAMET TC-PR had the annual meeting at the Slovenský metrologický ústav (SMU) in Bratislava, Slovakia, on January 31 and February 01, 2018, with a Workshop on EMPIR Call 2018 on SI, Health, Normative, Networks and on Support, Collaboration and Coordination prior to the meeting on January 30, 2018.

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 23 projects within the TC-PR with the status “in progress”, 8 are comparisons, 13 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. Two sessions for strategic planning were conducted in the EURAMET TC-PR annual meeting in the extension of the 2017 strategic session. In 2017, the expected needs for TC-PR were explored, where the TP conveners presented the research need. In addition, NIST and Photonics21 WG5 presented parts of the planned activities. In 2018, each NMI present their strategic goal for the next 5 years. This will map the ideas of directions and ambitions for the various NMIs. This will form a basis for a discussion on coordination activities. The questions to be addressed were: Who would you collaborate with to meet your goals? Who has complementary skills going in another direction? Who is technology oriented and who is thematically oriented? The outcome from these presentations are to encourage informal collaborations. In parallel each NMI will identify metrological challenges they are facing in their work. This will also contribute to reveal if there are holes in the capabilities that needs to be closed.

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 aim is also to reduce the uncertainty of the current standard (0.3%) by approximately a factor of ten. Following the International Pyrheliometer Comparison (IPC) in 2015, CSAR has continued to take measurements alongside the WSG, thus building a solid record of comparison between CSAR and the current primary 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. Details can be found on the EURAMET project website.

REG. NO.	TITLE	PILOT	STATUS	KCDB
444	<u>Comparison of luminance meters</u>	NPL	concluded	

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>
1307	<u>Bilateral comparisons on transmittance and luminous flux</u>	IO-CSIC	in progress	<u>EURAMET.PR-K6.3</u> <u>EURAMET.PR-K4.3</u>
1339	<u>Comparison on Total Solar Irradiance</u>	PMOD/WRC	in progress	<u>EURAMET.PR-S6</u>
1344	<u>Bilateral comparison of luminous flux using lamps as transfer standards</u>	LNE	in progress	<u>EURAMET.PR-K4.2</u>
1359	<u>Bilateral comparison of spectral transmittance using a set of filters as transfer standards</u>	LNE	in progress	<u>EURAMET.PR-K6.3</u>
1412	<u>Key Comparison on spectral regular transmittance</u>	LNE-INM	in progress	<u>EURAMET.PR-K6.2015</u>

Completed were:

REG. NO.	TITLE	PILOT	STATUS	KCDB
619	<u>Key-Comparison of Spectral Diffuse Reflectance</u>	BFKH	completed	<u>EURAMET.PR-K5</u>
1073	<u>Bilateral comparison on Spectral regular transmittance</u>	BIM	completed	<u>EURAMET.PR-K6.2</u>

As a summary following issues are highlighted:

- Project 443: Draft A was circulated through the participants.
- Project 444 was concluded.
- Projects 619 and 1073 are completed, i.e. the final report is published.
- Project 1307: The comparison on transmittance (EURAMET.PR-K6.3) was abandoned, the comparison on luminous flux (EURAMET.PR-K4.3) is in progress.
- Project 1339 is expected to be completed in 2018.

Proposed, but not yet registered are the following comparisons:

- Bilateral comparison between UME and SASO on spectral diffuse reflectance, spectral responsivity and luminous flux. Here, the technical protocols are currently under review.
- Supplementary comparison on Wavelength

#### 4. CMCs

A new batch of CMC claims was undergoing a inter-RMO review and is now under intra-RMO review. The batch contains 34 new or changed entries and 5 withdrawn entries from 6 NMIs.

#### 5. Activities of the Subcommittees

TC-PR has no Subcommittees.

## 6. Participation in EMRP / EMPIR

In 2017, the project SIQUST (Single-photon sources as new quantum standards) succeeded to be funded within the Fundamental call. MIQC3 (SRT-i21) in the Industry call as well as chipS-CALe (SRT-f12) and Volume Photography (SRT-f05) in the Fundamental call were not funded.

The TC is currently involved in the following projects:

EMPIR call 2014 Industry:	14IND05, MIQC2
EMPIR call 2014 Industry:	14IND13, PhotInd (partly)
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 (to start June 1 <sup>st</sup> , 2018)

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 Slovenský metrologický ústav (SMU) in Bratislava, Slovakia, on January 31 and February 01, 2018.

Next meeting will be at IPQ, Portugal, from January 29<sup>th</sup> to 31<sup>st</sup>, 2019.

## 9. Issues

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## 10. Strategic Planning

In the annual meeting of TC-PR (January 31 and February 01, 2018) there were essentially three main topics with respect to the strategic planning of the TC. First of all, there was the issue of the European Metrology Networks (EMNs). Maria-Luisa Rastello, CCPR chair, gave a presentation on purpose of aims of 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. Concerning the EURAMET Strategic Research Agenda (SRA), there is currently no main update necessary, therefore only brief presentations were given. The third topic was the strengthening of the collaboration between the TC-PR members, indicated by the workshop on coordination, collaboration and support held prior to the annual meeting, where each member presented its specific needs and 5-year strategic goals.

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

## 11. Outlook for 2018/2019

In the next period, the focus will be mainly on two aspects: 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, which was held prior to the annual meeting. The results are available on the TC-PR website and will be summarized to allow an easy overview. At the next meeting respectively prior to the next meeting an aftermath session is planned. Second, the probably new established European Metrology Network on Quantum Technologies, which arises from the originally planned European Metrology Network on Quantum Photonics, will have to be filled with activities with respect to coordination between the members and possible future members of that network.

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.

