

18 May 2012

1. General Aspects

EURAMET TC-PR has currently representative from 23 EURAMET members and 1 associate (a designated institute). Many members are participating in currently running joint research projects EMRP; particularly in JRP ENG05: "Metrology for Solid State Lighting (SSL)", project ENV03: "Traceability for Surface Spectral Solar Ultraviolet Radiation (SolarUV)", project ENV04: "Metrology for Earth Observation and Climate (MetE-OC)" and JRP IND06: "Metrology for Industrial Quantum Communication Technologies (MICQ)".

2. Projects

Since the last GA two new projects has been registered.

PR1216 Inter-comparison of Chromatic Dispersion Reference Fibres between METAS and VNIIOFI.

Bilateral supplementary Inter-comparison of Chromatic Dispersion Reference Fibres, making the link with EUROMET-PR.S1.

PR1226 Supplementary Comparison of Reference Solar Cells

Inter-RMO multi-lateral comparison of reference solar cell. Measurements are made with reference solar cells to ensure the traceability of solar modules. There has never been a comparison of different NMIs for reference solar cells before.

At the same time 3 following projects have been closed.

PR581 "Fibre optic consultation working group", its activity is now covered by a CCPR task group on fibre optics. All members are invited to contribute directly to the CCPR TG (N.B. even non CCPR members).

PR896 „Laser-based radiometry for large-area detectors, luminance standards and spectroradiometers" (research-consultation). Project was temporarily stopped because all these activities are now covered by EMRP project ENV03 Solar UV.

PR156 "Radiant Power of High Power Lasers" (comparisons). The high power laser comparison was postponed after the year 2015.

Beside it, TC-PR last year activities were clearly focused on EMRP (either on running accepted projects or on preparing the proposal for new projects).

Number of agreed or proposed TC-PR projects	2000	2011
Traceability	9	14
Comparison	7	11
Cooperation	3	1
Consultation	3	1

The latest progress reports of all TC-PR projects can be found at the TC-PR webpages. The previous reports are stored in the restricted part of the TC-PR webpages.

3. Comparisons

The current situation of the comparisons is summarised in the table below. One new bilateral comparison has been registered: Inter-comparison of Chromatic Dispersion Reference Fibres between METAS and VNIIOFI. It aims to make the link with EUROMET-PR.S1. Additionally one multilateral Comparison of Reference Solar Cells has been registered in April 2012 aiming to ensure the traceability of solar modules globally across all the RMOs.

One new EURAMET supplementary comparison has started: Comparison of UV-Radiometer used in industrial applications. The drafts of the technical protocol of the comparison were discussed on-line amongst all

participants. The latest version of Technical protocol was approved on 31-01-2012. A mercury line 365 nm is selected at irradiance levels of 0 to 10 mW/cm². Two commercial UV-radiometers will be used for the comparison.

BIPM - Identifier	Euramet Nr	Quantity	status as of 2012-01-31	action, comments
EUROMET.PR- K1.a	1103	spectral irradiance (250-2500nm)	Started in October 2010	Return measurements to be done by participants by 2011-06-30
EUROMET.PR-K2.a	1116	spectral resp. (900-1600nm)	started in June 2011	First round of measurements completed
EUROMET.PR-K2.b	587	spect. resp. (300-1000nm)	Draft A.2 in discussion,	started 2002
EUROMET.PR-K2.b.1	1023	spect. resp. (300-1000nm) bilateral	In progress, no news	
EUROMET.PR-K3.a	569	luminous intensity	Draft A, in progress	
EUROMET.PR-K4	569	luminous flux	In progress	Lamps of 1 participants still at pilot lab
EUROMET.PR-K4.1	823	luminous flux, bilateral	draft B	Report in discussion with CCPR WG KC
EUROMET.PR-K5	619	spectr. diffus. reflectance	Draft A-2 in discussion	
EUROMET.PR-K6	538	spectr. diffus. transmittance	completed, 2009	
EUROMET.PR-K6.1	766	spectr. diffus. transmittance, bilaterl	measurement completed	
EUROMET.PR-K6.2	1073	spectr. diffus. transmittance, bilaterl	In progress	
EUROMET.PR-S2	156	high laser power	Part 1 (power up to 10W) completed, 2009	
EURAMET.PR-S4	443	Comparison of Ultraviolet Power Meters.	In progress	
EURAMET.PR-S4	1216	Chromatic Dispersion Reference Fibres bilateral	In preparation	
EURAMET.PR-S5	1226	Reference Solar Cells	In preparation	

Organisation of comparisons

At the last meeting the problem of slow progress of comparison has been deeply discussed. One way to make things easier, cheaper and thus faster is to have strong guidelines how to make particularly the analysis and reporting cycles more routine. Within CCPR WG KC several guideline documents are under preparation. In addition, the steps towards sharing capacity amongst participants on preparing and characterising of comparison artefacts are being taken in preparation works of 2nd round of KCs.

Selection criteria for EURAMET participation in a CCPR-KC

At the CCPR WG KC meeting 2009 it has been definitively decided that the number of participants on key comparison at CCPR level is limited to 12 laboratories. The group of 2 RMOs, EURAMET plus COOMET, is entitled to a maximum of 6 laboratories. It has been left up to the RMO's Groups to decide on the structure of Selection Criteria. In 2010 a list of selection criteria and its prioritised order has been established and approved by TCPR EURAMET to ensure that the needs of both the RMOs and all NMI's are taken into account, particularly in terms of optimum linkage to the KC reference value, and to provide encouragement to take on the role of pilot within the RMO. The negotiation between the EURAMET and COOMET has run for following 2 years. Consequently the Criteria were approved by both RMOs in following shape during the last TCPR meetings in March 2012 (EURAMET) and May 2012 (COOMET):

1. Must meet CCPR Criteria
2. Selected pilot of corresponding EURAMET or COOMET KC
3. Be prepared to be link laboratory to EURAMET and COOMET comparison KC
4. Pilot of a "current round" CCPR key comparison
5. Pilot of previous CCPR KC for same quantity
6. Pilot of another EURAMET, COOMET KC or SC (but not bilateral)
7. Relative uncertainty of uncorrelated uncertainty components in CMCs
8. Relative uncertainty of declared uncorrelated uncertainty for KC
9. Participation in previous 2 CCPR-KCs for the same quantity
10. Secret ballot

4. CMCs

An overview of the past and present CMC submissions is given in the table below.

Designation	Contents	Status	Comments
EUROMET.PR.1.2001	Initial submission from most of EUROMET NMIs	published, 2001-10-10	
EUROMET.PR.2.2002	submission from most of EUROMET NMIs	published, 2002-10-31	
EUROMET.PR.3.2005	CMCs from FI, SK, ES, and CH	published, 2006-04-26	
EUROMET.PR.4.2006	CMCs from CH, DE, FI, GB and TR	published, 2007-05-11	Some CMC from DE(PTB), FI(MIKES), and CH(PMOD) got lost
EUROMET.PR.5.2007	Some of the lost CMCs from FI	published, 2007-06-22	fast track process, initiated during CCPR WG CMC meeting
EUROMET.PR.6.2007	Some of the lost CMCs from FI and DE	published, 2008-02-08	FI cancelled the submitted quantities on fibre optics
EUROMET.PR.7.2007	The lost CMC's from CH(PMOD)	published, 2008-09-09	
EUROMET.PR.8.2008	CMCs from DE, FR, FI, (RO), (TR), NL	published, 2009-03-24	CMC's of RO were not proceed to the interRMO review because results of corresponding key comparison were not yet approved, no review was necessary for TR
EURAMET.PR.9.2009	CMCs form AT, CH, CZ, DE, ES, FR, HU, RO, RS	published 2010-10-15	only APMP promised to do a review by 2010-03-31, 2010-04-13 comments received from APMP, reply from EURAMET 2010-05-31, notification to be done by APMP by 2010-06-21
EURAMET.PR.10.2011	CMCs form CH, DE, ES, PL, RO	Published 2012-02-03	only APMP and SIM promised to do a review by 2010-03-31, comments received from APMP and SIM by 2011-07-04, reply from EURAMET posted 2012-01-20, approved by APMP and SIM on 2012-01-31

During the last year EURAMET TC-PR reviewed batch APMP.PR.8.2011 and has recently been reviewing the batch COOMET.PR.5.2011. New call for EURAMET TCPR CMC update (batch EURAMET.PR.11.2012) was opened in March 2012 with plans for publishing it in January 2013.

5. Activities of the Sub-Committees

TC-PR has presently no Sub-Committee.

6. EMRP

Many members are participating in currently running joint research projects EMRP; JRP ENG05: "Metrology for Solid State Lighting (SSL)"

In September, 2011 several EMRP projects strongly related to TC-PR started, in particular:

- ENV03 Traceability for Surface Spectral Solar Ultraviolet Radiation
- ENV05 Traceable Radiometry for Remote Measurement of Climate Parameters
- IND06 Metrology for Industrial Quantum Communication Technologies

Additionally some radiometry laboratories are contributing some smaller part to other projects.

7. Meetings

The last meeting of the EUROMET TC-PR was held from March 7 to 8, 2012 in Espoo, Finland, hosted by MIKES. It was attended by 18 participants and 9 guests. Beside the others, the meeting was focussed on discussing the process of updating the TCPR road maps and preparing the PRTs for actual EMRP Call 2012.

The next TC-PR meeting will be held from 27 February to 28 February 2013 in Lyngby, Denmark

8. Issues

At the last meeting the problem of slow progress of comparison has been deeply discussed. One way to make things easier, cheaper and thus faster is to have strong guidelines how to make particularly the analysis and reporting cycles more routine. Within CCPR WG KC several guideline documents are under preparation. In addition, the steps towards sharing capacity amongst participants on preparing and characterising of comparison artefacts are being taken in preparation works of 2nd round of KCs.

9. Strategic planning

All EURAMET TC-PR Strategic planning activities are provided within the project: PR1101 "Future Trends in Radiometry and Photometry" having aimed to explore, which avenues will take the research and development within photometry and radiometry (PR) in the future.

Here it was decided to update the iMERA-Roadmaps (2006) to reflect the impacts of research activities within PR community in last 5 years. After a debate summarising the experiences gained and the visions foreseen the conclusion was to evolve the number of road maps to four. Following particular topics were agreed upon:

- Climate/Environment,
- Energy
- Basic Science/ Quantum Optics
- Industry.

Focussed meeting was organised by TCC and PR1101 coordinator during the last TCPR meeting in Espoo to present the 1st Drafts of updated Roadmaps and exchange the opinions about how to reflect recent EM-PIR related documents into them.

9. Outlook for 2012/2013

The major focus will be put on proceeding with (eventually completing of) 1st round of RMO KCs and on preliminarily planning of its 2nd round. Beside it the necessary effort will be devoted to preparing JRP proposals for the EMRP call 2012 and to strategic planning towards the upcoming EMPIR program.

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Chair EURAMET TC-PR 2012-05-18