Minutes of CCPR WG-SP TG 16 Meeting
Aug. 21, 2023, 15:00 – 17:00 CEST

Attendance: We had all the TG members present at the meeting! - Yoshi Ohno (NIST, TG Chair), Marek Smid (CMI), Ana Alvarenga (INMETRO), Willian Tavares Sousa (INMETRO), Maria Luisa Rastello (INRIM, CCPR President), Gael Obein (LNE-CNAM), Peter Blattner (METAS, CIE President), Liu Hui (NIM), Teresa Goodman (NPL), Martin Dury (NPL), Hiroshi Shitomi (NMIJ), Minoru Tanabe (NMIJ), Tony Bergen (CIE Division 2, CIE-CCPR liaison, CIE RF05 convener), Lorne Whitehead (CIE Division 1, TC1-98 Chair), Kaida Xiao (CIE Division 1), Maria Nadal (NIST, WG-SP Chair), Joële Viallon (BIPM, CCPR Executive Secretary) ---- Thank you all!

1. **Welcome and members of Task Group (chair)**
   Chair welcomed everyone present. Briefly introduced the list of TG members.

2. **Introduction of participants (everyone)**
   Each attendee introduced him/herself.

3. **Overview of the Task Group (chair)**
   Chair introduced the background of CIE's cone fundamentals work, CIE 170-1, 170-2, their significance, points for discussion, some recent studies on evaluation of cone fundamental (CF) based color matching functions, work starting in CIE toward implementation of CF-based colorimetry (TC 1-98) and discussion for CF-based photometry (RF-05). His PPT file (with edits made during the meeting) is attached.

4. **Status of CIE activities related to cone fundamentals**
   1) Lorne Whitehead introduced the goal and status of CIE TC 1-98 *Roadmap Toward Basing CIE Colorimetry on Cone Fundamentals*. The roadmap proposes five new TCs to follow. The wavelength range of LMS functions needs to be extended to full visible range. LMS-based colorimetric quantities in XYZ concept to be first defined. LMS-based CIELAB like color space to be developed. Also to address cone fundamental diversity. The technical report draft is finished and now in approval stage and expected to be published in 4 - 5 months.

   2) Tony Bergen introduced CIE Research Forum (RF) 05 *Implementation of CIE 2006 Cone Fundamentals in Photometric and Colorimetric Measurements,* which just started. Scope is similar to TG 16 but RF05 is a forum for discussion broadly open to researchers not limited to CIE members. RF05 will collaborate with TG16. He also mentioned a short workshop on the topic of cone fundamentals will take place in CIE Quadrennial Session in Slovenia next month.

   A question raised: Overlap between TG16 and RF05 should be avoided. – This is fully agreed that we should avoid duplication of work, but CIE has a much wider stakeholder group than CCPR and so it's consultation will be more far-reaching (including second-tier laboratories,

equipment manufacturers, lighting manufacturers, universities, etc.). We'll discuss it next time.

5. Plan for CCPR/CIE joint workshop in June 2024

We discussed the plan for the workshop proposed to be held at BIPM in June 2024 in conjunction with CCPR 26th meeting. Chair presented some ideas for the contents (see slide 23 in the attached PPT). The TG discussed these. Some comments made:

- The workshop scope should include colorimetry as it is in the scope of CCPR. – agreed.
- The workshop should be hybrid to accommodate people who cannot travel. – agreed. it will be available at BIPM.
- The workshop should have participation by industry people. But another opinion was that we should be careful inviting industry associations or relevant parties for speaker(s) to hear their official view – it would be too early. We will discuss it next time.
- Invited presentation should include high level objective of photometry – agreed.

TG agreed on the following to propose to WG-SP (Sep. 8 at NPL, hybrid). Following WG-SP approval, the proposal is to be voted at CIE Div.2 and Div. 1 meetings (Sep. 22) for their approval during CIE Quadrennial Session in Ljubljana.

Workshop proposal (to WG-SP, CIE D2, D1)

Title: CCPR/CIE Joint Workshop - 100 Years of V(λ) and Future of Photometry
Date: Wednesday June 5, 2024 (one day) in conjunction with CCPR 26th meeting (CCPR plenary meeting on June 6 -7)
(Note: After the meeting, the TG agreed to change the date to Monday, June 3, 2024, as CIE Division 2 (possibly Division 1 also) plans to meet in Paris in conjunction with this workshop.)
Venue: BIPM, Sèvres, France (also made hybrid)
Description: The workshop will commemorate 100th anniversary of V(λ), overview the history of SI photometric units, spectral luminous efficiency functions, and introduce the cone fundamentals published by CIE (2006, 2015), then will discuss the future of photometry and colorimetry with cone-fundamental-based spectral luminous efficiency functions and color-matching functions.
Expected participants: ~50, up to 100 is possible (capacity of BIPM conference room)
Registration fee: expected to be free.
Organization: The workshop will be co-organized by CCPR and CIE (Division 2 and Division 1) supported by BIPM.
Organizing committee is formed to develop the details of the program.
Members: Ohno (Chair), Obein, Rastello (from CCPR), Bergen, Whitehead, Xiao (from CIE), and Viallon (BIPM).
Logistics (registration, venue information) to be supported by BIPM. CIE also to support in promotion of the workshop.
Outcome of the workshop may be published in Metrologia special issue (to be confirmed)
First Announcement with further details is expected for October 2023.

6. Next steps

- Submit the workshop proposal based on today's meeting (blue text above) to WG-SP and CIE D2, D1 for their approval.
- Short announcement to be made at CIE Quadrennial and NEWRAD, also CIPM in October (draft below).
- Develop 1st Announcement of Workshop by next TG meeting in October.

Next TG meeting: Middle of October. Scheduling poll will be sent. Discuss and finalize the 1st Announcement of Workshop.

Workshop Announcement (for NEWRAD, CIE Quadrennial, CIPM meeting)

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Venue: BIPM, Sèvres, France (hybrid)
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