

Comité Consultatif de Photométrie et Radiométrie (CCPR)
Strategic Planning Working Group (WG-SP), 12th Meeting
BIPM, Sèvres, France
Tuesday, 3 July 2018, 14:00 – 17:30

Draft Minutes, Version 1.3 (2019-02-7)

Attended by the following members (M) and observers (O):

Joanne Zwinkels, NRC (M), WG-SP Chair
Mohammad Z. AlFohaid, SASO-NMCC (O)
Peter Blattner, METAS (M)
Liesl Burger, NMISA, AFRIMETS proxy (M)
Joaquin Campos Acosta, IO-CSIC (M)
Nigel Fox, NPL (M)
Jimmy Dubard, LNE (M)
Erkki Ikonen, MIKES (O)

Annette Koo, MSL (M)
Stefan Kück, PTB, EURAMET (M)
Dong-Hoon Lee, KRISS (M)
John Lehman, NIST (M)
Yandong Lin, NIM (O)
Maria Luisa Rastello, CCPR President
Peter Manson, NMIA (O)
Gaël Obein, LNE (M)
Yoshi Ohno, NIST (M)
Marek Smíd, CMI (O)
Armin Sperling, PTB (M)
Steven van den Berg, VSL (M)
Lutz Werner, PTB (M)
Emma Woolliams, NPL (M)
Kuei-Neng (Gilbert) Wu, CMS/ITRI (O)
Tatsuya Zama, NMIJ, APMP (M)
Hiroshi Shitomi, NMIJ (M)
Joële Viallon (CCPR Executive Secretary)
Teresa Goodman (NPL)
Thiago Menegetto, INMETRO, SIM (M)
Anatolii Bescupschii, NMI Moldova, COOMET proxy(O)

Regrets were received from Maria Nadal, NIST (incoming WG-SP chair)

1. Opening of the Meeting

Introduction of Members and Observers

WG-SP chair Joanne Zwinkels opened the meeting. She indicated that this will be her final meeting as chair. Unfortunately, the incoming chair Maria Nadal could not come to the meeting and sent her regrets.

All participants and observers introduced themselves.

2. Appointment of the Rapporteur and Approval of Agenda CCPR WG-SP/18-01

Stefan Kück was appointed as rapporteur.

Joanne Zwinkels gave an overview of the agenda. There were no objections; agenda was approved.

3. Approval of the Minutes of the 11th meeting CCPR WG-SP/18-02

Joanne Zwinkels thanked Emma Woolliams for preparing these minutes.

The minutes were approved.

4. Review of Action Items from the Minutes of the 11th meeting CCPR WG-SP/18-02

AP-2017-1: Stefan Kück to register the TG11 pilot comparison on the KCDB

Stefan Kück submitted registration form. However, pilot studies are not registered. There will be a list of comparisons and pilot studies discussed and compiled at the CCPR WG-KC meeting on July 4th, 2018. It should be discussed, whether it will be possible to place this list onto the CCPR website.

AP-2017-2 (carried over AP-2016-5): TG8 Chair (Marla Dowell) will carry out a survey to determine demand/options for future CCPR work relating to THz metrology to guide a decision about continuity of the TG.

John Lehman stated that there is not a lot of support for THz activities at NIST (which are limited to THz radiation power measurements) so he had contacted Andreas Steiger (PTB), who has more activities in this field, concerning the survey. Nigel Fox commented that the issue of the AP-2017-2 was to ask for further interest in this TG and also raised the question about what wavelength range is understood under “THz”. THz corresponds to wavelengths in the range from 1 mm to 100 microns. Joanne Zwinkels indicated that the survey was to update the findings of the initial survey conducted by TG8 Chair (Kent Rochford) in ~ 2012, e.g. if there was interest now in CCPR work related to THz optical property measurements.

AP-2018-01: John Lehman to ask Andreas Steiger to carry out the survey.

AP-2017-3: Joanne Zwinkels to check the original date for setting up WG-CMC to include in the strategy document. And to update the list of comparison guidance documents after the WG-KC meeting.

This was done and included in the version of the Strategy document distributed to the CCPR members for their approval (CCPR WG-SP/18-09).

AP-2017-4: Maria-Luisa Rastello to find out at the CC chairs' meeting when the strategy document should be completed and to inform Joanne Zwinkels of this target date.

Maria Luisa suggested finishing the strategy document as soon as possible. See also Agenda item 7.0.

AP-2017-5: Everyone, but especially Emma Woolliams, Nigel Fox and Steven van den Berg, to review the document, especially section 5.

The review of the strategy document was carried out. Joanne Zwinkels thanks especially Emma Woolliams, Nigel Fox and Steven van den Berg. Further discussion on the strategy document, see Agenda item 6.0.

AP-2017-6: Tatsuya Zama to contact the membership with a discussion document and/or questionnaire by end September 2017.

Not finished yet. Tatsuya Zama said that he had prepared a draft questionnaire and will distribute this to the TG12 membership after the CCPR WG meetings. See also his presentation on TG 12 (CCPR WG-SP/18-15).

AP-2017-7: John Lehman to provide Joanne Zwinkels with the name of the CENAM collaborator (in fibre optic responsivity pilot study) and Joanne Zwinkels to include this person in the list of task group members.

Not done yet.

AP-2018-02: John Lehman to provide Joanne Zwinkels with the name of the CENAM collaborator after the meeting.

AP-2017-8: Yoshi Ohno to share the draft 6 of the CIE format version for CD ballot with the WP-SP and WP-SP members to review this document and provide comments.

Done.

AP-2017-9: Maria Luisa Rastello to inform the CC Presidents' meeting that the CCPR will meet in July 2018.

Done. Next CCPR meeting 16 – 20, September 2019

AP-2017-10: Joanne Zwinkels to ask Joële Viallon to email CCPR members asking for new chair nominations (deadline for nominations mid-August 2017)* and for the CCPR President to select a new chair if multiple applications are received for early September.

Following the meeting, this announcement by Joële was made on June 27, 2017 with a deadline of 30 September 2017 for nominations for new Chairs for both WG-SP and WG-KC positions

Done. Maria Nadal (NIST) was selected to be the new Chair of WG-SP, with term commencing at the 2018 WG-SP meeting.

AP-2017-11: Any CCPR member wishing to take the role of chair of WG-SP (or to nominate another CCPR member) to respond to Joële Viallon's call, preparing a nomination letter.

Done.

5. Documents Presented to the Meeting

The following 14 working documents were presented to the meeting:

- Agenda for CCPR WG-SP 2018 BIPM meeting, version 1 (CCPR WG-SP/18-01)
- Minutes of the 11th Meeting of WG-SP at Tokyo, Japan, 14 June 2017, Final version 1.3 (CCPR WG-SP/18-02)
- Draft Appendix 3 of the ninth SI brochure, 5 February 2018 (CCPR WG-SP/18-03)
- Draft Resolution A – 26th meeting of the CGPM (13-16 Nov. 2018) (CCPR WG-SP/18-04)
- Information for users about the proposed revision of the SI (CCPR WG-SP/18-05)
- TG11 Few Photon Radiometry presentation at meeting, Boulder, CO, 4 Aug. 2017 (CCPR WG-SP/18-06)
- TG11 meeting protocol and attendance list, Boulder CO, 4 Aug. 2017 (CCPR WG-SP/18-07)
- TG11 update on schedule for pilot study on detection efficiency of single-photon detectors – Si-SPAD, 7 March 2018 (CCPR WG-SP/18-08)
- Updated version of CCPR Strategy Document for period 2017-2027, version 20-Feb-18 (CCPR WG-SP/18-09)
- JTC-2 Technical Report “Principles Governing Photometry” for CD ballot (CCPR WG-SP/18-10)
- JTC-2 (CIE-CCPR) status report presentation to CCPR WG-SP (CCPR WG-SP/18-11)
- CCPR poster presented to 2014 CGPM (CCPR WG-SP/18-12)
- Proposal of an improved structure for the CMC entries in fibre optics (CCPR WG-SP/18-13)
- TG7 Discussion Forum on Few Photon Metrology – report of TG7 meeting at Boulder, CO on 4 August 2017 (CCPR WG-SP/18-14).

AP-2018-03: All presenters at WG-SP 2018 meeting to submit their presentations to Stefan for upload to the CCPR WG-SP website.

6. Reports of WG and TG Chairs and Matters Arising:

WG: Strategic Planning (Joanne Zwinkels) CCPR WG-SP/18-03, /18-04

Joanne Zwinkels gives progress report, [see CCPR WG-SP/18-16](#).

Specifically, Joanne Zwinkels encouraged TG chairs to make use of the CCPR website Members only area for distribution of information and discussion with TG members.

Joanne Zwinkels thanked Maria Luisa Rastello and Peter Blattner for their efforts to ensure that the important CCPR recommendations of revisions to the SI-brochure were implemented by the CCU.

The final version of the 9th SI-brochure and on-line Appendix 3 will be published on World Metrology Day 20 May 2019.

Joanne Zwinkels presented the current priority goals of the CCPR WG-SP:

- Update CCPR poster
- Finalize and publish updated document on Principles Governing Photometry
- Finalize and publish updated CCPR strategy document
- Advance the aims of the Discussion-type task groups

Joanne also indicated that the incoming WG-SP Chair (Maria Nadal) would most likely be adding to this list based on any new business items involving WG-SP. In particular, Maria Luisa Rastello, noted that another CCPR priority goal within the next year is to update the *mise-en-pratique* when the new SI is published to include the reformulated definition of the candela.

TG4: SI (Stefan Kück) CCPR WG-SP/18-05

Stefan Kück gave a presentation on the details of the implementation of the CCPR recommendations in the current version of the 9th SI brochure (see [CCPR WG-SP/18-17](#)).

Discussion: Maria Luisa Rastello asked about revising the first sentence in the candela definition to delete the clause “in a given direction” since the definition of “intensity” already includes this concept; this change would have to be made throughout the document. This proposed revision was strongly supported by the CCPR members present. The CCU Executive Secretary, Estefania Mirandes, will submit this CCPR request to the CCU chair. However, she noted that the document has already been sent to the member states.

Peter Blattner noted that the discussions have largely been focussed on the negligible impact of the new SI on the candela and other photometric units. However, the consequences of the redefinition of electrical units will have a measurable impact on radiometric measurements, e.g. for ESRs, the power changes can be 2 parts in 10^7 and for shunt resistors, the voltage changes can be 1 part in 10^7 , depending upon the sensitivity of the source. It was also noted that the redefinition of the temperature unit (Kelvin) will have a small impact on radiometric measurements.

TG6: Discussion Forum on Fibre Optics (Jimmy Dubard)

Jimmy Dubard gave a presentation (see [CCPR WG-SP/18-18](#)). He highlighted the upcoming CPEM conference 8 – 13 July 2018 where there will be a topic on Photonics and Optical Metrology. Joanne Zwinkels asked which TG6 members would be attending this session – Marek Smid, John Lehman and Jimmy Dubard; Maria Luisa Rastello said that she would also be attending.

Nigel Fox raised the question about using a CCPR logo etc. in the presentations to highlight the involvement of CCPR in organizing this session.

Joële Viallon suggested using the SI-logo which is available on the BIPM website at: SI units/ Revised SI: Download area.

TG9: OTDR length comparison (Jacques Morel)

Jimmy Dubard briefly presented the activity report on the on-going OTDR length comparison (CCPR WG-SP/18-19). The measurements are all completed, and the comparison data is being analysed. In parallel, METAS is preparing OTDR comparison artifacts for other possible quantities, eg. spectral attenuation (loss measurements). A discussion on CCPR service categories for fibre optics followed. Because there is an ongoing general discussion on this topic within WG-CMC the proposed service category was not yet implemented. The METAS proposal submitted by Jacques Morel was discussed earlier at the CCPR WG-CMC 2018 meeting; however, no final decision was taken.

TG7: Discussion Forum on Few Photon Metrology (Dong-Hoon Lee) CCPR WG-SP/18-14

Dong-Hoon Lee gave the presentation, [see CCPR WG-SP/18-14](#). The presentation focused on whether TG7 members should work on the development of possible technical guidance documents or collaborate with a standardizing organisation.

A discussion followed. Stefan Kück stated that in his opinion technical guidance documents in the single photon field are not needed or are already existing; see e.g. the ETSI documents. Yoshi Ohno suggested a joint Task Group between CCPR and CIE. Nigel Fox said that IEC or IEEE would be better choices since they are more knowledgeable than CIE in this particular field. Maria Luisa Rastello stated that CEN/CENELEC is already carrying out some work in the few photon field and that ISO/IEC would be better contacts. Peter Blattner stated that the terminology in this field already exists in CIE and that CIE would be an easier route to standardization than the other organisations which require their experts to be members of their national standardizing organisations. Nigel Fox replied that “easy access” should not be an argument, but the community with the right experts was more important. Peter Blattner replied that whenever absolute optical radiation measurements are concerned, CCPR should be involved. Joanne Zwinkels asked whether a technical document could be published on the CCPR website? Joële Viallon replied that this is probably not possible (there are no examples of technical reports or technical notes published on the BIPM website) and that she agreed with Nigel’s statement that CCPR needs to liaise with the appropriate standardization organization for this work.

Presentation by John Lehman on needs for improved traceability of primary detector calibrations (1 W level) of quantum enhanced detectors developed for LIGO

John Lehman gave a presentation, [see CCPR WG-SP/18-20](#).

The background to this pressing need for improved traceability of primary detector calibrations at the 1 W level is to improve uncertainties in the observation of gravitational waves at the LIGO facilities. For their measurements, the photon momentum, amongst other parameters, plays an important role, because the mirror displacement in the experiment is proportional to the absolute power. A lower uncertainty in the power measurement, currently approx. 1 %, would give better information, e.g. about location and distance of the waves' origin. John Lehman referred to the EURAMET supplementary comparison EURAMET.PR.S2 (laser power responsivity at 1W and 10W), published in 2009, which showed large deviations in the measurement results of the NMIs and in most of the cases, large uncertainties (> 1 %; up to 3%). The LIGO community is concerned about these large variations in independent realizations. They would like to see improved uncertainties at the 0.1% level.

A discussion followed. Stefan Kück stated that this is very interesting, but what should be the next steps and who is LIGO's contact person? Dong-Hoon Lee agreed and raised the question of forming a task group. John Lehman suggested getting back to his LIGO contact and reporting that his ideas for reducing uncertainties were favourably met at the meeting of the CCPR strategic planning working group. Nigel Fox asked about the actual aim of the initiative; is it to achieve consistency between the NMIs? and should the NMIs work independently or together to improve independent realizations? He also raised the question about forming a task group. Dong-Hoon Lee asked about the reason for the power level of 1 W. John Lehman replied that currently an InGaAs detector in an integrating sphere is used.

Decision D-2018-01: A task group (TG14) on “Discussion Forum on Improved 1W Laser Power Responsivity” is formed with the following members: John Lehman (chair), Peter Blattner, Dong-Hoon Lee, Stefan Kück, Steven van den Berg, Joaquin Campos, and Jimmy Dubard.

Intermezzo:

Maria Luisa Rastello (CCPR president) payed tribute to Yoshi Ohno and Joanne Zwinkels for their outstanding and tremendous work as WG chairs and gave both of them a present of appreciation!

Coffee & Tea Break

TG11: Single Photon Radiometry (Stefan Kück) CCPR WG-SP/18-06, /18-07, /18-08 and Review of action items from TG11 meeting: 4 Aug. 2017 (co-located with Single-Photon Workshop in Boulder, CO)

Stefan Kück gave a presentation, **see CCPR WG-SP/18-21.**

Stefan Kück gave an overview about the current status of the pilot study on detection efficiency at 850 nm and a brief outlook for the planned upcoming pilot study on detection efficiency at 1550 nm. He suggested, considering the delays in the 850-nm

pilot study and the current heavy workload, to postpone starting the 1550-nm pilot study (planned for July 4th, 2018) to a later date. There were no objections. He also stated that currently within a EURAMET project, pilot studies at 850 nm and 1550 nm between three NMIs are being carried out and that it would be reasonable to wait for their outcome in order to make use of the experience derived from these studies.

TG8: Discussion Forum on THz Metrology (Marla Dowell/ John Lehman)

Brief discussion on this agenda item since it was already taken up earlier in the meeting under AP-2017 (see AP-2018-01: John Lehman to ask Andreas Steiger to carry out the survey.)

TG10: Ad hoc on CCPR Strategy document (Joanne Zwinkels) CCPR WG-SP/18-09 and Follow-up discussion on finalizing this document

Joanne Zwinkels presentation on TG10, [see CCPR WG-SP/18-22](#). There were three APs from last CCPR WG-SP meeting, all completed, see above.

Joanne Zwinkels presented the status of the document update. The version of February 2018 was distributed to CCPR for their review and approval. Last update was carried out in April 2018 incorporating comments from this review process. This latest version (CCPR WG-SP/18-09) is intended for discussion and finalization at this CCPR WG-SP meeting, for possible submission to CGPM meeting in November 2018. Joanne Zwinkels presented the current version of the strategy document distributed as a working document for this meeting. Before the meeting, no further feedback was received. Joanne Zwinkels thanked all contributors.

Joanne Zwinkels expressed her wish to have the document approved and submitted as soon as possible. There were a few additional inputs to the document:

Nigel Fox asked to provide an additional link from WMO to the aerospace industry in the Figure in Section 4 on Stakeholders.

Erkki Ikonen expressed his view that the document was very useful, especially in the information that is provided in the Section on Future Scan. He raised the general question about possible national projects for photo- and biotechnology and single-photon metrology for use in the medical sector, which are not included in the document. A discussion followed. Dong-Hoon Lee indicated that many imaging instruments use photon counting techniques; he gave the example of using single photon metrology for measuring very weak fluorescence to determine concentration of fluorescent molecules. This is more of a biological/chemical application and there is little demand for traceable optical measurements. Joële Viallon made the comment that the chemistry community is concerned with metrology but even if they use a light source in their application, they do not necessarily need to have this light calibrated.

Joanne Zwinkels raised the question, whether more metrological education in some fields, especially health should be carried out by the CCPR. Nigel Fox responded that one should be careful in this regard, because e.g. metrology in health is very much affected by the individual concerned. A discussion on this followed.

Erkki Ikonen also raised the question about a statement on lighting on page 9 (“lighting accounts for 20 % of the world-wide energy use.”). Should “energy” be replaced by “electricity” and is this statement correct at all?

AP-2018-04: Joanne Zwinkels to check statement on percentage of energy/electricity used world-wide for lighting in the CCPR Strategy Document and revise, if needed.

Stefan Kück suggested to already include guideline G8 in the Strategy Document, which was recently finalized in WG-CMC (TG1) and posted on the CCPR website. Maria Luisa Rastello asked about guideline G3, because it is not included in the list of CCPR Guidance documents. Yoshi Ohno replied that this guideline was removed, because it is not necessary anymore since its content on Terms of Reference was incorporated in the Guidance document on Membership of WG-KC.

AP-2018-05: All to provide minor editorial comments on the CCPR Strategy document (CCPR WG-SP/18-09) to JZ within two weeks (17.07.2018) and she will submit the document with these minor revisions, for posting on the CCPR web-site.

Note: The CCPR strategy document was approved by CCPR, still minor editorial changes are possible, see AP-2018-05

TG12: Discussion Forum on the Use of White LED Sources for Photometry (Tatsuya Zama / Hiroshi Shitomi)

Tatsuya Zama gave a presentation on TG12, **see CCPR WG-SP/18-15**. His report included the following previous and ongoing activities:

- CIE Reportership on DR1-62, WG-KC TG4 pilot study for LED standards, APMP TC-PR annual meeting, NewRad 2017 conference.
- Consultation with TG 12 members: There will be a questionnaire issued within the next week; the four questions to be included on this survey were shown.

Joanne Zwinkels asked how the priorities will be set using the results of this questionnaire. Tatsuya indicated that this will provide information on interests, applications and collaborative opportunities, including possible industry partners. Nigel Fox stated that the questions are at a very high level, so what parameters are really asked for in the technical specifications? Joanne Zwinkels suggested that NMIJ fill out the questionnaire first to give guidance to the other NMIs in order to get consistent information.

Yoshi Ohno stated that the CIE Div. 1 Reporter ship (DR1-62) recommendations on LED spectra are included in the revised CIE 15 Colorimetry document, which is in

approval status. Also, in CIE Div. 2, there has been a lot of work undertaken with respect to LED sources.

Peter Blattner added briefly on related CIE activities, e.g. CIE TC 2-90, where a reference LED spectral distribution and an evaluation metric are being developed.

TG13: Optical fibre power responsivity (John Lehman)

John Lehman gave a presentation on optical fibre power responsivity; see **CCPR WG-SP/18-23**, for wavelengths of 1310 nm and 1550 nm. Fibre coupling is one major issue in the uncertainty budget.

NIST had previously developed a transfer detector suitable for fibre measurement using curved mirror. Currently, they have developed a fibre-coupled cryogenic radiometer (CR) in collaboration with CENAM. It is planned to carry out a comparison of a fibre coupled DUT using a CR as standard. Calibration of single-photon detectors may also be possible. John Lehman has written a technical protocol for a pilot study on fibre optical responsivity using fibre-coupled CR. The start date will depend upon what labs want to participate; currently, it is planned between NIST and CENAM first and then NIST and CMI.

Nigel Fox asked about the specific procedure, what will be circulated and why a cryogenic radiometer is needed? John Lehman clarified that a detector is circulated. Marek Smid stated that the objective of the comparison is to validate the feasibility of a new technique, in this case an “all-in-fibre” comparison. He compared the situation with the one several years ago with the cryogenic radiometer comparison. Nigel Fox asked why there is the requirement for the use of a cryogenic radiometer, if other factors are dominating the uncertainty and asked about the aimed uncertainty and what is the contribution of the cryogenic radiometer. John Lehman replied that the aimed uncertainty is 0,4 %, approx. 0,02 % from the cryogenic radiometer. Yoshi Ohno stated that it fits better in WG-SP, because it is a pilot study rather than a pilot comparison.

AP-2018-06: John Lehman to send technical protocol to Joanne Zwinkels (for distribution to WG-SP). The expression of interest to participate in this comparison/study should be stated before the end of 2018. The wording should be switched from “pilot comparison” to “pilot study”.

JTC-2 (CIE-CCPR): Principles Governing Photometry (Yoshi Ohno)

- Follow-up discussion on next steps for BIPM publication (All) CCPR WG-SP/18-10, CCPR WG-SP/18-11

Yoshi Ohno reported on status of JTC-2 (CIE-CCPR): Principles Governing Photometry. Currently this document is in CIE approval phase. CD-phase (commenting draft) is completed and there was only one comment from Armin Sperling. Next stage in CIE is the ED phase (enquiry draft). Finally, there will be

one more CIE stage for commenting and approval. After that, only small editorial changes can be made. Yoshi Ohno also invited the CCPR WG SP members to provide comments on the document.

Maria Luisa Rastello raised the question whether both K_{cd} and K_m should be used in the document. Peter Blattner replied that it is necessary to keep both as they have different definitions and this distinction and use are well-described in the current document.

7. Report from BIPM/ CIPM (Maria Luisa Rastello)

Maria Luisa Rastello informed the meeting attendees about the upcoming CGPM Session. The CCPR timeslot for presentations will be Thursday, 15 November 2018 from 4:00 pm to 4:45 pm. There will be talks from Yoshi Ohno (as CIE president) and Maria Luisa Rastello (as CCPR president); each talk followed by discussion.

[AP-2018-07: Maria Luisa Rastello and Yoshi Ohno to coordinate their presentations for the CGPM.](#)

The CCPR has another opportunity to present their work at the CGPM meeting; there will also be a CCPR poster. Maria Luisa Rastello suggested starting from the old poster (presented at CGPM in 2014) and update; see section 10.2.

No further discussion.

8. Report from CIE (Peter Blattner)

Peter Blattner gave a presentation; see CCPR WG-SP/18-24. Peter Blattner specifically highlighted a few points in the CIE research strategy. He also presented additional activities, amongst others: there is a new TC (2-90) on LED Reference Spectrum for Photometer Calibration that was recently approved by the CIE BA, a new TC (2-91) on LED package measurements that will develop a new CIE Standard and a new TC proposal for a File Format for Luminous Intensity Distributions. Within CIE Div. 2, there is also a new strategy being developed in Spectrophotometry, where an adhoc Task Group has been established and will be having their first Webex meeting in August/Sept. 2018. There will be a CIE tutorial and practical workshop on LED measurements (in accordance with CIE S025) in Moscow, Nov. 5-8, 2018. The next CIE Quadrennial Meeting will be June 14-22, 2019 in Washington, DC. At that meeting, Peter Blattner will follow Yoshi Ohno as the new CIE president.

9. Review of membership: Chair & members of Working Group & Task Groups (in part. TG8, TG12)

Marla Dowell stepped down as chair of TG8. It was proposed by John Lehman that Andreas Steiger (PTB) might be willing to take on the role of Chair of this TG, see also AP-2018-01.

Tatsuya Zama confirmed that he will continue to chair TG12, at least for the next couple of years.

Welcome new WG-SP Chair, Maria Nadal (term begins)

The formal transfer of the WG-SP Chair position from Joanne Zwinkels to Maria Nadal at this meeting is unfortunately not possible due to the absence of Maria Nadal.

AP-2018-08: Maria Nadal to ask Andreas Steiger if he is willing to take over the chair position for TG8. Note: the future of this TG will depend upon the results of the survey to be conducted under AP-2018-01.

10. New WG-SP Business

10.1 Discussion of document on Uncertainty Estimation in Primary Radiometric Temperature Measurement CCPR/16-55

Emma Woolliams reported on the document prepared by members of CCT including herself, which was circulated within CCPR. Emma indicated that CCT has a number of these uncertainty documents indicating both best and normal uncertainty budgets to support CMCs. There were no further comments given at the meeting on the document. Comments from CCPR are possible until July 31st, 2018.

10.2 Discussion on preparation of a new poster on CCPR activities for the CGPM CCPR WG-SP/18-12

Joële Viallon reported that the poster will have different format for the 2018 CGPM meeting, but this new template is not yet available.

AP-2018-09: Joële Viallon to send template to WG-SP for poster as soon as available.

Joanne Zwinkels suggested establishing an ad-hoc group for preparing this poster according to this new template. The poster is to be ready by end of October 2018. First printing of draft poster in mid-October.

Decision D-2018-02: A new ad-hoc group for the preparation of the CCPR poster is formed. Chair: Maria Nadal, Members: Nigel Fox, Stefan Kück, Gaël Obein, Yoshi Ohno, Joanne Zwinkels, Joële Viallon.

10.3 Discussion of WG-CMC 2018 meeting proposal for an improved structure for the CMC entries in fibre optics (Peter Blattner/Jacques Morel) CCPR WG-SP/18-13

This issue was already discussed within WG-CMC. Marek Smid briefly summarized. Currently, there are two versions of a structure discussed. Within WG-CMC, it was decided to establish a new TG on this issue.

11. Recommendations to CCPR

None.

12. Discuss possibilities for liaisons or meetings of TGs in conjunction with conferences

No concrete plan was identified.

13. Next meeting date

Joële Viallon announced the next WG-SP meeting in 2019; it will be in the week from September 16th to September 20th, before the CCPR-meeting. There will be time and room for a workshop available. A possible topic for a workshop could be in relation to CCPR WG-SP TG12: Discussion Forum on the Use of White LED Sources for Photometry.

However, no decision was made, nor action taken on this.

14. Adjournment

Review of the action points of the meeting.

End of meeting.

List of action points:

AP-2018-01: John Lehman to ask Andreas Steiger to carry out the survey (for TG8).

AP-2018-02: John Lehman to provide Joanne Zwinkels with the name of the CENAM collaborator (in fibre optic responsivity pilot study) after the meeting.

AP-2018-03: All presenters at WG-SP 2018 meeting to submit presentations to Stefan for upload to the CCPR WG-SP website.

AP-2018-04: Joanne Zwinkels to check statement on percentage of energy/electricity used world-wide for lighting in the CCPR Strategy document and revise, if needed.

AP-2018-05: All to provide minor editorial comments on CCPR Strategy document to JZ within two weeks (17.07.2018)

AP-2018-06: John Lehman to send technical protocol (for optical fibre power responsivity) to Joanne Zwinkels (for distribution to WG-SP). The expression of interest to participate in this pilot comparison/study should be stated before the end of 2018. The wording should be switched from “pilot comparison” to “pilot study”.

AP-2018-07: Maria Luisa Rastello and Yoshi Ohno to coordinate their presentations for the 2018 CGPM meeting.

AP-2018-08: Maria Nadal to ask Andreas Steiger if he is willing to take over the chair position for TG8.

AP-2018-09: Joële Viallon to send template to WG-SP for poster as soon as available.

List of decision points:

DP-2018-01: A task group (TG14) on “Discussion Forum on Improved 1 W Laser Power Responsivity” is formed with the following members: John Lehman (Chair), Peter Blattner, Dong-Hoon Lee, Stefan Kück, Steven van den Berg, Joaquin Campos, Jimmy Dubard.

DP-2018-02: A new ad-hoc group for the poster preparation is formed, with the following members: Maria Nadal (Chair), Nigel Fox, Stefan Kück, Gaël Obein, Yoshi Ohno, Joanne Zwinkels, Joële Viallon.

Working documents:

- Agenda for CCPR WG-SP 2018 BIPM meeting, version 1 (CCPR WG-SP/18-01)
- Minutes of the 11th Meeting of WG-SP at Tokyo, Japan, 14 June 2017, Final version 1.3 (CCPR WG-SP/18-02)
- Draft Appendix 3 of the ninth SI brochure, 5 February 2018 (CCPR WG-SP/18-03)
- Draft Resolution A – 26th meeting of the CGPM (13-16 Nov. 2018) (CCPR WG-SP/18-04)
- Information for users about the proposed revision of the SI (CCPR WG-SP/18-05)
- TG11 Few Photon Radiometry presentation at meeting, Boulder, CO, 4 Aug. 2017 (CCPR WG-SP/18-06)
- TG11 meeting protocol and attendance list, Boulder CO, 4 Aug. 2017 (CCPR WG-SP/18-07)
- TG11 update on schedule for pilot study on detection efficiency of single-photon detectors – Si-SPAD, 7 March 2018 (CCPR WG-SP/18-08)
- Updated version of CCPR Strategy Document for period 2017-2027, version 20-Feb-18 (CCPR WG-SP/18-09)
- JTC-2 Technical Report “Principles Governing Photometry” for CD ballot (CCPR WG-SP/18-10)
- JTC-2 (CIE-CCPR) status report presentation to CCPR WG-SP (CCPR WG-SP/18-11)
- CCPR poster presented to 2014 CGPM (CCPR WG-SP/18-12)
- Proposal of an improved structure for the CMC entries in fibre optics (CCPR WG-SP/18-13)
- TG7 Discussion Forum on Few Photon Metrology – report of TG7 meeting at Boulder, CO on 4 August 2017 (CCPR WG-SP/18-14).