



International Commission on Illumination
Commission Internationale de l'Eclairage
Internationale Beleuchtungskommission



Canadian National Committee Comité national canadien

CNC/CIE Annual Report 2015

Minutes of 60th Annual Meeting
2015-October-20

and

Canadian Division Members' Reports



International Commission on Illumination
Commission Internationale de l'Éclairage
Internationale Beleuchtungskommission



Canadian National Committee Comité national canadien

MINUTES OF THE 60th ANNUAL CNC/CIE MEETING

2015-October-20

The 60th annual meeting of the Canadian National Committee of the Commission Internationale de l'Éclairage (CNC/CIE) was held on Tuesday, October 20, 2015 at the Impact Centre, University of Toronto, 112 College Street, Toronto, ON.

Note: the following acronyms may be used in this report:

CIE	Commission Internationale de l'Éclairage
CIE-BA	CIE Board of Administration
CIE-CB	CIE Central Bureau
CIE-DD	CIE Division Director
CISSET	NRC Advisory Committee on International Science, Engineering and Technology
CNC/CIE	Canadian National Committee of the CIE
CoP	CNC/CIE Code of Procedure
CIE/USA	US National Committee of the CIE
ICSU	International Council for Science
IESNA	Illuminating Engineering Society of North America
ISO	International Organization for Standardization
IRO	International Relations Office of the NRC
M/AM	Members and Advisory Members of the CNC/CIE
NC	CIE National Committee
NRC	National Research Council of Canada
NRC-IRO	NRC Government and International Relations office
NRC-MSS	NRC Measurement Science and Standards portfolio
NRC-CONST	NRC Construction portfolio
NRCan	Natural Resources Canada
TC	CIE Technical Committee

CNC/CIE Officer and Canadian Division Member reports were submitted electronically and posted on the CNC/CIE website prior to the CNC/CIE annual meeting for the purpose of presentation and discussion at this meeting. Reports were also distributed at the meeting together with the minutes of the previous (59th) annual meeting.

1. Call-to-Order and Approval of Agenda:

The 60th annual meeting of the CNC/CIE was called to order at 10:45 EST on Tuesday, 20 October, 2015 by V. Venkataraman, President.

The agenda is attached as Appendix A. The agenda was approved with one change, the removal of item 7, Reports from Division Members, because Division Reports were presented earlier that morning at a joint meeting of the CNC/CIE and the CIE/USA.

Ten Members were in attendance, which constituted a quorum according to the CoP. The list

of all attendees is attached as Appendix B. Teleconferencing using the Government of Canada Webex system was arranged and hosted by J.A. Veitch, although the connection was lost early in the meeting so the remote attendees were unable to continue.

2. Action Items and Matters Arising from the Minutes of the 59th CNC/CIE Annual Meeting:

The minutes of the 59th Annual Meeting were approved without changes.

Action items from the 59th annual meeting minutes (see Appendix D of the Minutes of the 59th annual meeting) were discussed. Action items AI-1 to AI-5 are complete. It was agreed to discuss AI-6 and AI-7 later in the meeting with the appropriate Committee Reports. V. Venkataramanan will ship the paper copies of past CIE publications to W.S. Neil at the NRC in Ottawa for archiving to complete AI-8. Items AI-9 to AI-14 are complete.

The following Officer Reports are available at the CNC/CIE web site and will be included as appendices in the 2015 Annual Report.

3. President's Report:

V. Venkataramanan presented his report with discussion. This report is attached as Appendix D.

4. Vice-President's Report:

J.A. Veitch presented her report with discussion. This report is attached as Appendix E.

5. Secretary's Report:

W.S. Neil summarized his report (Appendix F). It was noted that both the Letter Ballot quorum and the Canadian Partner Agreement issues would be discussed during the following Committee Reports. Reduced Canadian activity on TC's was mentioned and it was noted by S.M. McFadden and J.A. Veitch that there are now fewer TC's in some of the Divisions. As part of a reach-out for more Canadian involvement it was noted that the Secretary should ensure that a notice is distributed to the full mailing list whenever there is a call for TC expertise by the CB.

ACTION ITEM (AI-1): For the Secretary to ensure calls for expertise by the CB are distributed to the full CNC/CIE mailing list. (Actions items for this meeting are given in Appendix C.)

It was noted by J.A. Veitch that the Secretariat email address might change in the near future due to a new Government of Canada change in how email addresses are named.

6. Treasurer's Report:

S.M. McFadden presented her report with discussion and mentioned that publications should be removed from this report title since the Treasurer is no longer responsible for publications. This report was discussed and is attached as Appendix G. S.M. McFadden thanked sponsors for donations which will help in continued IYL activities.

ACTION ITEM (AI-2): S.M. McFadden to distribute to the Executive any significant update in sponsorships for IYL activities.

7. Division Member Reports:

The Division Member reports are available at the CNC/CIE web site and will be included as appendices in the 2015 Annual Report. Division Members presented oral reports at a joint session with CIE/USA just before this meeting.

8. Subcommittee Reports:

8.1 Website Report:

J.A. Veitch presented her report, with discussion, and noted that hits on the website have recovered to numbers similar to a few years ago. J.A. Veitch noted that S.M. McFadden had done much work on the website this past year.

ACTION ITEM (AI-3): S.M. McFadden to contact the web provider concerning the possibility of having a member-only section that could be used for items such as templates and the archival of documents.

This report is attached as Appendix H.

8.2 Membership Report:

J.A. Veitch presented this report (Appendix I) on behalf of the chair of the committee, M. Mossman, who was not able to attend. She noted that Michele has done a very good job with updating the membership lists and that it was much needed to have someone active in this process. It was also noted that an unsubscribe template should be added to any commercial emails that are distributed.

ACTION ITEM (AI-04): W.S. Neil to ensure that when distributing commercial emails to those that have given consent, that the unsubscribe template be included.

It was agreed that there are 24 Advisory Members whose terms are being renewed. The updated Members/Advisory Members list is attached as Appendix J.

A list of 7 names was presented of Advisory Members who have been inactive and/or contact has been lost. This list included: W.B. Cowan, S.M. Kaye, D. Kline, K. Pero, B.W. Tansley, A. Rosemann and T. Tzempelikos. A motion will be brought forward during agenda item 10 not to renew these terms.

A list of 5 names was presented as candidates to appoint as new Advisory Members. This list included: S. Coyle, J. Hovis, T. Lau, M. Mossman and C. Sampson. A motion will be brought forward during agenda item 10 to appoint them as Advisory Members.

8.3 International Year of Light (IYL) 2015 Report:

V. Venkataramanan reported that the planned IYL activities were achieved, such as the public lecture, outreach to schools and the High School competition. It was noted by J.A. Veitch that organizing the High School competition was a good learning experience and should continue. It was agreed that this should be a biennial competition at the joint meetings. A challenge will be to ensure that High School science teachers are aware of the competition. J.A. Veitch also noted that the IYL events were not registered early enough on the IYL website, but that at least the activities would be archived on that site. V. Venkataramanan mentioned that the "travelling expo", used for IYL school outreach, was used locally in the Toronto area. J. C. Zwinkels mentioned that she received very positive feedback on having the poster session at the Technical session. It was also noted that having a public lecture is beneficial in adding interest in the biennial meetings.

ACTION ITEM (AI-05): V. Venkataramanan to write report on IYL CNC/CIE activities for distribution to the CNC/CIE.

ACTION ITEM (AI-06): CNC/CIE Members supply information regarding IYL activities to V. Venkataramanan in support of the IYL report.

8.4 Code of Procedure Revision:

J.A. Veitch discussed that the NRC-IRO is moving away from Partner Agreements with organizations like the NRC-MSS to host CNC's, and how this will affect the CNC/CIE. The

activities of members of the NRC MSS that support the CNC/CIE will be formally a part of an NRC project-managed activity. This project, which is scheduled to have a first draft by the end of November, will refer to a revised CNC/CIE Code of Procedure (CoP). The revisions in the CoP will be important in allowing the governance of the CNC/CIE to be more autonomous. The start date of this project is to be the start of NRC's new fiscal year (2016-Apr-01). Some possible changes to the CoP were discussed, such as the quorum for letter ballots (e.g. a requirement for having as a minimum, a Division member vote, or failing that, two Executive Members) and the ability to nominate Members without the need for approval outside of the CNC/CIE membership. It was also suggested, with general approval, that Division Members have designates for voting and that the new CoP include the ISO TC 274 mirror committee involvement. S.M. McFadden noted that the CoP is on the CNC/CIE website for viewing and for comments or suggestions.

ACTION ITEM (AI-07): The CoP committee, plus J.A. Veitch and J.C. Zwinkels, complete work on a draft CNC/CIE project for NRC-MSS by the end of November.

9. Ciset Annual Performance Review (APR) of the CNC/CIE:

J.A. Veitch noted that the 2015 APR document was completed, accepted and the dues were sent to the CIE in April. The APR form will most likely be revised during the next year or two.

10. Nominations and Appointments (CNC/CIE):

The current list of CNC/CIE Members and Advisory Members is given in Appendix J.

10.1 CNC/CIE Officers:

MOTION: Moved by W.S. Neil and seconded by A.A. Gaertner to nominate V. Venkataramanan for the position of President, and J.A. Veitch for the position of Vice-President. Passed with all in favour.

10.2 CIE Division Members :

MOTION: Moved by V. Venkataramanan and seconded by J.A. Veitch to reappoint J.C. Zwinkels as the CNC/CIE Member for CIE Division 2. Passed with all in favour.

MOTION: Moved by A.A. Gaertner and seconded by V. Venkataramanan to reappoint J.A. Veitch as the CNC/CIE Member for CIE Division 3. Passed with all in favour.

MOTION: Moved by J.A. Veitch and seconded by S.M. McFadden to nominate A. Laperrière as the CNC/CIE Member for CIE Division 4. Passed with all in favour.

MOTION: Moved by S.M. McFadden and seconded by V. Venkataramanan to reappoint S.S. Qutob as the CNC/CIE Member for CIE Division 6. Passed with all in favour.

ACTION ITEM (AI-8): For the Secretary to contact C. Suvagau to determine his interest in serving as the CNC/CIE Member for CIE Division 5.

10.3 CNC/CIE Members and Advisory Members:

MOTION: Moved by J.A. Veitch and seconded by L.A. Whitehead to nominate J.A. Love as a CNC Member. Passed with all in favour.

MOTION: Moved by J.A. Veitch and seconded by L.A. Whitehead to nominate C. Suvagau as a CNC Member. Passed with all in favour.

ACTION ITEM (AI-9): For the Secretary to contact J. Bastianpillai to determine if he is willing to

continue as a Member (S.M. McFadden has contact information)

L.A. Whitehead expressed his willingness to continue as an ex-officio Member (Canadian resident and Officer of the CIE).

MOTION: Moved by V. Venkataramanan and seconded by J.A. Veitch to nominate M. K. Timmings as a CNC Member. Passed with all in favour.

ACTION ITEM (AI-10): For the Secretary to contact R.A. Smith (Advisory Member) to determine (with assistance from J.A. Veitch) if he is interested in becoming a Member.

MOTION: Moved by J.A. Veitch and seconded by V. Venkataramanan that S. Coyle, J. Hovis, T. Lau, M. Mossman and C. Sampson be nominated as Advisory Members. Passed with all in favour.

MOTION: Moved by W.S. Neil and seconded by S.M. McFadden that W.B. Cowan, S.M. Kaye, D. Kline, K. Pero, B.W. Tansley, A. Rosemann and T. Tzempelikos not have terms renewed as Advisory Members. Passed with all in favour.

MOTION: Moved by A.A. Gaertner and seconded by J.A. Veitch to reappoint the following list of 24 persons as Advisory Members. All have indicated that they would like to continue in this position. Passed with all in favour.

M. Aitkenhead, C. Arsenault, I. Ashdown, C. Blot, J.A. Chrysler, V. Cimino, M. Dumont, M. Gorzkowski, J.W. Harron, K. Ising, B. Kolesnik, D. Lavoie, T. Moggridge, G. Newsham, K. Niall, T. Nilsson, J.B. Roberge, A.R. Robertson, M. Shrestha, A.D. Silbiger, D. Smith, R.A. Smith, N. Stoev, R.W. White

10.4 Nominating Committee

It was discussed that there should be a standing Nominating Committee. This can be taken care of in the new version of the Code of Procedure. It was determined that the present CoP requires that a Nominating Committee be formed at this meeting to prepare nominations to fill the officer positions for which the term of the present officer is expiring at the end of next year.

MOTION: Moved by J.A. Veitch and seconded by V. Venkataramanan that a Nominating Committee be formed with the Secretary, A.A. Gaertner and M. Mossman, if she is willing to serve. If M. Mossman is not willing to serve then J.C. Zwinkels would be willing to serve. Passed with all in favour.

11. Other Business:

11.1 Correspondence:

There was no correspondence that required discussion.

11.2 Date and place for next year's meeting:

ACTION ITEM (AI-11): For the Executive to contact local manufacturers and the local IES (in terms of potential events and demonstrations) in Montreal to determine if this would be a suitable location for the 2016 meeting; if not, it will be held in Ottawa at the NRC; the Executive will then determine a date, and report to the Members by the end of this calendar year.

11.3 Any Other Business:

J.A. Veitch began a discussion concerning the necessity of having a standing Events Committee. It was agreed that a chair should be determined and that they would put a call out for

members. J.A. Veitch indicated her willingness to serve in this capacity.

MOTION: Moved by V. Venkataramanan and seconded by W.S. Neil that an Events Committee be formed with J.A. Veitch as chair, with power to add. Passed with all in favour.

There was no other business brought forward for discussion.

12. Adjournment

V. Venkataramanan expressed his thanks to all attendees for their participation in the meeting and throughout the past year. J.A. Veitch mentioned that V. Venkataramanan should be thanked for all of the work that was done in organizing the IYL events and hosting the joint meeting, whereby a hearty round of applause ensued. The meeting was adjourned at 13:50 hours EST.

William S. Neil

Secretary, Canadian National Committee of the CIE

Email: CNC-CIE-Secretariat@nrc-cnrc.gc.ca

LIST OF APPENDICES

- APPENDIX A: Agenda for the 60th CNC/CIE Annual Meeting
- APPENDIX B: Attendees to the 60th CNC/CIE Annual Meeting
- APPENDIX C: Action Items from the 60th CNC/CIE Annual Meeting
- APPENDIX D: President's Report
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- APPENDIX J: CNC/CIE Members and Advisory Members List

APPENDIX A

CNC/CIE 60th Annual Meeting

2015-October-20

10:30 to 12:30

PROPOSED AGENDA:

- | | |
|---|-------------------|
| 1. Call to Order and Approval of Agenda | V. Venkataramanan |
| 2. Minutes of the 59th Annual CNC/CIE meeting | V. Venkataramanan |
| - Action items | |
| - Matters arising | |
| 3. President's report | V. Venkataramanan |
| 4. Vice-President's report | J.A. Veitch |
| 5. Secretary's report | W.S. Neil |
| 6. Financial and Publications report | S.M. McFadden |
| 7. Reports from Division Members (if necessary. See Note 2) | |
| Division 1: Vision and Colour | S.M. McFadden |
| Division 2: Physical Measurement of Light and Radiation | J.C. Zwinkels |
| Division 3: Interior Environment and Lighting Design | J.A. Veitch |
| Division 4: Lighting and Signaling for Transport | A. Laperrière |
| Division 5: Exterior and Other Lighting Applications | M.K. Timmings |
| Division 6: Photobiology and Photochemistry | S. Qutob |
| Division 8: Image Technology | R. Baribeau |
| 8. CNC/CIE Subcommittee reports: | |
| 8.1 Website | J.A. Veitch |
| 8.2 Membership | M. Mossman |
| 8.3 International Year of Light 2015 Planning | V. Venkataramanan |
| 8.4 Code of Procedure Revision | S.M. McFadden |
| 9. Ciset Annual Performance Review of the CNC/CIE | J.A. Veitch |
| 10. Nominations and Appointments (CNC/CIE) | V. Venkataramanan |
| 10.1 CNC/CIE Officers | |
| 10.2 Canadian CIE Division delegates | |
| 10.3 CNC/CIE Members and Advisory Members | |
| 10.4 Nominating Committee | |
| 11. Other Business | V. Venkataramanan |
| 12.1 Correspondence | |
| 12.2 Date and Place for next year's meeting | |
| 12.3 Any other business | |
| 12. Adjournment | V. Venkataramanan |

Note 1: The SMC-ISO-TC 274 3rd Annual Meeting will take place at the same location at 14:00

Note 2: The Division Reports are scheduled to be presented at the joint CNC/CIE and CIE-USA session earlier in the morning at 08:30.

APPENDIX B

CNC/CIE 60th Annual Meeting

Attendees

Venkat Venkataramanan	President, CNC/CIE	U of Toronto
Jennifer Veitch	Vice-President, Division 3 Rep.	NRC-Construction
William Neil	Secretary, CNC/CIE	NRC-MSS
Sharon McFadden	Treasurer, Division 1 Rep.	
Joanne Zwinkels	Division 2 Representative	NRC-MSS
André Laperrière	Division 4 Representative	Hydro Quebec
Martyn Timmings	Division 5 Representative	Studio Four Technical Services
Arnold Gaertner	ex-officio Member	NRC-MSS
Lorne Whitehead	Member, CNC/CIE	U of British Columbia
Sami Qutob*	Division 6 Representative	Health Canada
Barbara Kolesnik*	Advisory Member, CNC/CIE	AECOM
Jeffery Hovis	Expert Network, CNC/CIE	University of Waterloo
Shirley Coyle	Expert Network, CNC/CIE	
Dongpeng Kang		GVA Lighting
Yong Liang Zheng		Durham Region Public Works

* **attended via teleconference** (connection was lost partway through meeting)

Regrets

Robert White, Adam Chaffey, Mankajee Shrestha, Ralph Smith, Tim Moggridge, Andrew Silbiger

APPENDIX C

Action Items from the 60th Annual Meeting of the CNC/CIE

Action Item	Responsible	Action	Status
AI-1	Secretary (W.S. Neil)	ensure calls for expertise by the CB are distributed to the full CNC/CIE mailing	open
AI-2	S.M. McFadden	distribute to the Executive any significant update in sponsorships for IYL activities	open
AI-3	S.M. McFadden	contact the web provider concerning the possibility of having a member-only section on website	open
AI-4	W.S. Neil	Ensure unsubscribe template is included in any e-mailings that have commercial content	open
AI-5	V. Venkataramanan	write report on IYL CNC/CIE activities for distribution to the CNC/CIE	open
AI-6	Members	supply information regarding IYL activities to Venkat for report	open
AI-7	CoP committee: S.M. McFadden, J. C. Zwinkels, J.A. Veitch; NRC-MSS CNC/CIE project committee: J.A. Veitch, J.C. Zwinkels, A.A. Gaertner, W.S. Neil	complete work on revising the CoP and preparing a draft CNC/CIE project for NRC-MSS by the end of November	open
AI-8	W.S. Neil	contact C. Suvagau to determine his interest in being the CNC/CIE Division 5 Member	open
AI-9	W.S. Neil	contact J. Bastianpillai to determine if he is willing to continue as a Member	open
AI-10	W.S. Neil	contact R.A. Smith (Advisory Member) to determine if he is interested in becoming a Member	open
AI-11	Executive	Determine location and date for the next annual meeting by end of calendar year and report back to membership	open

APPENDIX D

CNC/CIE President's Report
October 2015

Venkat Venkataramanan
vvenkat@imc.utoronto.ca

I am pleased to present this brief report on my activities this year as CNC President.

I attended the 59th AGM of CNC/CIE at National Research Council, Ottawa on December 1st 2014.

I attended the CIE General Assembly Meeting on 28th June 2015 and the 28th Session of CIE in the following week at Manchester, UK. I attended various WebEX meetings of the General Assembly throughout the last year, representing Canada.

I have been active in TC-2 63 - Optical Measurements of High Power LEDs.

I liaised with the Canadian National Node for the International Year of Light 2015.

Chaired the CNC subcommittee on International Year of Light activities. Coordinated with local Illumination Engineers Society (IES) on various activities. Assembled a kit on History of Light/Quality of Light that is used locally in lecture-demonstrations in various schools.

Hosting the 10th Biennial Joint CNC/CIE and CIE/USA Technical Conference and Business Meeting 18 – 20 October 2015

I have been continuing my activities as a lighting researcher and educator at the University of Toronto:

- We continue to strengthen the Smart Sustainable Lighting Network (SSLNet) with increasing participation from the industry and academia.
- In partnership with OLED Research Group at Philips and OTI Lumionics, Toronto my laboratory is continuing to develop a photometric characterization facility for lighting-class OLED devices.
- In partnership with Zhejiang University (China) and Sensing, Hangzhou, China developing new photometric and spectroscopic instruments.

I thank the collegial National Advisory Committee for smooth and efficient conduct of affairs and for their continued efforts in popularizing lighting and advancement of lighting research.

APPENDIX E

CNC/CIE Vice-President's Report October 2015

Jennifer A. Veitch, Ph.D.
jennifer.veitch@nrc-cnrc.gc.ca

In my capacity as Vice-President of the CNC, this year I undertook five tasks.

1. I led the preparation of the annual performance report (APR) to the NRC Government and International Relations Office (NRC-GIR). This was submitted on time. Thank you to everyone who contributed.

We were successful in that our CIE dues were paid for 2015. I learned in September that this year's APRs were not reviewed at all, because there was a staffing change just at the critical time.

2. I served as Chair of the Canadian mirror committee to ISO-TC 274. Details of this committee's work will be discussed at the meeting of SMC-ISO-TC 274 this afternoon. Highlights of the year are:

- Thanks to financial support from the University of Toronto Impact Centre and the Standards Council of Canada, we were able to send a Canadian delegate (Mr. Toby Lau) to the plenary meeting of TC 274 and the meeting of its WG 1 in Beijing in April 2015.
- Mrs. McFadden and Mr. Lau both serve on the ISO TC 274 Chair Advisory Group, which assists in charting the direction for the committee.
- We cast all our ballots on time.
- The Canadian nominee, Mr. Conor Sampson, was selected to be one of two ISO TC 274 liaison officers to ISO TC 205/WG7 Indoor visual environment.
- Mr. Lau and Mr. Sampson both attended the joint meetings of ISO TC 163 and ISO TC 205 in Victoria, BC, in September. Mr. Lau was an alternate liaison from ISO TC 274 to ISO TC 163; Mr. Sampson fulfilled his ongoing role with ISO TC 205.

3. The question of the place of the CNC/CIE in the new structure of NRC has been resolved. As we had argued, the CNC/CIE will continue to be an activity within NRC Measurement Science and Standards (NRC-MSS). It sits in the program called Scientific Support for the National Measurement System. Over the next few months, a new partner agreement will be established between NRC-MSS and NRC-GIR. This will enable us to revise the Code of Procedure before the 2016 AGM.

4. I participated in the planning for the International Year of Light 2015, and in particular the search for sponsorships, the Public Lecture and the High School Science Competition.

5. I assisted as needed to support the President and Secretary in the ongoing work of CNC business.

APPENDIX F

CNC-CIE SECRETARY'S REPORT TO THE 60th ANNUAL MEETING

20Oct2015

W.S. Neil

The following acronyms may be used in this report:

CEN:	Comité Européen de Normalisation
CIE-CB:	CIE Central Bureau in Vienna, Austria
CIE-BA:	CIE Board of Administration
CIE-USA:	US National Committee of the CIE
CISSET:	NRC advisory Committee on International Science, Engineering and Technology
CNC/CIE:	Canadian National Committee of CIE
CoP:	CNC/CIE Code of Procedure
GA:	General Assembly
ISO:	International Organization for Standardization
MSS:	NRC Measurement Science and Standards portfolio
NC:	National Committee
NCLB:	National Committee Letter Ballot
NRC:	National Research Council of Canada
NRC-IRO:	NRC International Relations Office
NRC-IRC:	NRC Institute for Research in Construction
NRCan:	Natural Resources Canada

This report covers the period from 22Nov2014 to 12Oct2015.

CIE MATTERS:

1. Electronic Mailings:

CIE notifications, announcements and Press Releases were distributed by the CIE-CB to the NC's via email. These documents are available on the CIE website (www.cie.co.at) using Collaboration Tools. General interest documents with no commercial content were downloaded and redistributed to the CNC/CIE-ALL contacts list, while letter ballots were distributed to Members and Advisory Members.

2. NCLBs:

National Committee Letter Ballots were distributed to members for voting. A resulting ballot representing Canada was returned to the CIE-CB for 2 voting NCLB's. Letter ballots for 2015 were:
NCLB1405: Voting on CIE budget for 2015; CNC quorum approval; CIE Vote Result: approved
NCLB1501: Voting on CIE FDIS 025/E:2015; 6 CNC responses(no quorum); CIE Vote Result: approved
NCLB1502: Commenting on CIE DIS 024/E:2015; 2 CNC responses stating no comments
NCLB1503: Voting on CIE FDIS 024/E:2015; No CNC response; CIE Vote Result: not posted

3. General Assembly Meeting;

Delegate for this meeting in Manchester, GB, was CNC/CIE President Venkat Venkataramanan.

CNC/CIE MATTERS:

1. Partner Agreement with NRC

The Canadian Partner Agreement between NRC and INMS in support of Canada's affiliation with the CIE will expire 31Mar2016 as it was a 5 year agreement commencing 01Apr2011. Discussions are taking place to change this agreement into a project oriented activity when the current

agreement expires. As a result of the restructuring of NRC, references to INMS in the current agreement are no longer valid. This also has, at least in part, caused letters of appointment of CNC/CIE officers not being made following nomination to positions. Also, sections of the CNC/CIE Code of Procedure (CoP) are out-of-date which refer to a Director General of INMS. There is a CNC/CIE CoP sub-committee that is mandated to review and suggest modifications that will be required to this document as a result of the changes mentioned above.

2. CNC-CIE Secretary:

In communication with the Secretary, please use the NRC email address CNC-CIE-Secretariat@nrc-cnrc.gc.ca. Both the Secretary and Vice-President have access to this mailbox which is monitored at a minimum, every few days.

3. CNC/CIE 2015 Annual Meeting:

The 10th Biennial Joint CNC/CIE and CIE-USA Technical Conference and Business Meeting will take place 18 - 20 October 2015, at the Impact Centre, University of Toronto, 112 College St., Suite 411 in Toronto, Ontario. This will include the 60th Annual business Meeting of the CNC/CIE.

4. Annual Performance Review of the CNC/CIE:

The Annual Performance Review (APR) questionnaire from the NRC International Relations Office was submitted for 2014 on January 15, 2015. Notice of a successful review by the NRC Advisory Committee on International Science, Engineering and Technology (CISSET) was received from NRC International Relations on March 24, 2015. This successful review ensured that the CIE affiliation dues would be paid on behalf of the CNC-CIE for the 2015 calendar year by a grant from the NRC. The CIE-CB acknowledged receipt of the dues on April 7, 2015.

5. Executive Committee Actions:

- New CNC/CIE letterhead
- CNC/CIE bank account moved

6. Requests for Funding:

- a) CNC/CIE IYL committee request (by ballot) for a \$3000 funding commitment for the High School Science Competition. (Motion by J.A. Veitch, seconded by V. Venkataramanan, passed)
- b) CNC/CIE IYL committee request (by ballot) for a \$5000 funding commitment to help defray costs of planned IYL activities. (Motion by J.A. Veitch, seconded by V. Venkataramanan, passed)

7. CNC/CIE website:

The website operates at the web address of www.cnc-cie.ca. If anyone has suggestions for corrections, updates, or additions, please contact the Secretary or J.A. Veitch. A report on the website is included in the agenda of this meeting.

8. Mailing Lists:

At present we maintain 3 mailing lists: Members, Advisory Members, and Expert Network. In general, the Expert Network receives both CIE and CNC/CIE material such as press releases of CIE publications, the CIE Newsletter, and notices such as that of international conferences. Members and Advisory Members receive, in addition to this material, other CNC information such as letter ballots, and the Minutes of the annual meeting and related information. A new mailing list has been developed which includes only those that have given consent to mailings with commercial content. Much effort by M. Mossman (Membership Subcommittee) has been made this year to update the Advisory and Expert Network list information.

9. Membership:

A list of CNC/CIE Members and Advisory Members is available from the Secretary and is included in the Annual Report. A report from the Membership Committee is included in the agenda of this meeting.

9.1. Officers:

The positions of President and Vice-President need to be filled as terms expire this year.

9.2. Members:

Eight other Member position terms are expiring including delegates for Divisions 2,3,4,5 and 6.

9.3. Advisory Members:

Update from the Membership Committee report.

9.4. Expert Network:

Update from the Membership Committee report.

APPENDIX G

CNC/CIE Treasurer's Report to the CNC/CIE 60th Annual Meeting

20 October 2015

Toronto, Ontario

At the last annual meeting, Frank Lin tendered his resignation as Treasurer of the CNC/CIE and I agreed to assume that position for the remainder of his term. At the same time, to simplify the handling of financial transactions, it was decided to move the account and update the signing authority. Hence, the CNC/CIE account with the Bank of Nova Scotia in Waterloo was closed and a new account opened at the TD Bank Branch near NRC. The signatories are the CNC/CIE President, Secretary, and Treasurer.

The financial statement for the fiscal year October 31st 2014 to September 30th 2015 is presented below. Please note the following:

- service charges of \$5.95 per month, with are previous account, have now been reduced to \$1.95 (or nil if we keep a minimum balance),
- income from the CIE for publications was \$518.79 for the period June 2014 to June 2015,
- to date, we have received \$2500.00 in s sponsorships to support our IYL activities,
- CNC/CIE has approved up to \$8000.00 to cover expenses related to IYL activities.

Financial Report 31 October 2014 – 30 September 2015

Balance (October 31st 2014) \$25764.28

Income:

Payment for publication sales	\$ 518.79
Sponsorship of IYL Activities	\$2500.00

Total Income \$3018.79

Expenses:

Bank Charges	\$ 41.60
F. Lin for payment to CSA group in 2014	\$ 500.00
Cheques	\$ 32.72

Total Expenses \$ 574.32

Net Income (Loss) \$2444.47

Balance (September 30th 2015) \$28208.75

Respectfully submitted

Sharon McFadden
Treasurer, CNC/CIE
sharon_mcfadden@rogers.com

APPENDIX H

CNC/CIE Web Site Report
October 2015

Jennifer A. Veitch, Ph.D.
jennifer.veitch@nrc-cnrc.gc.ca

Domain

We are and will remain www.cnc-cie.ca.

Usage

Usage this year is back to the level seen in 2008 and 2009; it seems that 2014 was an outlier. Again there was an outlier month, August. Excluding that month (which had 10x as many unique visitors as any other month), the 9-month average is 155 unique visitors per month and 368 visits.

Top countries of origin, in order: Russia, Ukraine, Brazil, Argentina, **Canada, USA.**

Content

Sharon McFadden has taken on the job of content co-ordinator, for which we owe her a debt of thanks.

We added pages related to the International Year of Light and the creation of an Expert Speaker database.

History of Lighting in Canada

We had hoped to find a student to work on this project for the International Year of Light in 2015, but restricted our search to U of T, which had a program that would carry some of the costs. We had no applicants, so this project remains uncompleted.

Maintenance

The cost for the domain registration, site hosting, and maintenance remains low, at \$95 per year. I recommend we keep our current arrangement, which seems to be working well.

APPENDIX I

CNC/CIE Membership Subcommittee – Chair’s Report October 2015

Prepared by: Michele Mossman

During 2015, the following activities were carried out by the Membership Subcommittee:

- We have 115 members with various levels of participation in the CNC/CIE. Twenty-four are Advisory members currently, and five members have agreed to be nominated for Advisory membership at today’s meeting.
- A detailed membership database has been put together, in the form of an Excel spreadsheet. This database is circulated to subcommittee members whenever entries are updated.
- Members were contacted by email to confirm that they wished to remain member and their contact information was confirmed.
- Members who hadn’t yet indicated their consent to receive electronic mailings (CEM) were contacted again, and the membership database has been updated to indicate those who have given this consent. (Electronic mailing refers to notifications of events and publications, including those received from the Central Bureau that are forwarded and promotions of CIE publications. All members, regardless of their CEM status, receive messages seeking experts to participate in CIE work and announcements of new technical activities.
- We have identified a number of members who are no longer active in CIE Technical Committees, and it would be appropriate for these members to no longer be listed as Advisory Members but for them to maintain membership in the CNC/CIE Expert Network. These members are:
 - William Cowan
 - Stuart Kaye
 - Donald Kline
 - Karen Pero
 - Brian Tansley
 - Thanos Tzempelikos
- Five members have agreed to be nominated as Advisory Members:
 - Toby Lau
 - Conor Sampson
 - Jeffrey Hovis
 - Shirley Coyle
 - Michele Mossman
- Invitations to participate in CNC/CIE activities have been sent to approximately 35 members of the lighting community in Canada. The Subcommittee will follow up with additional invitations during the coming year.

APPENDIX J

CNC/CIE MEMBERS				
<u>CNC/CIE</u>			<u>TERM (expiry)</u>	<u>CIE</u>
President	V. Venkataramanan	Ontario	2019-12-31*	
Vice President	J.A. Veitch	Ontario	2019-12-31*	Division 3
Secretary	W.S. Neil	Ontario	2018-12-31*	
Treasurer	S.M. McFadden	Ontario	2016-12-31*	Division 1
	R. Baribeau	Ontario	2017-12-31*	Division 8
	J. Bastianpillai	Ontario	2019-12-31*	
ex officio, MSS delegate	A.A. Gaertner	Ontario		
	André Laperrière	Québec	2019-12-31*	Division 4
	K.F. Lin	Ontario	2016-12-31*	
	J.A. Love	Alberta	2019-12-31*	
	S.S. Qutob	Ontario	2019-12-31*	Division 6
	C. Suvagau	British Columbia	2019-12-31*	Division 5
	M.K. Timmings	Ontario	2019-12-31*	
ex-officio, CIE VP	L.A. Whitehead	British Columbia		
	J.C. Zwinkels	Ontario	2019-12-31*	Division 2

* signifies Members awaiting official term appointment from NRC-MSS

CNC/CIE ADVISORY MEMBERS			
Martin Aitkenhead	Ontario	Tim Moggridge	Ontario
Chantal Arsenault	Ontario	Michele Mossman	British Columbia
Ian Ashdown	British Columbia	Guy Newsham	Ontario
Chrisnel Blot	Québec	Keith Niall	Ontario
J. Allyson Chrysler	Ontario	Thomy Nilsson	P.E.I.
Vince Cimino	Ontario	Jacques B.Roberge	Québec
Shirley Coyle	Ontario	Alan R.Robertson	Ontario
Marie Dumont	Québec	Mankajee Shrestha	British Columbia
Marcin Gorzkowski	Ontario	Conor Sampson	Québec
John W. Harron	Ontario	Andrew D. Silbiger	Ontario
Jeffery Hovis	Ontario	Dyoni Smith	Ontario
Kurt Ising	British Columbia	Ralph A. Smith	New Brunswick
Barbara Kolesnik	Ontario	Nikolay Stoev	Ontario
Toby Lau	British Columbia	Robert W.White	Québec
Denis Lavoie	Nova Scotia		



International Commission on Illumination
Commission Internationale de l'Eclairage
Internationale Beleuchtungskommission



Canadian National Committee Comité national canadien

Division 1: Vision and Colour

Report to CNC/CIE 60th Annual Meeting
Toronto, Ontario

Sharon McFadden
Email: sharon_mcfadden@rogers.com

1 Introduction

The annual meeting of Division 1 (D1) was held 30 June to 3 July 2015 in Manchester, U.K. in conjunction with the 28th Session of the CIE. The meeting was attended by 4 officers, 23 country representatives (including 4 proxies), 16 Technical Committee (TC) Chairs, and several guests. Venkat Venkataraman represented Canada. Fifteen TCs met in conjunction with the meeting.

2 Highlights

2.1 New Technical Committees and Reporterships

One new TC was proposed during the meeting:

TC1-XX The Validity of the CIE Whiteness and Tint Equations (R. Hirschler, HU)

Scope: Based on published and new experimental work, the TC shall seek to recommend modifications to the existing CIE Whiteness and Tint Equations to extend their application to illuminants other than D65. Furthermore the TC shall review the restrictions imposed on the validity of the equations to samples that are measured on the same instrument at nearly the same time, and review the colorimetric limits hitherto set. If enough experimental data justify it, the TC may recommend modifications to the current CIE Equations for Whiteness and Tint.

Initial Members: Ludovic Coppel SE, Ichiro Katayama JP, Ronnier Luo CN, Danielle Oliveira BR, Danny Rich US, Joanne Zwinkels CA

Four new Reporterships were approved either during the meeting or by email ballot after the meeting:

R1-63 Real Colour Gamut (C. Li)

Terms of Reference: To investigate the derivation of a gamut representative of real (non-fluorescent) surface colours and defined by associated spectral reflectance data.

R1-64 Real Colour Gamut (C. Li)

Terms of Reference: To investigate the derivation of a gamut representative of real (non-fluorescent) surface colours and defined by associated spectral reflectance data.

R1-65 Categorical colour identification (Taiichiro Ishida, JP)

Terms of Reference: To write a report describing a colour categorization map for photopic and mesopic illumination levels.

R1-66 The effect of dynamic and stereo visual images on human health (Hiroyasu Ujike, JP)

Terms of Reference: To write a report that describes the physiological and psychophysical effects of dynamic and stereo visual images in terms of photosensitive seizures, visually induced motion sickness and eyestrain.

2.2 Division publications

There were no new publications during this period.

2.3 Future meetings

The 2016 meeting will be held during the Expert Symposium on Appearance, 29 August – 2 September 2016, Prague, Czech Republic

3 Canadian participation in Division 1 activities

Activity	Title	Canadian Members
TC1-55	Uniform Colour Space for Industrial Colour Difference Evaluation	A. Robertson
TC1-83	Visual Aspects of Time-Modulated Lighting Systems	L. Whitehead
TC1-85	Update CIE Publication 15:2004 Colorimetry	A. Robertson
TC1-90	Colour Fidelity Index	L. Whitehead
TC1-xx	The Validity of the CIE Whiteness and Tint Equation	J. Zwinkels
JTC8	Terminology in Light and Lighting	S. McFadden (for D1)
Liaison	L1-03 ISO/TC6/WG3 Paper, Board and Pulp – Optical Properties	J. Zwinkels

4 Highlights of Division work programme

4.1 Overview of the status of TCs and Reporterships

The following summaries of activities in the various TCs of D1 are based on the minutes from the 2015 D1 meeting. Additional information on some of the TCs can be found in the minutes as well as the Activity Report for 2015. These are available in PDF format on the D1 website at <http://div1.cie.co.at/>. The activity report includes the terms of reference and membership for all TCs and Reporterships.

4.1.1 Progress in Vision Section (M. Ayama, Associate Director (AD))

TC1-36 Fundamental Chromaticity Diagram with Physiologically Significant Axes (F. Viénot) Part II of the Technical Report (TR) is now with the Central Bureau for production and publication.

TC1-67 The Effects of Dynamic and Stereo Visual Images on Human Health (H. Ujike) Due to non-compliance with the CIE Code of Procedure, it was decided to close this TC. It has been replaced by a Reportership – R1-66.

TC1-82 The Calculation of Colour Matching Functions as a Function of Age and Field Size (J. H. Wold) The TC met in Manchester. The TCC reported on the status of its work programme which is proceeding on schedule. Due to non-compliance with the CIE Code of Procedure, it was suggested to close this TC. Thus, the future of the TC is under discussion. Details on the progress of the work programme are provided in the minutes.

TC1-83 Visual Aspects of Time-Modulated Lighting Systems (D. Sekulovski) A TC meeting was held in Manchester. The TC has decided to produce a Technical Note (TN) at this point in their work because:

- Not ready to answer all terms of reference
- There is a need for guidance which is useful even if all the problems are not solved
- There is a need for increased awareness and a larger body of contributing people

The TN will address:

- Definitions
- Literature overview
- General frameworks for the quantification of all temporal light artifacts. One in the frequency domain for periodic time modulations. Second in the time domain for non periodic time modulations.
- Example implementations of the frameworks
 - For the stroboscopic effect – SVM
 - For flicker – IEC Pst, recommend modifications

TC1-84 Definition of the Visual Field for Conspicuity (N. Itoh) A TC meeting was held in Manchester. A first draft of the TR was sent to members in June.

TC1-88 Scene Brightness Estimation (Y. Nakamura) A TC meeting was held in Manchester.

TC1-89 Enhancement of Images for Colour Defective Observers (Po-Chieh Hung) This TC continues to collect papers and to edit and refine the draft TR. An outline of the proposed TR is available in the minutes.

TC1-93 Calculation of Self-luminous Neutral Scale (Robert Carter) The TC met in Manchester. A report on the work of the three sub-committees is available in the minutes. The TC has three sub-tasks:

- Recommend a formula or computational method.
- Show that the formula works for self-luminous color difference calculation.
- Clarify (and perhaps standardize) the meaning of “neutral” in the self-luminous context of this TC.

TC1-94 Visually Meaningful Spectral Luminous Efficiency Functions (Ferenc Szabó) Members are being recruited and the proposed TC held a meeting in Manchester.

JTC-1 Implementation of CIE 191 Mesopic Photometry in Outdoor Lighting (S. Mucklejohn GB) This joint TC now has a new chair. It has two main tasks:

To investigate adaptation and viewing conditions and define visual adaptation fields in outdoor lighting.

Chair Tatsukiyo Uchida JP

To define lighting applications where mesopic photometry could be used. To provide guidelines for implementing mesopic photometry in outdoor lighting. Chair Stuart Mucklejohn GB

JTC-7 Discomfort Caused by Glare from Luminaires with a Non-Uniform Source Illuminance:

Co-chairmen: Naoya Hara JP (D3), Miyoshi Ayama JP (D1)

Terms of Reference:

1. To review the literature on glare from non-uniform light sources to identify the parameters that influence the discomfort prediction (UGR) and define limits to the applicability of the UGR formula.

2. To propose a correction to the UGR formula that takes into account the non-uniformity of glare sources.

This TC held its first meeting in Manchester.

4.1.2 Progress in Colour Section (E. Carter, Associate Director)

TC1-55 Uniform Colour Space for Industrial Colour Difference Evaluation (M. Melgosa) A TR has been approved by the TC members and will be submitted to the Central Bureau immediately following the CIE Session. Its title is “Recommended method for evaluating the performance of colour-difference formulae.” A summary of the report is provided in the minutes.

TC1-61 Categorical Colour Identification (T. Ishida) Due to non-compliance with the CIE Code of Procedure, it was decided to close this TC. It has been replaced by a Reportership – R1-65.

TC1-63 Validity of the Range of CIEDE2000 (K. Richter) The TC met in Manchester. The TC chairman requested that the Terms of Reference be changed to read:

To investigate the application of the CIEDE2000 equation at threshold, and to for CIELAB color differences greater than 5 units.

This change was approved unanimously. A fourth draft of the TR was discussed in Manchester. It is hoped that a final draft will be ready for submission to D1 by November 2015.

TC 1-64 Terminology for Vision, Colour and Appearance (S. McFadden) The TN produced by the TC was approved by TC members and has been forwarded to the CB. The work of this TC will now be covered by a new JTC: Terminology in Light and Lighting.

TC1-70 Metameric Samples for Indoor Daylight Evaluation (B. Kranicz) The Division has lost contact with the TC chairman and this TC was therefore closed in Manchester.

TC1-71 Tristimulus Integration (C. Li) A summary of the work plan and the progress of the TC was

presented at the D1 meeting. Due to non-compliance with the CIE Code of Procedure, it was decided to close this TC. A Reportership (R1-63) was unanimously approved during the Division 1 meeting with Changjun Li as the reporter to replace the TC.

TC1-73 Real Colour Gamut (C. Li) A summary of the work plan and the progress of the TC was presented at the D1 meeting. Due to non-compliance with the CIE Code of Procedure, it was decided to close this TC. A Reportership (R1-64) was unanimously approved during the Division 1 meeting with Changjun Li as the reporter to replace the TC.

TC1-75 A Comprehensive Model of Colour Appearance (R. Luo) A summary of the work plan, progress and recent publications is available in the minutes. Due to non-compliance with the CIE Code of Procedure, it was suggested to close this TC. Thus, the future of this TC is under discussion.

TC1-76 Unique Hue Data (S. Wuerger) The Division appears to have lost contact with the TC Chairman. Every effort will be made to re-establish contact and so that the completed report can be published.

TC1-77 Improvement of the CIE Whiteness and Tint Equations (R. Hirschler) The TC met in Manchester. Summaries of recent research on this topic were presented and discussed at the TC meeting. A list of these studies is presented in the minutes. Some of the work was presented at the CIE Session. Due to non-compliance with the CIE Code of Procedure, it was necessary to close this TC. However, as there are already valuable results from previous research, and new, on-going research, it was proposed to form a new TC.

TC 1-81 Validity of Formulae for Predicting Small Colour Differences (K. Richter) The TC met in Manchester. Agreement on the content of the TR has been reached. A short summary of draft 7 of the TR is available in the minutes. It is expected that the committee members will agree to a final draft so that the report can be sent for D1 vote during August 2015.

TC1-85 Update CIE Publication 15:2004 Colorimetry (J. Schanda) In early 2015, the Chairman asked M. Pointer for help with the editing of this report; it was then at Draft 9. Following the death of the TC chairman, Draft 10 was produced in May 2015 from extensive comments received from TC members. Further changes are necessary, and in addition, some decisions need to be made, for example about the inclusion of typical LED spectral power distributions, and also on the status of the many comments in the text. It was felt that a new TC Chairman should be found who was a member of the TC so that the decisions could be made with the benefit of the knowledge of previous discussions within the TC. Ellen Carter has agreed to take on this role. She was approved by email ballot following the meeting. Draft 11 should be ready by summer 2015 and it is to be hoped that this version will receive TC approval.

TC1-86 Models of Colour Emotion and Harmony (Li-Chen Ou) A TC meeting was held in Manchester. Three new models of color emotion were developed based on data collected from 10 countries; a new model of color harmony was developed based on data collected from 7 countries. A detailed report on this work is available in the minutes.

TC1-90 Colour Fidelity Index (H. Yaguchi) This TC has held several meetings since its inception. Currently there is a wide range of research being conducted at 12 different locations. In addition, test guidelines for conducting and assessing research have been produced. The new data is being analysed as it becomes available with the goal of producing a new Colour Fidelity Index (CFI).

TC1-91 New Methods for Evaluating the Colour Quality of White-Light Sources (Y. Lin) A TC meeting was held in Manchester. After 4 meetings and email discussion, a draft technical report has been written and updated several times. It include 5 indexes: CQS, FCI, MCRI, HRI and PS. Many members have already contributed to the current draft report (V3.2) discussed in the 5th meeting in Manchester. The technical report is expected to be submitted for voting later this year.

TC1-92 Skin Colour Database (K. Xiao) Using the database collected at the University of Leeds, uncertainty of skin measurements were evaluated using four different measures. Future work will focus on developing a protocol for skin measurement, combining the available databases on skin measurement, conducting new measurements, creating a new database, and preparing a TR.

R1-42 Extensions of CIECAM02 (C. Li) The future of this Reportership is uncertain because the Technical Committee that it liaises with, TC8-11, has been given 3 months to find a new chairman because the

current chairman has already served for 8 years and thus the TC is non-compliant under the CIE Code of Procedure.

R1-52 Spectral Data Interpolation (D. Rich) After reviewing the existing work on this topic (see minutes for a summary), the reporter concluded that the problem of data interpolation, while it could be resolved for some data could not be resolved for all data. The example he quoted was to interpolate 5 nm fluorescent lamp spectral power data to 1 nm data. While some methods worked some of the time there did not appear to be a method that was universally applicable. Thus he felt that the best way forward was to close the Reportership, at least for the time being. The Reportership was closed following an email ballot conducted in August.

R1-53 Gloss Perception and Measurement (F. Leloup) The Reporter provided an update on recent publications in this field (see minutes).

R1-58 Liaison with ISO TC130 Graphic Technology (P. Green) Progress in ISO TC130 during the year:

- Remaining issues identified in 2014 resolved
- CIEDE2000 adopted for graphic arts tolerances, new tolerance values being developed
- Final report draft scheduled completion July 2015
- ISO TC130 is currently finalizing a revision of ISO 13655 Graphic technology.

R1-60 Future Colour Difference Evaluation (Guihua Cui CN)

There were about 23 papers published/presented relating to colour difference evaluation or uniform colour spaces, in English, in 2014-2015. In these, three new Uniform Colour Spaces and two new Colour-Difference Formulae were proposed and four new datasets were reported.

R1-61 Source Whiteness Metric (A. David US)

Based on reviews to date:

- Many artificial light sources (including most white LEDs) fail to excite Fluorescent Whitening Agents (FWAs)
- Effect of FWAs on perception of white objects not captured by existing color metrics
- Mission of IES whiteness group is to establish a metric to quantify the ability of a light source to excite FWAs
- Approach: Whiteness rendering is a color fidelity question, applied to FWA-containing white objects
- IES group is working on technical aspects of this metric
 - What color space is appropriate to compute color shifts? (XYZ, u'v', CIELAB, CIECAM...)
 - Which reference illuminants? (daylight / indoor daylight?)
 - What white test samples?
 - collecting a library of white objects

R1-62 Typical LED Spectra (S. Jost FR)

A comprehensive report is appended to the D1 minutes. This report is a presentation given as part of a Workshop held at the 2015 CIE Session.

4.2 Dissolution of and changes to Technical Committees and Reporterships

4.2.1 Technical Committees and Reporterships closed

Several TCs were closed for non compliance with the CIE Code of Procedure. These include:

TC1-61 Categorical Colour Identification (Taiichiro Ishida, JP)

TC1-64 Terminology for Vision, Colour and Appearance (S. McFadden)

TC1-67 The effect of dynamic and stereo visual images on human health (Hiroyasu Ujike, JP)

TC1-70 Metameric Samples for Indoor Daylight Evaluation (B. Kranicz)

TC1-71 Tristimulus Integration (C. Li)

TC1-73 Real Colour Gamut (C. Li)

R1-52 Spectral Data Interpolation (D. Rich)

4.2.2 Changes

TC1-85 Update CIE Publication 15:2004 Colorimetry: E. Carter has replaced J. Schanda as Chair.

5 Other Division News

5.1 New Division 1 Officers

The following people have been appointed as Division Officers for the next four years:

Director: Youngshin Kwak (KR)

Associate Director (Vision): Nana Itoh (JP)

Associate Director (Colour): Ellen Carter (US)

Secretary: Lichen Ou (TW)

Editor: Peter Hanselae (BE)



International Commission on Illumination
Commission Internationale de l'Eclairage
Internationale Beleuchtungskommission



Canadian National Committee Comité national canadien

Division 2: Physical Measurement of Light and Radiation

Report to the 2015 10th Joint Biennial Meeting of the CNC/CIE and USA/CIE

Toronto, ON, 20 October 2015

Joanne C. Zwinkels

E-mail: Joanne.zwinkels@nrc-cnrc.gc.ca

1 Introduction

The most recent CIE Division 2 (D2) General and TC meetings were held in Manchester, UK, 30 June - 4 July 2015 in conjunction with the CIE Quadrennial meeting. This meeting was split in two parts: 1st part on June 30th (afternoon) and 2nd part on July 4th (morning).

D2 has 37 country members. At both parts of the D2 meeting, there were 23 official country members or proxies present. I attended this meeting as country member for Canada and as one of the three D2 Associate Division Directors (ADDs). Peter Blattner (Switzerland) remains D2D for 2015-19 (only nomination received). The remainder of the D2 management team is also unchanged.

Fifteen Technical Committees (TCs) met in Manchester: **TC 2-29** *Measurement of Detector Linearity* (Eppeldauer); **TC 2-47** *Characterization and Calibration Methods of UV Radiometers* (); **TC 2-50** *Measurement of the Optical Properties of LED Assemblies* (); **TC 2-59** *Characterization of imaging luminance measurement devices* (Krüger); **TC 2-62** *Imaging-Photometer-Based Near-Field Goniophotometry* (); **TC2-63** *Optical measurement of high-power LEDs* (Zong); **TC 2-64** *High speed testing methods for LEDs* (Heidel); **TC 2-65** *Photometric Measurements in the Mesopic Range* (Goodman); **TC 2-68** *Optical measurement methods for OLEDs used for lighting* (Gerloff); **TC 2-69** *CIE Classification system of Illuminance and Luminance Meters* (); **TC2-73** *Measurement of quantities relating to photobiological safety of lighting products* (Mou); **TC 2-75** *Photometry of Curved and Flexible OLED and LED Sources* (); **TC 2-77** *Fundamental Concepts* (Bergen); **TC 2-78** *The Goniophotometry of Lamps and Luminaires* (Bergen); **TC 2-79** *Integrating sphere photometry and spectroradiometry* (Lee).

2 Highlights

Six (6) new TCs, one (1) JTC and three (3) new Reporterships were proposed at the D2 meeting but only the one JTC (given the designation JTC-8 after the meeting), and the three Reporterships (given the designations R2-73, R2-74, and R2-75 after the meeting) were approved at the meeting; no decision was made by the D2 members at the meeting for the six TC proposals. The proposed Chairs were asked to provide further details with a deadline of 2015-08-07.

2.1 New Technical Committees and Reporterships

Proposals for 6 New D2 Technical Committees and 1 Joint Technical Committee:

(1) Technical Committee

Title: *Standard for Broadband UV Measurements*

Proposer: George Eppeldauer (USA)

Motivation: To standardize a method that has been developed by proposer.

Decision: Proposer is to update his TC proposal and re-submit by 2015-08-07.

(2) Technical Committee

Title: *CIE Standard on Test Methods for OLED Luminaires and Modules*

Proposer: Guy Vandermeersch (BE)

Motivation: IEC can only refer to published standards. This work needs to be done rapidly to follow CIE S 025 closely and only deal with aspects specific to OLEDs. In particular, one of the key issues is the uniformity/homogeneity which should be defined/standardized in a more technical manner and not related too much to visual effects. Proposed timeline: one year.

Decision: Proposer is to update his TC proposal and re-submit by 2015-08-07.

(3) Technical Committee

Title: *Recommendation for BRDF measurements*

Proposer: Gael Obein (FR)

Motivation: Problems exist at the moment with non-standardized measurement and results on different equipment not being compatible.

Decision: Proposer is to update his TC proposal (including title which is considered too vague) and re-submit by 2015-08-07.

(4) Technical Committee

Title: *Glare Measurement by Imaging Luminance Measurement Device*

Proposer: Shau-Wei Hsu (TW)

Motivation: Although there is a JTC dealing with the revision of the UGR, there are already devices performing these measurements and guidance is needed.

Decision: Proposer is to update his TC proposal (including title which is considered too vague) and re-submit by 2015-08-07.

(5) Technical Committee

Title: *Characterization and Measurement of LED Lighting Sources with Dynamic Control*

Proposer: Qiu-Hong Hu (CN)

Discussion: There was concern raised that the scope is too large and that non-visual effects are not a D2 responsibility. This could be an example of a research coordination group opportunity, where more research is needed before a TC is created. It was recommended to narrow down the scope to D2 matters only.

Decision: Proposer is to update his TC proposal (including title which is considered too vague) and re-submit by 2015-08-07.

(6) Technical Committee

Title: *Recommendations on LED test data reporting*

Proposer: András Poppe (HU)

Discussion: It was recommended to not use “LED” but “LED package” in the title.

Decision: Proposer is to update his TC proposal (including title which is considered too vague) and re-submit by 2015-08-07.

[More detailed proposals for each of these TCs are available from Joanne Zwinkels, upon request.](#)

(x) Joint Technical Committee, JTC-NN D1/D2/D3/D4/D5/D6/D8

Title: *Terminology in light and lighting*

Terms of Reference:

To address any issues regarding terms and definitions related to the International Lighting Vocabulary (ILV). This includes coordination within CIE Divisions to maintain and update the ILV, coordination with IEC in questions related to the incorporation of ILV terms and definitions into IEC 60050-845 “International Electrotechnical Vocabulary. Lighting”, coordination with ISO/TC 12 in questions related to the incorporation of ILV terms and definitions into ISO 80000-7 “Quantities and units – Part 7: Light and Lighting” and any further terminology issues within CIE.

Decision: After the meeting, this JTC was given the number, [JTC-8](#).

Members: by invitation only; Canadian members are: Sharon McFadden (D1) and Joanne Zwinkels (D2)

Proposals for 3 new D2 Reporterships:

(1) Title: *Colour Luminance File Format Specification*

Proposer: Udo Krüger (DE)

Motivation: There was an agreement in TC2-59 meetings that an independent file format is very important for the exchange of measurement data between users and the comparison of measurements results and simulations. However there was no substantial feedback from the members about the suggested format and the necessary data that should be defined. The reportership should work out the way of introducing mandatory and optional information into the files. Furthermore the reportership should find a possible publication format for such a fileformat.

Discussion: There were questions whether this Reportership would publish a TN or a TC and regarding IP issues. The scope needs to be prepared.

Decision: Proposer is to prepare the scope for this reportership with a deadline of 2015-08-07. After the meeting, this Reportership was given the number, [R2-73](#).

(2) Title: *Physical Characterization of New Visual Effects in the Field of Appearance of Materials*

Proposer: Alejandro Ferrero (ES)

Discussion: Proposer gave a presentation at CIE conference in Manchester on this topic related to his research on characterization of BRDF of surfaces, including goniofluorescence in photoluminescent materials.

Decision: After the meeting, this Reportership was given the number, [R2-74](#).

(3) Title: *TN on the Use of “Accuracy” and Related Terms in the Specifications of Testing and Measurement Equipment*

Proposer/Reporter: Tony Bergen (AU)

Proposed Scope: To consult with D2 and external experts and write a TN regarding the improper use of terms such as “accuracy”, “error”, “tolerance”, “reproducibility” and “repeatability” in the specifications of testing and measurement equipment and instruments.

Decision: After the meeting, this Reportership was given the number, [R2-75](#).

More detailed proposals for each of these Reporterships are available from [Joanne Zwinkels](#), upon request.

2.2 D2 publications since 2014 meeting in Kuala Lumpur

- CIE S 025/E:2015: Test Method for LED Lamps, LED Luminaires and LED Modules
- DIS 024/E:2015: Light Emitting Diodes (LEDs) and LED Assemblies – Terms and Definitions
- CIE 214:2014 Effect of Instrumental Bandpass Function and Measurement Interval on Spectral Quantities
- CIE x040:2014 Proceedings of CIE Expert Symposium on Measurement Uncertainties in Photometry and Radiometry for Industry
- CIE 210:2014 Photometry Using $V(\lambda)$ -Corrected Detectors as Reference and Transfer Standards

In addition, one TN on *Non-Visual Effects of Light* has been published: TN-003 and is freely available for download: http://files.cie.co.at/785_CIE_TN_003-2015.pdf.

2.3 Future meetings and Symposia

2015 - CIE Tutorial and Expert Symposium on the CIE S025 LED lamps, LED luminaires and LED modules test Standard, November 23-26, PTB, Braunschweig

2016 - CIE D2 2016 meeting in conjunction with D4 and D5 meetings and CIE 2016 on Lighting Quality and Energy Efficiency Conference, Melbourne, Australia, March 3-9, 2016

2016 - CIE Expert Symposium on Appearance, Prague, Czech Republic, August 30 – September 1, 2016

2017 - CIE D2 2017 meeting in conjunction with CIE midterm meeting, Jeju, South Korea, October 20-27, 2017

2018 - CIE D2 2018 meeting - Proposal by Netherlands to host in conjunction with a conference, workshop, etc.

3 Current Canadian participation in Division 2 activities

Activity	Title	Canadian Members
TC2-57 *	Revision of CIE S014-2	J. Zwinkels (NRC) -member
TC2-59	Characterisation of Imaging Luminance Measurement Devices	T.Moggridge (Westboro Photonics) -member
TC2-63	Optical Measurement of High Power LEDs	V.Venkataramanan (UofT), M.M. Sisto (INO) -members
TC2-65	Photometric Measurements in the Mesopic Range	J.Zwinkels(NRC) – member
TC2-71	CIE Standard on Test Methods for LED Lamps, Luminaires and Modules	R.Li (Lumentra) – member
TC2-77	Fundamental Concepts	J.Zwinkels(NRC) – member
TC2-80	Spectroradiometric measurement of light sources	J.Zwinkels(NRC) – member
JTC-1	Implementation of CIE 191:2010 Mesopic Photometry in Outdoor Lighting (D1/D2/D4/D5)	J. Zwinkels (NRC)- member
JTC-2 (CIE/CCPR)	Principles Governing Photometry	J. Zwinkels(NRC) - member
JTC-8	Terminology (all CIE Divisions)	J. Zwinkels (D2 member)
L2-3	ISO TC6 Paper, board & pulps	J. Zwinkels(NRC)- liaison
Officers	Associate Division Director, D2	J. Zwinkels (NRC)-ADD

* Was closed in Manchester but new TC of same title, TCC and scope was approved by the BA after the meeting, although will have a new number.

4 Highlights of Division 2 Work Programme

4.1 Overview of the status of selected TCs

Additional information on the terms of reference and membership for all Technical Committees and Reporterships can be found at the website: <http://cie.co.at/div2>

TC2-29 Measurement of Detector Linearity (Eppeldauer). The first part of the document that describes how to avoid nonlinearity in detector systems has been completed by the TCC. This first part includes definitions, reasons of nonlinearity, including detector operating circuits, measurement conditions, DC and AC signal measurements and second-stage output measurements. The first part was combined with the nonlinearity test methods written earlier. The format of the TC Report has been restructured. The uncertainty and special issues for detector arrays were added to the second part. The TCC sent the Draft-5 of the document to TC members on Feb 26, 2015. The received comments, including the edits by D2E have been added to Draft-6 which will be circulated in early June 2015 for CD vote. There will be a meeting of TC 2-29 in Manchester, which will be a final chance to apply any changes to the document.

TC2-47 *Characterization and Calibration Methods of UV Radiometers* (Sperling). The complete draft was revised again by the TCC and sent as version 6..01 for second WD Ballot on 19th January with a deadline (2015-19-02).;132 comments were received from all active members of the TC and all members unanimously agreed on publication of the TC Report. However, a lot of editorial changes and some significant technical changes were requested. All requested changes were included and on 14 April 2015, the TCC sent the Final WD6.02 for ballot by the TC-members, the Managing Board of D2 and to the CB for preparation of the CD.

TC2-63 *Optical measurement of high power LEDs* (Zong). Since the last status report of 2014-02-27, the TC has made a lot of progress. The TC report is now very close to the ballot version. The major accomplishments were as follows: 2014-04-18 - the 5th draft (version 3.0) was distributed to all members before the TC meeting in Kuala Lumpur. A total of 20 members attended this meeting. The latest 5th draft report was reviewed and discussed. Members decided (by voting) to add another method to the report for setting the junction temperature of a HP-LED. The method was proposed by Andras Poppe and is based on the measurement of the thermal resistance of the test LED to determine the junction temperature. 2014-07-26 - a new draft (6th draft, version 4.0) was sent to Andras Poppe, mainly to address his concerns regarding the newly added method. 2014-09-20 - TCC made a new draft (6th draft, version 4.1). 2015-05-29 - TCC completed the 7th draft, version 5.0, based on a large number of valuable contributions from TC members. The TC held its (final) meeting in Manchester.

TC2-64 *High speed testing methods for LEDs* (Heidel). Draft 5.2a was distributed to TC members on 1 June 2015. The TC held its (final) meeting in Manchester where it obtained final inputs to TC report. The future work plan is to implement Chapter 12 Traceability (using text from TC2-63) and replace two diagrams for ZTH to new ones without mentioning the instrument type.

TC2-68 *Optical measurement methods for OLEDs used for lighting* (Gerloff). The TC is finalizing the "Terminology of OLEDs"-proposal. Draft 1.3 was presented in Austria. Some overlapping terms between CIE TC2-68 and IEC SC 34A/working group PRESCO OLED PT were harmonized. TCS reported about the last IEC SC 34A/working group PRESCO OLED PT meeting. A comprehensive talk about recent activities in STC1 was given by Thorsten Gerloff. A comprehensive talk about recent activities in STC2 was given by Yasuki Yamauchi. The next steps were defined: 1. Finalize terminology draft within the TC. Before publishing it has to be discussed and distributed to all relevant industrial OLED manufacturers and also to relevant standardization bodies such as IEC and IESNA which are working in the field of OLEDs used for lighting; 2. Continue working within the Sub TCs. First topic is luminous flux related issues. The target is to finalize Terminology draft in 2015.

TC2-69 *CIE classification system of illuminance and luminance meters* (Blattner).

Draft V2 was distributed to TC members for comments on 2015-06-08. It includes the following changes: 1) contribution of Richard Young (relation of f_2 and measurement uncertainty); 2) a small section on the determination of measurement uncertainty of quality indices; 3) Chapter 4 is removed (summary of national classification systems) as all information is already available in chapter 3; 4) new CIE classification system which includes only a subset of quality indices, i.e. those common to all applications; 5) new section which gives requirements for specific applications. TCC has introduced this proposal to address the concerns raised by Germany and Japan. The draft TC report is now mostly completed. The TC had a meeting in Manchester to discuss the proposed classification; if agreement is reached, the document is ready to be edited.

TC2-71 *CIE Standard on test methods for LED lamps, luminaires and modules* (Ohno).

The main document of TC2-71 was published as CIE S 025 on 20 March 2015, and the main work of the TC is complete. For TG2 activity, TCC presented a partial draft (version 0.2), and the TC agreed to develop such TN with the step-by-step approach that TCC was proposing. There was also a proposal to compare the results with this method and Monte Carlo approach to verify the accuracy of this step-by-step approach. U. Krueger agreed to assist in such a comparison using his Monte Carlo program. TCC developed an EXCEL sheet program which contains all calculations of uncertainties in separate tabs using the step-by-step approach, with example characteristics data of a measurement system (such as stray light and bandpass of a spectroradiometer) and a set of LED lamp spectra used as examples, and summary tables of uncertainty, which are linked to separate calculations, and sent this to Krueger in February 2015. TCC is developing a new TN draft (based on the new EXCEL sheet) and has completed up to section 3. The TCC is also working on further sections. The current partial draft was distributed to TG members on 24 June 24 2015.

TC 2-72 *The evaluation of uncertainties in measurements of the optical properties of solid state lighting devices, including coloured LEDs* (Young). The second TC meeting was held in Vienna on 2014-9-9 with 29 attendees, comprising 6 members and 23 observers. At the meeting, draft 0.1 was discussed; in particular section 7.6 (being the only complete section in the document). Following the meeting, draft 0.1_2 was circulated to members, containing comments and edits from the meeting, and this is the latest released version. Since then, Jim Gardner has provided significant contributions to other sections and draft 1.0 incorporating these contributions will be available shortly.

TC 2-73 *Measurement of quantities relating to photobiological safety of lighting products* (Mou). In the past year, the TCC has prepared a new version of the TC report that takes account of the discussions at the 2014 TC meeting in Kuala Lumpur. In particular, it was decided to not include the circadian quantities on nocturnal melatonin suppression of ocular lighting in the TC report. It would include the measurement on flicker and the content on uncertainty would be confirmed dependent on future developments. The new version also considers the relation between this report and the measurement part in the new version of CIE S009. This (final) WD was discussed at the TC meeting in Manchester.

TC 2-74 *Goniospectroradiometry of optical radiation sources* (Pan). After the 2014 TC meeting in Kuala Lumpur, draft 4.10 of the TC report was distributed; this version includes the following modifications and additions: 1) an informative simulation example of determining measurement distance for spectral radiant intensity in Annex A; 2) the new continuing scanning mode (CR mode) was updated greatly for goniospectroradiometry and a detailed description for the principle of CR mode was given in Annex B, and the implementation method of CR mode was given in Annex C, including the principle of implementation method and a simulation example; 3) an informative example of sampling interval determination and signal recovery was added in Annex D, including sampling interval determination based on spectral radiant quantity and CCT, respectively; 4) Expressions in terms and definitions have been modified according to the comments at KL meeting, such as the definitions of angularly averaged chromaticity coordinate, receiver of goniospectroradiometer, etc. Next, the influence factors for uncertainties in Section 8.4 will be simplified according to the suggestion in KL. The final draft for TC voting will be ready for discussion within the TC before the end of 2015.

TC 2-75 *Photometry of curved and flexible OLED and LED sources* (Yu). In the past year, the TCC has focused on measuring the luminance uniformity of the curved surface source by using the image luminance meter, including the theoretical analysis, experiments, simulations, and uncertainty estimation. In addition, the main parts of the first draft of the technical report have been done. However, there has been a lack of samples of flexible OLED to do the experiments for angular dependence chromaticity and poor results on the reflectance measurement. In order to finish the draft earlier, the TCC will discuss the possibility to remove these two items from the draft during the third TC meeting in Manchester. Since curved sources are quite different from that for flat sources, the TCC has expended lots of time in theory

analyses, experiments, and simulations to support the methods recommended in this TC and requests one more year to finish the draft.

TC 2-76 *Characterization of AC-driven LED products for SSL applications* (Chou). The TCC prepared a 4th WD of the Report and distributed to TC members on 26 June 2015.

TC 2-77 *Fundamental Concepts* (Bergen). The TC had its fourth meeting in Manchester where the topic of discussion was Standardization of OLEDs.

TC 2-78 *The Goniophotometry of Lamps and Luminaires* (Bergen). The TC met in Vienna in September 2014. A subcommittee was formed to make a recommendation on a new classification system. This was done and distributed to the TC. The TCC received feedback from the Japanese members and incorporated it into the recommended classification system. However more recently an alternative proposal was made by DIN and this has been distributed to the TC members for discussion at the TC meeting in Manchester. After the Manchester meeting, the TCC will start filling out parts of the draft report to at least provide the basis for future discussion.

TC 2-79 *Integrating sphere photometry and spectroradiometry* (Lee). After the 2014 KL meeting, TC member contributions were collected and a 1st draft of the report was prepared and distributed in April 2015. Further TC member comments and contributions were collected and a 2nd draft was prepared by the TCC for discussion at the 2nd face-to-face TC meeting in Manchester.

TC 2-80 *Spectroradiometric measurement of light sources* (Young). The TC held its 2nd meeting in Vienna on 2014-09-09 in conjunction with the CIE Expert Symposium. Draft 1.0, which included contributions received since the last meeting in KL, was discussed.

Since this meeting, several contributions have been received and Draft 1.1 incorporating these inputs is in preparation. No TC meeting was planned for Manchester.

JTC 2 (CIE/CCPR): Principles Governing Photometry (Goodman/Ohno). After the TC meeting in KL, T. Goodman sent her proposed draft of the Appendix in Aug. 2014 but it was not agreed by the TC. Some members expressed the view that the definition equations for luminance, etc. in ILV were mathematically incorrect. Revision of ISO 80000 by ISO TC 12 WG19 started in 2014. Armin Sperling, one of the JTC-2 members, is the convener for Part 7 on Light. To address this issue, a panel of experts in CIE was created including: DD2, VPT, VPP, TM, and Sperling, to liaise with work for Part 7 to ensure harmonization with ILV; this panel had discussions from late 2014 to early 2015. However, the panel could not agree on whether these definitions should be a mathematical derivative or a quotient of elementary quantities (as was the case in the past). It was finally agreed on a compromise solution, which is a simpler expression using a derivative form of equation but the definitions are worded so that they can be interpreted in either way. It deviates from the current ILV and it was agreed by the panel to propose revision of ILV and to have the JTC-2 document consistent with the IL. Draft 4.0, incorporating the definitions of photometric quantities as explained above, was distributed on 18 June 2015 as WD ballot. TCC drafted the Appendix for explanatory notes on the definition of luminance based on Sperling's proposed version, which seemed the most rigorous expression for the definition of luminance (but not practical). The WD ballot closed on 20 July 2015. Subsequent to meeting, there were 3 negative votes on the ballot; again largely due to disapproval with the proposed definitions. Work is on-going to try to resolve these issues via e-mail, prior to the CCPR working group meetings in Beijing in October 2015.

4.2 Overview of the status of selected Reporterships

Reportership reports are posted at ColTool.

The following Reporterships were discussed at the Manchester meeting;

R2-52: *Flicker measurement and flicker index study on solid state lighting*

Reporter: Kuei-Neng (Gilbert) Wu

Reporter requested another year. However, there is no time limit for reporterships; no action needed.

R2-56: *Monitoring Progress in Regional Metrology Organizations (RMOs)*

Reporter: Maria Luisa Rastello (It)

Since NC Italy is no longer a member of CIE, there was discussion on how this Reporter could stay on. This is possible if she becomes a personal member or her organization becomes an affiliate member.

R2-57: *Monitoring Progress of IEC TR 62778*

Reporter: Hiroshi Shitomi

A five member task group has been formed including Hiroshi and they have submitted comments to IEC TC34. They have had two meetings and good discussions about the CIE statement.

R2-60: *Discussion on the Definition of Luminance/Radiance*

Reporter: Teresa Goodman

There has been a lot of debate on this topic. A small task group is moving closer to an agreement on the definition of luminance, but it is different from the definition in the ILV. There is concern that some TCs have started to use slightly revised definitions. It was confirmed that TCs should use the definitions that are published in the ILV. If a different interpretation is needed in a particular TC report, reference should still be made to the ILV but a discussion point could be put in the definitions section.

R2-65: *Multi-Geometry Colour Measurements of Effect Materials*

Reporter: Gaël Obein

The reporter spoke to his report (tabled). Possibility to establish a TC next year.

Need to have more collaboration with D1.

Decisions at meeting: The reporter is to email a list of questions for distribution to D2 that he would like to receive feedback; Deadline: 2014-06-30; All D2 members, especially outside Europe, to give feedback to Gaël; Deadline: 2014-08-31.

4.3 Dissolution of and changes to TCs and Reporterships

List of TCs and reportships that have been closed in the past year and/or changes in Chairs or Terms of The following 2 TCs were automatically closed by the BA before the Manchester meeting because of the CoP:

TC 2-17: *Recommendation for Integrated Irradiance and Spectral Distribution of Simulated Solar Radiation*

Follow-up discussion at Manchester meeting: there has been a lot of work done on this TC, particularly when Daryl Myers (US) took over as TCC. However, the quality of the document was not considered sufficient for WD ballot. It is noted that CIE 85 is referenced by ISO standards and that a Reportership

should be created to determine the best way to have participation from ISO (TC61). Hiroshi Shitomi (JP) was tasked with finding a possible Reporter.

TC 2-57: *Revision of CIE S014-2*

Follow-up discussion at Manchester meeting: Prior to the Manchester meeting, the TCC (Peter Csuti, HU) had submitted TC application forms and at the meeting, obtained application forms from at least five different countries (including Canada and the US). The D2D was asked to try to persuade the BA to reinstate TC-57 without change in number.

Decision: After the meeting, the BA did not accept this proposal but approved a new TC based on TC 2-57 including the same title, TCC and TR.

The following 3 TCs are looking for new TC Chairs because of decisions at the Manchester meeting:

TC 2-62: *Imaging-Photometer-Based Near-Field Goniophotometry*

Terms of reference: To prepare a CIE recommendation on the methods for characterization and calibration of imaging-photometry-based near-field goniophotometers and for determination and conversion of photometric data of lamps and luminaires for both near-field and far-field applications. Status: Draft 2.2 was circulated in September 2014. Expected publication: 2017.

TC 2-68: *Optical Measurement Methods for OLEDs used for Lighting*

Terms of reference: To produce a Technical Report on the measurement methods of the optical properties and the terminology of OLEDs used for lighting. Status: TC is finalizing the "Terminology of OLEDs"-proposal. Draft 1.3 was presented in 2014. Draft 1 of the report on effect of posture orientation for flux maintenance was distributed in March 2015. Expected publication: Terminology: 2016, posture orientation: 2016. Further publications to be discussed and decided by TC and D2.

TC 2-72: *The Evaluation of Uncertainties in Measurement of the Optical Properties of Solid State Lighting Devices, including Coloured LEDs*

Terms of reference: To expand the supplements to CIE 198-2011 to include further principles and examples for evaluation of the uncertainties associated with the measurement and testing of LEDs and other solid state lighting devices. Examples include distribution photometry, spectral measurement and derived quantities, goniospectroradiometry and other priority measurements as advised by industry. Status: Draft1 of Supplement 2- part1 (Spectroradiometry and Derivative Quantities) was circulated in June 2015. Expected publication date for part 1: 2017. Part 2 and 3 to follow.

The following 10 Reporterships were closed at the Manchester meeting and their final reports were posted on ColTool:

R2-33 *Measurement of Laser-Based Projection Displays* (Tongsheng Mou)

R2-49 *Standardization of Broad-Band UV Measurements* (George Eppeldauer)

R2-50 *Metric for Comparison of Luminous Intensity Distributions* (Udo Krüger)

R2-51 *Characterization and Measurement of LED Lighting Sources with Dynamic Control* (Jian Ping Wang)

R2-53 *Glare Rating Measurement by Image Luminance Measuring Device, ILMD* (Shau-Wei Hsu)

R2-54 *Internal Quantum Efficiency Measurement for SSL Products* (Cong Chen)

R2-59 *Discussion on the Definition of BRDF* (Joanne Zwinkels)

R2-65 *Multi-Geometry Colour Measurements of Gonio-apparent Materials and Metrics for Evaluation* (Gaël Obein)

R2-66 *TN on Colour Difference of Light Sources* (Yoshi Ohno)

R2-67 *TN on Relating Photochemical and Photobiological Quantities to Photometric Quantities* (Peter Blattner)

In addition, one Reportership is seeking a new Reporter and D2D will send out call:

R2-58: *Standard lamps: availability of and alternatives to commercially available incandescent source.*

This short report should focus on the availability of commercially available incandescent sources. The second part of the title is mainly treated in R2-71 "*Towards LED based standard calibration sources for photometry*". Expected publication: 2016. Reference.

4.4 Overview of the status of selected Liaisons

Liaison reports are posted at ColTool.

The following Liaisons were closed at the Manchester meeting:

L2-2: *Division 8* (A. Kravetz)

L2-8: *ISO/TC 145/SC2 N519* (Joanne Zwinkels)

The following two liaison reports were presented at the meeting;

L2-4: IEC TC 34: Lamps and related equipment (G. Vandermeersch)

All the LED standards have now been published regarding requirements for performance – not fixing values but fixing the parameters that are mandatory to be declared on packaging and on the internet. Proposal to change the proposed performance testing method for OLEDs to refer to CIE S 025. An amendment is being made to LED standards to refer to S 025.

L2-9: *IEC/SC34A MT PRESCO with special attention to TS 62504 (Term and definitions for LEDs in general lighting)* (Yoshi Ohno)

Peter Zwick is representing CIE on definition matters to various organizations so this liaison is no longer needed. However if we close this, D2 will not have a liaison to PRESCO. Thus, we need to keep this open to keep aware of the work being done in PRESCO. It was considered that the CIE President should not be the liaison and that a higher-level formal liaison is needed. Proposal to change D2 liaison to PRESCO (temporarily) to D2D Peter Blattner until another liaison is found.

5 Other Division News

D2 Ballots since 2014 meeting in Kuala Lumpur:

- LB D02-1409: Approval Draft of TC 2-71
- LB D02-1408AD DIV Voting on AD/TN of DR 2-67
- LB D02-1407ED BA/DIV Commenting on ED/IS of TC 2-71

- LB D02-1406ED BA/DIV Commenting on ED/TR of TC 2-60
- LB D02-1405AD DIV Voting on AD/TN of DR 2-66
- LB D02-1404 New Chair of TC 2-67
- LB D02-1403ED DIV Commenting on ED/TN of DR 2-66
- LB D02-1402AD: BA/DIV Voting on Approval Draft Technical Report of TC 2-37
- LB D02-1505 DIV voting on AD/TN of DR 6-42
- LB D02-1504: New TC : Update of CIE 065:1985
- LB D02-1503: BA/DIV Commenting on CIE DIS 024/E:2015
- LB D02-1502 DIV Commenting on ED/TN of DR 6-42
- LB D02-1501 Two new reporterships
- LB D02-1411 New Chair of JTC1
- LB D02-1410: Approval Draft of TC 2-60

Additional CIE Ballots requiring approval by D2:

- FDIS 024/E:2015 of TC2-66 Light Emitting Diodes (LEDs) and LED Assemblies – Terms and Definitions: BA, NCs and D2 Ballot
- New JTC on Quantifying Non-Visual Effects with TCC: Luc Schlangen, NL (D6) and Cho-Chair: Peter Blattner (D2) – for approval by D6 and D2 (Deadline: 2015-08-31)
- AD/TN of DR 6-42 Report on the First International Workshop on Circadian and Neurophysiological Photometry 2013: approved by BA, D1, D2, D3 and D6 (2015-06-22)
- CIE Survey on Work and Research Strategy: opinion on present and future D2 work (Deadline: 2015-06-26)

D2 Director's Report:

P. Blattner also reported on the following items:

- CIE D2 Expert Workshop in Vienna, Sept. 2015
 - Topic: measurement uncertainties
 - 50 participants (many from industry)
- IYL – Global Open Lab Day
- Changes in CIE BA: many are D2 members
- CoP: in Feb. 2015, the BA made the decision to apply this more rigorously
- D2 Work Research Strategy: link to preliminary survey results provided (<http://goo.gl/forms/NijlThRsVt>)
- CIE statement on non-visual effects (Press release: 2015-06-23)



International Commission on Illumination
Commission Internationale de l'Eclairage
Internationale Beleuchtungskommission



Canadian National Committee Comité national canadien

Division 3: Interior Environment and Lighting Design

Report to CNC/CIE 60th Annual Meeting
Toronto, Ontario, 20-Oct-2015

Jennifer A. Veitch, Ph.D.
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1 Introduction

The 2015 meeting of Division 3 was held in Manchester, UK, on July 3, 2015. I represented Canada (and also served in the role of Division Director). Minutes of the meeting are available [online](#).

2 Highlights

2.1 New Technical Committees and Reporterships

The Board of Administration went through a lengthy process of reviewing the status of TCs (see section 4.2, below), which resulted in the closure of some TCs. In response to this, Division 3 formed a new technical committee on "Assessment of Discomfort Glare from Daylight in Buildings". This new TC was approved by the Board of Administration at its meeting on July 4. It will take the material produced by the former TC 3-39 and carry the work to its completion.

As part of the CIE strategy for lighting and health (see the CIE [press release](#)), a new Joint Technical Committee was proposed for joint work in D2/D3/D6: "Quantifying ocular radiation input for non-visual photoreceptor stimulation". D3 approved this JTC at the Manchester meeting, as did the other Divisions and the BA.

CIE has created a new JTC 8, Terminology for light and lighting (Chair: Technical Manager, Peter Zwick). The D3 member of this TC will be the Division Editor.

Discussions will take place offline concerning two possible new TCs. One of these would concern measurement and rating of optically complex fenestration; the other concerns spectral daylight measurements. For further information on these discussions, contact me.

No new reporterships were formed.

2.2 Division publications

Since the last report, D3 has published CIE 215:2014, CIE Standard General Sky Guide. This was the output of TC 3-51, which was closed at the Manchester meeting.

2.3 Future meetings

2016: Webex

2017: CIE mid-term meeting, South Korea.

3 Current Canadian participation in Division 3 activities

List Canadians who Chair or participate in Technical Committees, handle a Reportership, act as a Division Officer or act as a liaison.

Activity	Title	Canadian Members
TC3-46	Research roadmap for healthful interior lighting applications	J. Veitch (Chairman)
TC3-49	Decision scheme for lighting controls for tertiary lighting in buildings	C. Suvagau (Member); J. Veitch (Corresponding)
TC3-53	Revision of CIE S 008 Joint ISO*CIE Standard: Lighting of Work Places - Part 1: Indoor	J. Veitch (Member)
Officer	Division Director	J. Veitch
Org. ctte	CIE Expert Symposium on Research Methods for the Effects of Lighting	J. Veitch (member)

In addition, Canadians are active in related activities through the Canadian mirror committee to ISO TC 274. Although these are not, strictly speaking, CIE activities, they are indicative of Canadian participation in the broader work of recommendations and standards for light and lighting.

<i>JTC 6 (CIE-ISO)</i>	<i>Energy Performance of Lighting in Buildings</i>	<i>T. Lau</i>
<i>ISO TC 274</i>	<i>Liaison officer from ISO TC 274 to ISO TC 205/WG 7</i>	<i>C. Sampson</i>

4 Highlights of Division Work Programme

A major element of the Manchester meeting was a strategic planning discussion to identify research directions and potential new work items. This has been followed up with an online survey to refine the inputs. Results of the survey are being analyzed now. These will inform the D3 input to the Division Directors report. The research strategy for CIE is an element of planning for a CIE standards strategy that is in the works. Taken together these documents will guide the planning for future CIE and ISO TC 274 activities.

The BA has approved the D3 proposal to hold an expert workshop on Research Methods for the Effects of Lighting. It is likely that it will take place in 2018, date and place to be determined. .

4.1 Overview of the status of TCs and Reporterships

D3 has adopted a standard template for reporting TC status. Reports on each TC are available as part of the [2015 Division Meeting minutes](#).

Activity	Title	Chairman	Status
<i>JTC 4 (D3/D6)</i>	<i>Visual, health, and environmental benefits of windows in buildings during daylight hours</i>	<i>M. Knoop (D3)</i> <i>F. Bisegna (D6)</i>	Behind schedule; additional volunteers to take on tasks would be beneficial.
<i>JTC 6 (CIE-ISO)</i>	<i>Energy Performance of Lighting in Buildings</i>	<i>S. Moghtader</i>	<i>Just beginning its work as JWG 1 of ISO TC 274.</i>
<i>JTC 7 (D3/D1)</i>	<i>Discomfort caused by glare from luminaires with a non-uniform source luminance</i>	<i>N. Hara (D3)</i> <i>M. Ayama (D1)</i>	<i>Held first meeting at Manchester session.</i>
TC 3-44	Lighting for the elderly	Y. Akashi	Submitted a first WD to the CB; revisions required before further balloting is possible.
TC 3-45	Luminance-based design approach	Y. Nakamura	Final BA deadline for WD is 30-Sep-2015. If not completed, will be closed.
TC 3-46	Research roadmap for healthful	J. Veitch	Final BA deadline for WD is 30-Sep-

<i>Activity</i>	<i>Title</i>	<i>Chairman</i>	<i>Status</i>
	interior lighting applications		2015. If not completed, will be closed.
TC 3-48	CIE standard method of UF table calculation for indoor luminaires	P. Thorns	Final BA deadline for WD is 30-Sep-2015. If not completed, will be closed.
TC 3-49	Decision scheme for lighting controls for tertiary lighting in buildings	P. Dehoff	WD in ballot with TC; draft shortly to be sent to CB/
TC 3-53	Revision of CIE S 008 Joint ISO*CIE Standard: Lighting of Work Places - Part 1: Indoor	Y. Koga	The status of this TC will probably change during the coming year, as the new standards structure is established.
TC 3-54	Revision of CIE 16-1970: Daylight	A. Pellegrino	Progress delayed, but ongoing.
R 3-31:	Available Daylighting Metrics	J. Mardaljevic	Work is progressing.

4.2 Dissolution of and changes to TCs and Reporterships

At the 2015 meeting, the following activities were closed.

<i>Activity</i>	<i>Title</i>	<i>Chair</i>	<i>Reason</i>
TC 3-34	Protocols for describing lighting	J. Veitch	Completed CIE 213:2014
TC 3-39	Discomfort glare from daylight in buildings	W. Osterhaus	CoP deadlines not met; Chair has held post for > 8 years.
TC 3-47	Climate-based daylight modelling	J. Mardaljevic	Closed. Chair reported that the science is not as fully developed as he had expected and a report cannot be completed at this time.
TC 3-51	CIE standard general sky guide	S. Darula	Completed CIE 2015:2014
TC 3-55	Metrics for sunlighting and daylight passing through sunshading devices	M. Fontoynt	Chair reports that industry support for topic is weak. Will revisit this in future.

5 Other Division News]

During the past year, I was confirmed by the BA as the Division Director for the 2015-2019 quadrennium.

Both Associate Division Directors (ADD3 – Electric Lighting and ADD3 – Daylighting) resigned their posts in order to ensure that they have time to fulfill their duties as TC Chairmen. D3 is in the process of nominating replacements.

The Division Secretary (Martine Knoop, DE) and Division Editor (Peter Thorns, UK) will both continue in their roles for the 2015-2019 quadrennium.



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Division 4: Lighting and Signaling for Transport

Report to CNC/CIE #th Annual Meeting
 10th Biennial Joint CNC/CIE and CIE/USA Technical Conference and Business Meeting
 André Laperrière
 Email: laperriere.andre@lte.ireq.ca

1 Introduction

CIE DIVISION 4 MEETING 2015 Manchester

Date: 30-06-2015 (14:00-15:00), 04-07-2015 (09:00-12:30)

Venue: University of Manchester, University Place, Room 2.218

.André Laperrière was not able to joint the meeting since the trip was not approved due to budget cut.

2 Highlights

2.1 New Technical Committees and Reporterships

The next period for Division Officers runs from 2015 to 2019. Ron Gibbons was elected as Division Director. Due to the planned merger of Divisions 4 and 5 in 2017, he will stay in office until then. This also applies to Nigel Parry (editor, UK), Maurice Donners (secretary, NL), Dionyz Gasparovsky (AD, SK), Yandan Lin (AD, China)

2.2 Division publications

Past year, only TC4-40 and TC4-46 have finished. TC4-46 had to be translated from American to English. A number of formatting and minor editing corrections still have to be made. Only the front-end still needs work.

2.3 Future meetings

Intermediate TC WebEx meetings

2016: Melbourne, Australia, March 7-9, 2016

2017: South Korea – Jeju -

2019 Washington DC

3 Current Canadian participation in Division 4 activities

André Laperrière member of TC 4-51

Activity	Title	Canadian Members
TC451	Optimizing of Road Lighting	André Laperrière (member)

4 Highlights of Division Work Programme

New standards or recommendations and guidelines

IES produced RP8:2014, the new road lighting standard for the US

In Europe, EN 13201 is ready and will be published this year (2015).

Hungary is looking into lighting of crosswalks. Norway (Per Ole) mentions they have a guideline, as well as the UK.

France (Cyril Chain) is preparing a new Work zone guideline for Roadworks and a guideline for diagnostics of outdoor lighting installations

China (Yandan) has new guidelines for the lighting of tunnels.

Germany (Axel) has new guidelines for the lighting of rail yards.

4.1 Overview of the status of TCs and Reporterships

4.1.1 TC 4-33: Discomfort Glare in Road Lighting (Sermin Onaygil (TR))

The TC discussed a new version of their document. It was decided not to include disability glare but to create a separate reportership instead. Stephan Voelker proposed and voted to be proposed to BA as new TCC.

4.1.2 TC 4-47: Application of LEDs in Transport Signalling and Lighting (Steve Jenkins (AU))

The documents were reviewed. This TC is in compliance. TCC Steve Jenkin plans to complete all documents by October.

4.1.3 TC 4-50: Road Surface Characterization for Lighting Applications (Haldun Demirdes (FR))

TCC Haldun covering application part has retired. Guisepe Rossi will take over as TCC. Cyril Chain (TCS) will prepare guidelines for measurement and data format. Proposed workplan is to finish work in two years. The report will consist of two parts: theory and tables. More data needed for the latter, also from more different countries (now very few). Two webex meetings are planned (October and January). A physical meeting will be held in Melbourne. The TC is thinking about organizing a second CIE symposium on pavement reflectance.

4.1.4 TC 4-51: Optimizing of Road Lighting (Ole Wanvik (NO))

TC 4-51 met with 30 participants (21 members, 9 guests). The TC is now working on a draft report. Plan is to finish the document mid 2016. A new TCC is needed as Per Ole will retire early 2015. Webex's are planned for late October and January.

4.1.5 : TC 4-52: Lighting for pedestrians: new empirical data (Ole Wanvik (NO))

Steve Fotios discussed his plan and the availability of data. Maurice Donners was voted to become the TCS. The TC recommended to form a working group on cycling. All present voted in favour. This will be taken to the BA.

4.2 Dissolution of and changes to TCs and Reporterships

- Proposals by Division members
 - i. Steve Jenkins proposes a reportership on LED billboards.
 - ii. The Light intrusion reportership is looking for a volunteer.
 - iii. High speed roadway lighting
- Proposals by TC's
 - i. TC 4-33 proposed a Working Group on Disability glare
 - ii. TC4-52 proposed a Working Group on Lighting for Cyclists
 - iii. Rethink luminance concept in terms of observation angles differing that 1 degree as 3 degrees and 45 degrees are at least as important

In TC4-33: Stephan Völker will take over from Ron Gibbons. TC4-47 with TCC Steve Jenkins, is in its last year, so it is proposed not to change the TCC.

5 Other Division News

CIE Divisions Meeting

- Combined Fee for meeting and conference
- Schedule Difficulties
- Possibilities of day only fees
- Separate Fees for the meetings and conference



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Division 5: Exterior Lighting

Report to CNC/CIE 60th Annual Meeting
Toronto Oct 20 2015

Martyn K Timmings
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1 Introduction

The last meeting was in Manchester, I was unable to attend

Div 5 To study procedures and prepare guides for the design of lighting for exterior working areas, security lighting, flood lighting, pedestrian and other urban areas without motorized traffic, areas for sports and recreation, and for mine lighting.

.Highlights

From Manchester meeting minutes

Technical Committee Progress Reports (TC chairmen)

TC 5-18 Practical Design Guidelines for the Lighting Of Exterior Work Areas

K. Austin sent his report. Partly there should be a standard or its update and partly there should be an additional guide on lighting design. There is a draft on CollTool, approx. 70 % of the document is finished. TC is closed due to CoP incompliance. If there is anybody to continue the work, the TC will not be open again but a new TC may be established. Division members are asked to volunteer, now or later.

TC 5-20 Guide for Sports Lighting

TCC present at the meeting. Big part of the document draft is done. Volunteers are invited to join the TC and to contribute. China expressed the interest (CShuxiao), DD: Action: CN to take official steps to join, i.e send Membership Application Form (MAFÖ to CB (ciecb@cie.co.at) and TCC (optocandela@outlook.com)

TC 5-21 Urban Masterplanning

TCC present at the meeting. TCC wrote a brief report. DD: This is a very old TC, works almost finished, there are two open issues. For open questions TCC should consult before voting, sent draft to all amabers including rep of France (C. Chain) , not to let it for voting. France (C. Chain) casting negative vote in previous balloting, will collaborate.

TC 5-23 Guidelines for the Use of Different Illuminance Patterns in Outdoor Applications

Past TCC present at the meeting (TC closed by BA). TCC reported briefly the status with the works. Report is almost finished, uploaded to Coll Tool by DD. DD will ask CB to make access to the document draft for Div5 members.

- Q, Chain: would it not be easier to have a technical note instead?
- A, DD: no due to purpose of the document, addressing a larger audience, language for a general public etc.

DD thanked past TCC for work and regret about the closure of TC.

TC 5-24 Guide for Architectural and Decorative Lighting

DD reported as member of this TC. Members were asked for inputs and TCC awaited the main works to be performed by a professional writer. Because there was no activity in 3 years, BA closed the TC due to inactivity. Comment from DD: it is not a failure, but opportunity to try it in a different way may be.

TC 5-26 Guide for the Lighting of Sports Events for Colour TV and Film Systems

TCC present at the meeting. Exceptionally the same TCC as for TC5-20. TCC reported briefly. There is good progress with the document. TCC: There is inconsistency on the website regarding the country of origin of the same TCC person. DD: CB will be contacted to make necessary corrections.

TC 5-27 Artificial Lighting and its Impact on the Natural Environment

DD: B. Parks volunteered to do the works, but never responded to calls. TC was closed, but subject of renewal, if knowledgeable volunteers found.
Comment from several national reps: There should be a liaison with this field.

TC 5-28 Guide on Obtrusive Light – Review of Publication 150:2003

TCC present at the meeting, has sent the report and presented it briefly at the meeting. The document is nearly ready for publication. There are items to be dealt in future in a new TC and/or reportship, open to contributions.

1.1 Reportership Reports

2

3 R 5-18 Comparison of Glare Assessment Methods (S. Voelker):

4 Reporter present at the meeting and gave a brief summary on the status. Ca. 40 % of the report is finalized. There is a lot of stuff and research in the field, data etc. There is TC in Division 4 dealing with the problems. For Division 5 it is useful to have a reportership due to items interesting in the document for Div 5.

5 Comment, DD: Glare assessment is useful not only for road lighting but also urban lighting and sports lighting.

6 Comment: Pollard: Glare issues are not applicable to all fields, sports lighting for instance is very different from road and urban lighting.

7 Actions: DD will check the records on comments of T. Lemons on glare assessment for indoor sports.

8

9 R 5-21 CEN/ISO (A. Stockmar):

10 Reporter present at the meeting. Exterior workplace lighting and sports lighting are not on the CEN work item (WI) list officially. Sports lighting standard should be, however, revised. WG4 will be possibly established in CEN to deal with this document.

11 Action, A. Stockmar to inform Div 5 about the news operatively as the things will progress.

12 Comment, DD: There is also a strong relationship with ISO/TC274, in middle of autumn there will be more info when CIE strategy plan will be known, until then the preliminary information will not be communicated in order not to mislead the members.

12.1 Future meetings

13 2016, [CIE Lighting Quality & Energy Efficiency Conference](#), March 3 to 5, 2016, Melbourne, Australia. Followed by Divisions 2, 4 & 5 Annual Meetings March 7 to 9, 2016.

14 017 Jeju, South Korea

15 2018 Vacant

16 2019 Washington US

17 DD proposed to have WEBEX facility on the next venues (this is good news even if it is off hours for Canada)

18 Current Canadian participation in Division 5 activities

Publication drafts forwarded to respective outdoor specialists within our membership for review and comment

TC5-28 Obtrusive Light

Requirements for safety and Security for Exterior Work Spacesr

19 Other Division News

Dear Division5 members, As it was announced on the last D5 meeting, the BA formed a task group of three to make proposal for the future organisation for divisions 4 & 5. Possible options are either to continue like this or close the collaboration between Divisions or merging two Divisions. As a member of this task group, I am calling you to an open discussion about your and your country's view. Please start commenting today and we will have enough time to a live discussion

I support this, maybe Andre will take both portfolios before its official!!

I think this is 4 terms for me, it's been a pleasure working with CNC , I was pleased to get to the Centennial in Paris, thank you all for your support over the more than 30 years I have been involved, adios Martyn Timmings



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Division 8: Image Technology

Report to CNC/CIE 60th Annual Meeting
Toronto October 20 2015

Réjean Baribeau

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1 Introduction

Division 8 official meeting was held on July 2, 2015 in conjunction with the CIE conference in Manchester. The total attendance was 33, with no representative from Canada. The minutes are available from the Web site <http://div8.cie.co.at/>. The continuation of Po-Chieh Hung as Division Director was approved during the meeting. Prior to the meeting, Christine Fernandez---Maloigne (FR) had succeeded to Alessandro Rizzi as Division Secretary.

2 Highlights

2.1 New Technical Committees and Reporterships

TC8-14 Specification of Spatio-Chromatic Complexity, Noël Richard (FR) – Approved

“To produce a state---of---the---art report on the existing definitions of the complexity notion related to the aspect of non---uniform surfaces, generally defined as textured. To combine these definitions in order to produce a single definition embedding both spatial and chromatic variations in a generic and vector form.”

TC 8---09: Archival Colour Imaging, Robert Buckley (US), 2005 – Reinstalled, Approval pending

“To recommend a set of techniques for the accurate capture, encoding and long---term preservation of colour descriptions of digital images that are either born digital or the result of digitizing 2D static physical objects, including documents, maps, photographic materials and paintings.”

R8---13; Common colour appearance, Craig Revie (GB), 2015

R8---15, A survey on Quality Metrics on Stereoscopic Imaging

2.2 Division publications

Two documents are under Editorial Review:

R8---10 Full---Reference Image Quality Metrics: Classification and Evaluation

R8---12 3D Multi---view Image/Video Colour Data Format Conversion and Quality Control

2.3 Future meetings

In conjunction with CIC 2016 or by Webex. To be decided by email.

3 Current Canadian participation in Division 8 activities

None.

4 Highlights of Division Work Programme

4.1 Overview of the status of TCs and Reporterships

Besides the new TCs and Reporterships mentioned in 2.1, the following ones are active and summaries of their activities are reported in the minutes from the last D8 meeting, available at <http://div8.cie.co.at/> :

TC 8---07: Multispectral Imaging, Masahiro Yamaguchi (JP), 2004.

TC 8---11: CIECAM02 Mathematics, Changjun Li (CN), 2007

TC8---12: Image and Video Compression Assessment, Christine Fernandez--- Maloigne (FR), 2007

TC8---13: Colour Gamuts for Output Media, Kiran Deshpande (GB), 2013

R 8---11: Colour Image Reproduction for 3D, Kaida Xiao (GB), 2013

R8---13: Common colour appearance, Craig Revie (GB), 2015

4.2 Dissolution of and changes to TCs and Reporterships

TC 8---10: Office Lighting for Imaging, Yasuki Yamauchi (JP), 2005 - closed

R 8---09: Output Linearization Methods for Display and Printers, Klaus Richter (DE), 2011 – closed

R 8---10: Full---Reference Image Quality Metrics: Classification and Evaluation, Marius Pedersen (NO), 2012 – closed

R 8---12: Multi---view Image/Video Colour Data Format Conversion and Quality, Hezerul Abdul Karim (MY), 2013 – closed

5 Other Division News

None.