



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



Canadian National Committee Comité national canadien

MINUTES OF THE 65th ANNUAL CNC/CIE MEETING

2020-December-11

The 65th annual meeting of the Canadian National Committee of the Commission Internationale de l'Éclairage (CNC/CIE) was held on Friday, December, 11, 2020 on the Zoom videoconferencing platform arranged and hosted by J.A. Veitch.

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
CNC-BA	Canadian National Committee Board of Administration
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

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

The 65th annual meeting of the CNC/CIE was called to order at approximately 10:18 EST on Friday, December 11, 2020 by J. Hovis, President.

11 members of the Board of Administration were in attendance in person or by teleconferencing, which constituted a quorum according to the CoP. The list of all attendees is attached as Appendix B. Videoconferencing using the Zoom platform was arranged and hosted by J.A. Veitch.

The agenda was approved as written and is attached as Appendix A.

2. Minutes of the 64th Annual CNC/CIE meeting:

The minutes of the 64th Annual Meeting were approved by a ballot that was circulated to members last spring.

2.1 Action Items:

Action items (AI-1 to AI-3) from the 64th annual meeting minutes (see Appendix C of the Minutes of the 64th Annual Meeting) were discussed. Action item AI-1 was not yet completed at the time of the meeting. L. Asselin volunteered to review documents and provide assistance with correcting and updating French documents on the website. J. Hovis also recommended reaching out to members of the Swiss and French CIE NCs for additional assistance. For Action item AI-2 no Chair of Events Subcommittee had been recruited, but V. Venkataramanan volunteered to continue chairing the Events Subcommittee for another 2 years. Action item AI-3 was partially completed as a system for sending announcements to the affiliates and posting documents on the website was established. To complete this action item identifying other relevant groups and reaching out to them to increase the affiliates list would be ideal. J.A. Veitch requested that those in attendance reach out to relevant organizations or individuals to recruit to the affiliates list.

2.2 Matters Arising:

ACTION ITEM (2019-AI-1): Recruit a bilingual candidate for the Website Subcommittee (All)

ACTION ITEM (2019-AI-2): Recruit Canadian organizations and individuals involved in the light and lighting community for the purposes of expanding the affiliates list and the outreach of CNC-CIE activity.

The following Officer Reports are available at the CNC/CIE web site and will be included as appendices in the 2020 Annual Report.

3. President's Report:

J.Hovis presented his report with discussion. He began by noting that the board of administration had been meeting every 6-8 weeks throughout the year and that if anyone had any issues they would like the board of administration to discuss to bring it to his or A. Rasoulof's attention. J.Hovis then mentioned that a web conference with President of the CIE P. Blattner was held and that he was looking to get more interaction and collaboration between the different NCs. It was also mentioned that a list of the best CIE publications with criteria established by the central

bureau and division directors would be circulated to the NCs and that a vote would be held to determine the best publication. This publication would be provided to NC members for free. J. Hovis mentioned that division members of a TC requiring assistance for reviewing reports contact A. Rasoulof or M. Mossman. J. Hovis mentioned that the 2022 AIC meeting was in the beginning stages of planning. J. Hovis concluded by thanking everyone in attendance for their help and participation throughout the year and wished on behalf of the NC that everybody attending stay healthy and safe.

4. Vice-President's Report:

J.A. Veitch presented her report with discussion and is attached as [Appendix E](#).

5. Secretary's Report

A. Rasoulof presented his report with discussion and is attached as [Appendix F](#). It was mentioned that 7 letter ballots were circulated this year, with one of those an open ballot with a deadline for submission on next Friday. J.A. Veitch noted that the publication code on the member's only area of the website would be changing on Monday and that S.M. McFadden had already uploaded the new code on the website for those interested in purchasing a document from the CIE website.

6. Financial Report:

S. Coyle presented her report with discussion and is attached as [Appendix G](#). It was mentioned that getting the banking contact information (signing authorities) changed was a priority and still underway.

7. Reports from Division Members:

7.1 Division 1 Vision and Colour:

J. Hovis mentioned that L. Whitehead had recently become chair of a new roadmap technical committee on CIE colorimetry on cone fundamentals. L. Whitehead then explained that one of the goals of this new roadmap technical committee was to transition away from the X, Y, Z colorimetry functions and replace it with the more accurate L, M and S functions for colour appearance modelling. J. Hovis then mentioned that the midterm meeting for Division 1 will take place in Kuala Lumpur Malaysia during September and will consist of a hybrid meeting with both in person and online attendance. J. Hovis also mentioned that Division 1 was in talks with the Society of Motion Picture and Television Engineers (SMPTE) to reach a memorandum of understanding regarding spectral response functions of cameras and colour appearance in movies and televisions (talks are still ongoing).

7.2 Division 2 Physical Measurement of Light and Radiation:

J. Zwinkels presented the Division 3 report with discussion. It was mentioned that there were 2 virtual meetings held; one in July and the second in August. The first meeting in July consisted of an informational session where the status of various TCs were highlighted. The second meeting was concerned with the renewals of TCs and TC chairs and highlighted proposals that had been submitted throughout the year. J. Zwinkels mentioned that there were proposals for 2 new TCs: (1) Measurement of obtrusive light and sky glow and (2) Revision of ISO/CIE 19476:2014 Characteristics of the performance of illuminance meters and luminance meters. It was also mentioned that there are 2 new JTC

proposals: (1) Dynamic Lighting and (2) Spectral daylight characteristics. There was discussion about the proposal for 3 new reporterships: (1) Terminology in single/few photon metrology, (2) Validation of a Web App for calculation of alpha-opic quantities and (3) Temperature quantities used in colour appearance properties of light sources. J. Zwinkels then went over the 7 D2 publications since the 2019 Washington meeting and highlighted current Canadian participation in Division 2 activities (activities and Canadian members involved). J. Zwinkels then concluded the discussion by going over the highlights of the Division 2 work program.

7.3 Division 3 Interior Environment and Lighting Design:

J.A. Veitch stated that the Division 3 meeting took place in early July and that those meeting minutes are available on the member's only area of the CNC-CIE website. J.A. Veitch highlighted the creation of 2 new TCs; (1) TC 3-57 A Generic Discomfort Glare Sensation Model and (2) TC-3-58 Visual Ergonomics and Digital Display Use and 2 Division Reporterships; (1) DR 3-35 Resilient Lighting and (2) DR 3-36 Luminance Measurement for UGR. J.A. Veitch then mentioned that one technical note was published titled CIE TN011:2020 What to document and report in studies of ipRGC-influenced responses to light and that this document was freely available. J.A. Veitch then highlighted Canadian involvement in Division 3 activities; she is part of 2 JTCs and a research forum dedicated to temporal light modulation. J.A. Veitch stated that she would like more Canadians to be involved in the work of Division 3 and encouraged those interested to put their name forward on the calls for experts that are in the CIE newsletters for newly proposed TCs. J.A. Veitch mentioned that some of the work in Division 3 takes place jointly with ISO-TC-274 and this consists of several JTCs with JWGs on the ISO-TC-274 side. J.A. Veitch highlighted the closure of the TC 3-55 on the Metrics for sunlighting and daylight passing through sunshading devices which was a consequence of not having any work done in the 4 years since the committee had been created.

7.4 Division 4 Transportation and Exterior Applications:

C. Suvagau started discussion about Division 4 activities by highlighting 2 publications produced during the past year; (1) CIE 236:2019 Lighting for Pedestrians: A Summary of Empirical Data and (2) CIE 234:2019 A Guide to Urban Lighting Master Planning. It was mentioned that 4 new TCs had been created during the past year as well as 7 new reporterships. C. Suvagau then talked about planned future meetings: (1) the workshop on the Calculation and Measurement of Obstructive Lighting that was originally planned to be held in May had been postponed to November, (2) Division 4 annual meeting September 26 – October 2, 2021 in conjunction with the CIE midterm meeting in Penang Malaysia and (3) 2022 Symposium: New Directions in Research and Development of Road Lighting and Urban Lighting in Shanghai on May 2022 and (4) workshop on Lighting Up the Cities in Ljubljana 15 -23 September 2023. C. Suvagau mentioned that Division 4 has 13 TCs, 5 reporterships and participates in 4 JTCs and highlighted the activities of these TCs/JTCs and reporterships. C. Suvagau concluded discussion of Division 4 activity by stating that there is approval for the development of tutorials along each release for CIE publications. These tutorials could include different formats, more practical calculators, video releases and marketing releases to propagate the significance and understanding of committee work.

7.5 Division 6 Photobiology and Photochemistry:

S. Qutob stated that the midterm meeting for Division 6 was held on June 30th 2020 and that the meeting minutes are available on the members area of the CNC-CIE website. It was mentioned that Division 6 had helped with two CIE position statements on the non-visual effects of light and Germicidal UV disinfection with respect to interrupting COVID-19 transmission; it had completed the first of a new type of CIE publication the S 026 Toolbox and User Guide with a well-received online video. Both of these documents are available online and have already been viewed over 2000 times. S. Qutob mentioned that there are 2 new members being welcomed to Division 6 and that a new ballot for a JTC on horticulture was approved. It was mentioned that progress was made towards a JTC proposal on wearable optical dosimeters in relation to non-visual measurement performance characteristics. There was a single division publication; ISO/CIE 17166:2019(E) Erythema reference action spectrum and standard erythema dose. S Qutob then discussed the progress reports from TC Chairs and progress reports from reporterships. S Qutob concluded the discussion by mentioning other division news including the DHS UV germicidal and a workshop on the Vitamin D action spectrum.

7.6 Division 8 Image Technology:

There was no report for Division 8 Image Technology submitted. Division 8 member T. Akhavan did not attend the meeting. L. Whitehead mentioned that interactions between Division 8 and Division 1 are increasing as future displays (topic of Division 8) have issues with the diversity of human observers (topic of Division 1).

8. Membership and Elections

The current list of the CNC/CIE Board of Administration and Members is given in [Appendix I](#).

8.1 Membership and Elections Subcommittees

M. Mossman presented her report as chair of the Membership Subcommittee and this report can be found in [Appendix I](#). M. Mossman noted that there are currently 13 CNC-CIE board of administration members, 37 members and 80 affiliate members. M. Mossman stated that 5 members have decided to step down from their membership roles at the end of 2020 when their term expires. M. Mossman thanked those members for their valuable contributions to the CNC-CIE. 2 Affiliate members had been asked to be removed from the membership because of relocation/retirement while 14 new members joined as affiliates. M. Mossman stated that it is important to identify members and organizations that are not yet aware of the CNC/CIE that can be added to the affiliate list to expand outreach. M. Mossman mentioned that a survey was issued to members asking them to identify the divisions they are most interested in, noting that of the 117 members on the list at the time of being contacted, 63 responded to the survey. M. Mossman noted that there are 5 membership nominations; 1 BoA member willing to renew membership (M. Mossman), 2 members willing to renew their membership (Kristen Poduska and Andrew Silbiger and 2 affiliates willing to be nominated as members (Pordis Hardardottir and Lucas Tang) all for 4 year terms. There was discussion about the lack of representation from Alberta,

Saskatchewan and Manitoba and it was agreed that more balanced geographical representation would be beneficial moving forward.

ACTION ITEM (2020-AI-1): V.Venktaramanan and C. Suvaqau will get in touch with contacts in Western Canada about joining the CIE as affiliates with the intention of improving geographic representation.

8.2 M & E Subcommittee Membership:

There was discussion about the lack of representation from Alberta, Saskatchewan and Manitoba (Western Canada) and it was agreed that more balanced geographical representation would be beneficial moving forward. V. Venktaramanan stated that he had contacts in Alberta that he could get in touch with about joining the CIE.

ACTION ITEM (2020-AI-1): V.Venktaramanan and C. Suvaqau will get in touch with contacts in Western Canada about joining the CIE with the intention of improving geographic representation.

9. NRC Annual Performance Review of the CNC/CIE:

J. Hovis stated that the NRC annual performance review of the CNC/CIE took place in June. J.A. Veitch believes that although the International Affiliations Office has not provided feedback about the performance review meeting, the CNC/CIE passed its review because there was a commitment for funding from the NRC International Affiliations Office and because past reviews of the CNC/CIE were positive.

10. Mirror Committee to ISO/TC 274

10.1 Chair's Report

J.A. Veitch is Chair of MC-ISO TC-274 while J. Hovis is the Vice-Chair. A member of each CIE Division is also a member of the mirror committee. J.A. Veitch mentioned that she would like to recruit additional members from the consumer/public interest and government and authorities having jurisdiction (better representation). J.A. Veitch stated that 16 ballots were cast in the last year. The ISO-TC 274 Plenary meeting did not take place this year and was done using an online format with T. Lau appointed as head of delegation to that meeting. J.A. Veitch mentioned that T. Lau had indicated his willingness to represent Canada as head of delegation at the 2021 plenary meeting and asked those in attendance for comments. J. Hovis stated his support for T. Lau's representation as head of delegation at the 2021 plenary meeting.

10.2 ISO TC 274 Business

10.2.1 Chair Advisory Group

10.2.2 JWG 1 (Energy Requirements for Lighting in Buildings)

J.A. Veitch highlighted that T. Lau is the project leader for this project which aims to develop a guidance document to implement a standard written last year on the performance of lighting in buildings (excel based tool to facilitate complex calculations). There is movement to have a complete document for review in February of 2021.

10.2.3 WG 2 (Commissioning)

T. Lau is a member of WG 2 which deals with the commissioning process of lighting systems. This WG will be starting a new project to supplement the existing document it has on commissioning.

10.2.4 JWG 4 (Integrative Lighting)

J.A. Veitch worked on revising the ISO/CIE CD TR 21783 Light and lighting – Integrative lighting – non-visual effects document. This document is in the final publishing stages as ISO CS.

10.2.5 JWG 5 (Lighting of Workplaces)

J.A. Veitch is involved in JWG 5 (CIE JTC 15) which is working on revising ISO/CIE 8995-1 Lighting for workplaces. Progress is moving slowly at the moment but is expected to speed up by the summer.

10.2.6 Liaison Representatives

10.2.6.1 ISO/TC 163 to ISO/TC 274

T. Lau is liaison from ISO TC 163 to ISO TC 274. He presented a report on ISO/TC274 at the ISO/TC 163 virtual plenary meeting in September.

10.2.6.2 ISO/TC 274 to ISO/TC205/WG7

T. Lau was appointed liaison officer from ISO TC 274 to ISO TC 205/WG10 in September 2020. C. Sampson was previously serving as liaison officer from ISO TC 274 to ISO TC 205/WG7 until stepping down in May 2020 (no replacement yet).

10.2.7 Outstanding ballots/comments needing discussion

There were no outstanding ballots/comments needing discussion.

10.3 SCC Matters

10.3.1.1 MC Administration

There was no discussion regarding MC Administration.

10.3.1.2 MC Accreditation & Financial Assistance

In January 2020 J.A. Veitch completed the annual application for Committee Accreditation and Financial Assistance for the fiscal year 2020-21. The application was successful in part thanks to external stakeholder support from BC Hydro and CSA.

10.3.1.3 MC Membership & Balance

There was no discussion regarding MC Membership & Balance.

11. Ad hoc Subcommittees

A motion for creating an Ad hoc Subcommittee for the online lighting course was proposed by J. Hovis. This motion passed without opposition. This Ad hoc subcommittee will consist of J. Hovis, L. Whitehead and D. Gottesman as members.

11.1 Website Subcommittee:

S.M. McFadden continues to manage the website. J.A. Veitch noted that a summer student from NRC metrology was able to participate in the light and lighting in Canada project. S.M. McFadden noted that information about CIE meetings was being posted on the member's area of the website.

11.2 Events Subcommittee:

There were no events hosted this year. J. Hovis discussed setting up an online lecture for the International Day of Lighting.

11.3 Light Course Update

J. Hovis mentioned that during a previous BoA meeting the need to create an online course to describe the fundamental concepts related to the science of light and vision to provide better understanding of these principles (2-year timeline for completion). D. Gottesman and L. Whitehead mentioned the importance of knowing the target audience of the course and the need to tailor the course for audience. J.A Veitch mentioned that a 2-year timeline to complete the course may be too long and that being ready to launch it in a year might be better (J. Hovis agreed).

12. Other Business:

12.1 AIC midterm Toronto, June 13th to June 16th, 2022

J. Hovis spoke with an individual involved in the organization of the AIC midterm about CIE participation. The meeting will be held at the Ontario College of Art and Design in Toronto. There will be keynote lectures open to the public and the organizers are looking for scientific and program committees, moderators, panel presentations, etc. J. Hovis mentioned that CIE participation could include providing scientific reviewers for abstracts, moderators, hosting a session during the meeting or sponsoring one of the talks. J. Hovis proposed creating another Ad hoc Subcommittee for determining the level of support the CIE would provide. J.A. Veitch stated that this event could be handled by the existing events subcommittee. J. Hovis stated that the events subcommittee could be involved in the preliminary discussions with AIC about the level of involvement in the event. J. Hovis will send contact information to V. Venkaramanan for coordinating activities between the CIE and AIC.

12.2 Correspondence

There was no discussion about correspondence.

12.3 Date and Place for next year's meeting

It has not yet been determined where next year's meeting will be held. Traditionally it would be a joint meeting with the US-CIE but with the COVID-19 pandemic ongoing that might not be possible. J. Hovis will send an email to the US-CIE asking if they would be willing to host.

13. Any other business

J. Hovis brought up the issue of whether or not to charge CNC-CIE members for the best CIE publication that was voted on by members earlier. J.A. Veitch supported the idea of providing the publication for free for members but not for affiliates. There was discussion about how the affiliates would pay for the publication, the following possibilities were discussed: (1) having the publication be available for sale during the meeting and (2) e-transfer or PayPal (when the bank signing authority is corrected). The idea of setting up a direct deposit with the Secretariat account was also discussed. It was agreed that when the document becomes available that the BoA will hold a meeting and decide on how to distribute the publication outside of the membership. J. Hovis mentioned that T. Nilsson has a proposal for a new photometric unit based on sensor receptive field and would like help to bring it to the CIE as a potential new unit for light measurement. This would be done by proposal to Division directors, those interested are advised to contact him or J. Hovis directly.

13.1 Adjournment

J. Hovis adjourned the meeting at approximately 14:12 and thanked those in attendance for their participation.



International Commission on Illumination
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Canadian National Committee Comité national canadien

Amin Rasoulof

Secretary, Canadian National Committee of the CIE

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

CNC/CIE 65th Annual General Meeting

Proposed Agenda

DATE: Friday, Dec. 11, 2020

TIME: 10:00 to 14:00 EST [7:00 – 11:00 PST]

LOCATION: Zoom (link provided to meeting registrants)

RSVP: A. Rasoulof
Administrator, CNC/CIE
Tel: 613-993-6450
Email: CNC-CIE-Secretariat@nrc-cnrc.gc.ca

<http://www.cnc-cie.ca/>



Amin Rasoulof

Secretary, Canadian National Committee of the CIE

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

LIST OF APPENDICES

APPENDIX A:	Agenda for the 65 th CNC/CIE Annual Meeting
APPENDIX B:	Attendees to the 65 th CNC/CIE Annual Meeting
APPENDIX C:	Action Items from the 65 th CNC/CIE Annual Meeting
APPENDIX D:	President's Report
APPENDIX E:	Vice-President's Report
APPENDIX F:	Secretary's Report
APPENDIX G:	Treasurer's Report
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APPENDIX I:	CNC/CIE Membership Subcommittee Report

Division Member Reports



CNC/CIE 65th Annual Meeting

2020-Dec-11

Agenda

- | | |
|--|-----------------------------|
| 1. Call to Order and Approval of Agenda | J. Hovis |
| 2. Minutes of the 64th Annual CNC/CIE meeting | J. Hovis |
| 2.1. Action items | |
| 2.1.1 Recruit a bilingual candidate for the Website Subcommittee (all) | |
| 2.1.2 Recruit a Chair of Events Subcommittee to replace temporary Chair V. Venktaramanan (All) | |
| 2.1.3 Develop a system for disseminating a call for experts and press releases to relevant groups that are interested in the activity of the CNC-CIE (J.A. Veitch and A. Ghaemi) | |
| 2.2. Matters arising | |
| 3. President's report | J. Hovis |
| 4. Vice-President's report | J. A. Veitch |
| 5. Secretary's report | A. Rasoulof |
| 6. Financial Report | S. Coyle |
| 7. Reports from Division Members | |
| Division 1: Vision and Colour | J. Hovis |
| Division 2: Physical Measurement of Light and Radiation | J. C. Zwinkels |
| Division 3: Interior Environment and Lighting Design | J. A. Veitch |
| Division 4: Transportation and Exterior Applications | C. Suvagau |
| Division 6: Photobiology and Photochemistry | S. Qutob |
| Division 8: Image Technology | T. Akhavan |
| 8. Membership and Elections | |
| 8.1. Membership and Elections Subcommittees | M. Mossman |
| 8.2. M & E Subcommittee Membership | M. Mossman |
| 9. NRC Annual Performance Review of the CNC/CIE | J. Hovis/J.A. Veitch |
| 10. Mirror committee to ISO/TC 274 | J. A. Veitch |
| 10.1. Chair's report | J.A. Veitch |
| 10.2. ISO TC 274 Business | |
| 10.2.1. Chair Advisory Group | S. McFadden & T. Lau |
| 10.2.2. JWG 1 (Energy Requirements for Lighting in Buildings) | T. Lau |
| 10.2.3. WG 2 (Commissioning) | T. Lau |
| 10.2.4. JWG 4 (Integrative Lighting) | J. A. Veitch |
| 10.2.5. JWG 5 (Lighting of Workplaces) | J. A. Veitch |
| 10.2.6. Liaison Representatives | |
| 10.2.6.1. ISO/TC 163 to ISO/TC 274 | T. Lau |
| 10.2.6.2. ISO/TC 274 to ISO/TC205/WG7 | [C. Sampson until May 2020] |
| 10.2.7. Outstanding ballots/comments needing discussion | |
| 10.3. SCC Matters | J. A. Veitch |
| 10.3.1.1. MC Administration | |

10.3.1.2. MC Accreditation & Financial Assistance

10.3.1.3. MC Membership & Balance

11. Ad hoc Subcommittees

11.1. Website Subcommittee J. A. Veitch

11.2. Events Subcommittee J. Hovis

11.3. Light Course Update

12. Other Business J. Hovis

12.1. AIC midterm Toronto, June 13th to 16th, 2022

12.2. Correspondence

12.3. Date and Place for next year's meeting

13. Any other business

13.1. Adjournment J. Hovis

APPENDIX B
CNC/CIE 65th Annual Meeting
Attendees

Name	CNC/CIE Affiliation	Other Affiliation
Venkat Venkataramanan	Board of Administration	U of Toronto
Jennifer Veitch	Vice-President, Division 3 Rep.	NRC-Construction
Amin Rasoulof	Secretary	NRC-MSS
Shirley Coyle	Board of Administration	Cree Lighting
Sharon McFadden	Board of Administration, Division 1 Rep.	Retired
Deborah Gottesman	Member	Independent Consultant
Cristian Suvagau	Board of Administration, Division 4 Rep.	B.C. Hydro
Lorne Whitehead	Board of Administration	U of British Columbia
Michele Mossman	Board of Administration	U of British Columbia
Jeffery Hovis	President	University of Waterloo
Harold Murray	Member	Independent Consultant
Pierre Gallant	Member	Natural Resources Canada
Lynn Asselin	Affiliate	Holophane (Acuity Controls)
Mackenzie Glaholt	Affiliate	DRDC
Sami Qutob	Board of Administration, Division 6 Rep.	Health Canada
Andrew Silbiger	Member	Andrew Silbiger Management Inc.
Keith Niall	Member	-
Joanne Zwinkels	Board of Administration, Division 2 Rep.	NRC-MSS
Eric Ladouceur	Affiliate	Cyclone Lighting
Arnold Gaertner	Board of Administration	NRC-MSS
Mankajee Shrestha	Member	-

APPENDIX C

Action Items from the 65th Annual Meeting of the CNC/CIE

Action Item	Responsible	Action	Status
2020-AI-1	All	Recruit a bilingual candidate for the Website Subcommittee	OPEN
2020-AI-2	J.A. Veitch	Develop a system for disseminating a call for experts and press releases to relevant groups that are interested in the activity of the CNC-CIE.	OPEN
2020-AI-3	All	Recruit Canadian organizations and individuals involved in the light and lighting community for the purposes of expanding the affiliates list and the outreach of CNC-CIE activity.	OPEN
2020-AI-4	V. Venktaramanan and C. Suvagau	V.Venktaramanan and C. Suvagau will get in touch with contacts in Western Canada about joining the CIE with the intention of improving geographic representation.	OPEN

APPENDIX D

CNC/CIE President's Report December 2020

Jeff Hovis (jhovis@uwaterloo.ca)

It has been an interesting year as we adapted the new ways to connect with others from the old home office.

This year saw in-person conferences and meetings canceled, but many were rescheduled as a web conference once it was clear that the pandemic would be around for a while.

The Board of Administration met about every 6 weeks this past year. We will try to continue this practice for the upcoming year. If an issue comes up that you think needs to be discussed by the Board, you may bring it to either my or Amin Rasoulof's attention, and we will add it to the agenda for the next Board meeting.

The Board of Administration had a web conference with the CIE president Dr. Blattner. There was an overview of the central bureau operations and an introduction to the people working there. The discussion centered on increasing interactions/cooperation with other national committees and organizations (i.e., IES), raising the CIE profile nationally and internationally. He suggested that we should talk to other Francophone committees about assistance with translations into French. He also mentioned that the National Committees receive an 80% discount on the CIE publications for use in the committee's library.

Very recently, the Central Bureau will be offering a free copy of a "best of the CIE" publication to be distributed to National Committee members. The Division Directors, Vice President Technical and Vice President Publications will select 6 recent publications and the National Committees (NC) will vote for one. The one that receives the most votes, the NCs will be given to the NC to distribute to its members. We have the option to charge a fee, which will be discussed on other business.

I had a web conference with Ms Terrie Romano from International Relations at the National Research Council. This meeting was an introduction to what our organization does.

I understand that there is a major report/audit coming up soon, but I haven't received any specific information.

Michelle Mossman completed a membership survey this summer. Besides updating contact information, the survey also asked which division(s) align with the member's interests. If you are a Division or a Technical Committee member and need assistance with reviewing reports and proposed standards, contact Michelle or Amin for a list of possible reviewers.

I met with Doreen Balabanoff from the Colour Research Society of Canada. They are sponsoring an AIC midterm meeting and colour conference in Toronto from June 13th to 16th, 2022. We discussed some possible ways that the CNC-CIE could become involved if we want to do so. The program will be broad, with topics covering both the science and art of colour. This will be discussed in more detail later in the meeting.

The Board discussed the possibility of creating an online course/tutorial on the basic principles of light and illumination. The objective is to describe fundamental concepts related to the science of light for vision and well-being so that individuals from various professions who work in this area would have a better understanding of these basic principles. A number of people volunteered to help out. This will be discussed in more detail later in the meeting.

Finally, I thank everyone for their help, participation, and ideas this year. I also want to state that on behalf of the CN-CIE, we hope that everyone continues to stay safe and healthy.

APPENDIX E

CNC/CIE Vice-President's Report

November 2020

Jennifer A. Veitch, Ph.D. (j_a_veitch@jdarchitect.ca / jennifer.veitch@nrc-cnrc.gc.ca)

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

1. I co-ordinated with the leadership at NRC Metrology to finalize the appointments of the CNC/CIE President, Vice-President, Secretary and Treasurer for the 2019-2023 term.
2. I assisted with the transition from our former Administrator, Ali Ghaemi to our new Secretary, Dr. Amin Rasoulof.
3. I assisted as needed to support the President, Secretary, and Treasurer in the ongoing work of CNC/CIE business.
4. I served as Chair of the Canadian mirror committee to ISO-TC 274. Details of this committee's work will be discussed during this meeting under MC-ISO-TC 274 business.
5. I contributed to the preparation of input to the annual performance report (APR) to the NRC Government and International Affiliations Office (NRC-GIA), which was led by the President.



APPENDIX F

CNC/CIE Secretary's Report

December 2020

Amin Rasoulof (CNC-CIE-Secretariat@nrc-cnrc.gc.ca)

I have been the NC/CIE Secretary since January 2020 and have undertaken several tasks

1- Communications

- a. CIE notifications, announcements and Press Releases were distributed by the CIE-CB to the NC's via email with supporting documents available on the CIE website (www.cie.co.at) using the new Collaboration Tools website. These documents were downloaded and made available on the CNC/CIE website. 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 or the Board of Administration as required.
- b. 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.

2- Letter Ballots

- a. CIE Ballots: National Committee Letter Ballots circulated by the CIE Central Bureau were distributed to members for voting. Decisions were taken based on the consensus of those voting, as per the CNC/CIE Code of Procedure. Letter ballots for 2019/20 were
 - i. LB NC1907 Test methods for OLED luminaires and OLED light sources: Approved
 - ii. LB NC1908 NC Approval of CIE Budget FY 2020: Approved
 - iii. LB NC1909 NC Ballot on CIE FDIS 017:2019: Approved
 - iv. LB NC1910 - Re-admission of AIDI as the CIE National Committee of Italy
 - v. LB NC2001 on ISO/CIE DIS 11664-2:2020 : Not approved
 - vi. LB NC2002 Approval of the change in dates and venue for CIE 2021: Approved
 - vii. LB NC2003 Approval of the appointment of Mr. Oliver Thissen as CIE Treasurer: Approved

- 3- **Annual Performance Review of the CNC/CIE:** This was led by the President this year, as it was undertaken by a telephone interview with the NRC Government and International Affiliations office. Jennifer Veitch contributed information to a supporting document.

- 4- **Requests for Funding:** None received.

- 5- **CNC/CIE website:** The website operates at the web address of www.cnc-cie.ca. See the separate Website subcommittee report.

- 6- **Mailing Lists:** At the present time 4 mailing lists are maintained: Members (37), Affiliates (80), Board of Administration (13) and All (117). Affiliates and all receive CIE material (press releases of CIE publications) and notices of conferences. Members and Board of Administration receive more CNC information including ballots, and the Minutes of the annual meeting and related information.

APPENDIX G

CNC/CIE Treasurer's Report

December 11, 2020

Shirley Coyle (scoyle@creelighting.com)

The financial statement for the period 31 October 2019 to 31 October 2020 is presented below.

Financial Report 31 October 2019 – 30 October 2020

Balance (31 October 2019)	\$20,297.62
Income:	
Revenue from Joint CNC/CIE and CORM meeting	\$35,694.08
<u>Payment from CIE for publication sales</u>	<u>\$644.84</u>
Total Income:	\$36,338.92
Expenses:	
Payment to CORM for joint meeting expenses & profit share	\$28,958.70
Payment for A/V expenses at joint meeting	\$1,165.50
<u>Web domain hosting</u>	<u>\$197.98</u>
Total Expenses:	\$30,322.18
Net Income (Loss):	\$6,016.74
Balance (30 October 2020)	\$26,314.36



APPENDIX H

CNC/CIE Web Site Report

November 2020

Sharon McFadden and Jennifer Veitch

1. Domain

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

2. Usage

Usage declined over the past year, which is perhaps understandable in the circumstances and with no events taking place. During the last 12 months we averaged 289 unique visits and 425 visits per month as compared to 407 unique visits and 2695 visits in 2019. About 10% of the visits or 71 per month lasted longer than 30 seconds. On average, 4 pages were viewed per visit. Canadians were the most frequent visitors with Americans a close second. Again, this year, Brazil was third.

We have established accounts for Members and have now begun to use the password-protected area to share documents that are out for review. Fifteen of our members logged into the members only area over the past year. Members can retrieve their usernames and passwords using the built-in retrieval facility, or may contact the Secretary for more information.

3. Content

- Sharon continues to upload press releases for new publications and provide direct access to free CIE publications on the website.
- As well as providing information on CIE events, Sharon posts notices about relevant national and international lighting events. Members are encouraged to send information on lighting events to have them put on the website.
- To support the CIE's efforts to provide accurate information on the proper use of light, especially UV light, Sharon highlighted the CIE Position Statements on the [use of UV light and to manage the risk of COVID-19 transmission](#) and [the non-visual effects of light](#).

We are still looking for someone to at least proof read the French content of the French web pages. Very little of the content is changed regularly so it is not an onerous job. If you could provide this assistance, contact the CNC/CIE Secretariat.

We encourage members to visit the website and offer suggestions for improvements and additions.

History of Lighting in Canada

Some progress was made on the project this year, when a summer student updated some of the biographical material and interviewed one past member. However, there is much still to do! If you have an interest, or if you know someone who does, we do have lots of material that could be compiled. It would be an interesting student project.

4. Maintenance

The cost for the domain registration, site hosting, and maintenance remains low, at ~\$100 per year. I recommend we keep our current arrangement, which seems to be working well.



APPENDIX I

CNC/CIE Membership Subcommittee Report

December 2020

Michele Mossman (mmossman@mail.ubc.ca)

Current CNC/CIE Membership

The current membership includes:

- 13 Members of the CNC/CIE Board of Administration
- 37 Members (includes the 13 Members of the Board of Administration)
- 80 Affiliates

The current CNC/CIE Board of Administration Members are:

<u>Member name</u> <u>expires</u>	<u>Board of Administration role</u>	<u>Term</u>
Jeffery Hovis	President and Division 1 member	2023
Jennifer Veitch	Vice President and Division 3 member	2023
Amin Rasoulof	Secretary	2023
Shirley Coyle	Treasurer	2023
Joanne Zwinkels	Division 2 member	2023
Cristian Suvagau	Division 4 member	2023
Sami Qutob	Division 6 member	2023
Tara Akhavan	Division 8 member	2022
Arnold Gaertner	Member at Large	2023
André Laperrière	Member at Large	2023
Michele Mossman	Member at Large	2020
Venkat Venkataramanan	Member at Large	2023
Lorne Whitehead	ex-officio, CIE Vice President	2023

Geographic representation: The CIE/CNC aims to have as diverse geographic representation as possible. Currently, the geographic representation of the 37 CNC/CIE Members is: British Columbia (7), Newfoundland (1), Ontario (23), Prince Edward Island (1), and Quebec (5).

Changes to membership

Five individuals have chosen to step down from their role as CNC Member at the end of 2020: Martin Aitkenhead, Frank Lin, Harold Murray, Guy Newsham, and Robert White. On behalf of the CNC/CIE, the Executive committee would like to express their great appreciation to Martin, Frank, Harold, Guy, and Robert for the many valuable contributions they have made to the CIE during their tenure as CNC/CIE members.

Two Affiliates asked to be removed from the list during 2020 because of relocation or retirement, and fourteen individuals joined as new Affiliates.

Other membership-related activities during 2020

We conducted a survey of members to identify which CIE Divisions align with their areas of interest, so that we can make sure they are informed about opportunities to participate in technical activities associated with specific Divisions. Of the 117 people contact, 63 (or 54%) responded to the survey.

Membership nominations for 2021:

Board of Administration:

- Michele Mossman is willing to renew for another 4-year term as BA Member at Large.

Members:

- Kristin Poduska is willing to renew for another 4-year term as Member.
- Andrew Silbiger is willing to renew for another 4-year term as Member.
- Pordis Hardardottir is willing to be nominated for a 4-year as Member.
- Lucas Tang is willing to be nominated for a 4-year as Member.

Brief biographies for each nominee follow on pages 3-8 of this report.

BIOGRAPHIES FOR MEMBER NOMINEES

Pordis Hardardottir

Pordis Hardardottir is a Lighting Designer in WSP's Vancouver Electrical office. Having worked on lighting projects and installations since 2004, she is highly motivated in the application of sustainable design solutions. Providing services to a range of projects for verification of high efficiency building standards such as BREEAM, BEAM PLUS and LEED which include education, health care, offices, urban areas, commercial and service buildings, project range also includes hospitality and private sector.

With a background in the creative field and two of her projects winning awards in the Nordic Lighting Awards 2012 and 2015, she has led successful projects in collaboration with globally renowned brands, designers, architects and project teams.

EDUCATION

Architectural Lighting Design Master Class, KTH Stockholm, Sweden – Msc ALD 2009

Industrial Design, Ontario College of Art & Design, Toronto, Canada – AOCAD ID 2001

AWARDS

Icelandic Lighting Awards – Bridge by Fífuhvamsvegur	2015
Nordlys – Harpa Conference Centre & Car Parking Facility	2012

PROFESSIONAL ASSOCIATIONS

Committee of Illumination, Participant of Division 3	CIE
Professional Member of the Association of International Architectural Lighting Designers	IALD

Michele Mossman

Michele Mossman is a Research Associate in the Department of Physics and Astronomy at the University of British Columbia, and the Laboratory Manager for the UBC Sustainability Solutions Applied Physics Laboratory. In this role, she has managed and participated in a range of applied optics research projects, specifically related to technology development in the fields of electronic image displays and illuminating engineering.

POST-SECONDARY EDUCATION

Acadia University	B.Sc.H.	Physics	1995
University of British Columbia	M.Sc.	Physics	1997
University of British Columbia	Ph.D.	Physics	2002
University of British Columbia	M.B.A.	Entrepreneurship	2014

SPECIAL PROFESSIONAL QUALIFICATIONS

P.Eng. Engineers and Geoscientists BC	Engineering Physics	2012
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Kristin Poduska

Kris Poduska is an experimental condensed matter physicist based at Memorial University of Newfoundland, where she is Professor and Head of the Department of Physics & Physical Oceanography. Originally from the United States, Dr. Poduska holds an undergraduate degree in physics from Carleton College (Northfield, Minnesota, USA), and a Ph.D. in physics from Cornell University. Her research is a blend between physics and chemistry, focusing on understanding structural and physical property relations in inorganic materials. The applications of the work span from technologically relevant semiconductors, to medically interesting biomaterials, to ancient archaeological materials. Her research has been funded through many different NSERC programs including Discovery, Research Tools & Instruments, Interaction, Engage, and Collaborative Research and Development grants. This includes collaborative grants with Lumentra, Inc related to phosphor development for solid-state lighting applications. Dr. Poduska is a past recipient of a Petro Canada Young Innovator Award, and has been a visiting scientist at the Weizmann Institute of Science (Israel). She has both supervised and taught students with backgrounds in physics, chemistry, engineering and archaeology spanning from high-school age to the post-doctoral level.

Dr. Poduska is a section chair for NSERC Evaluation Group 1505 (Physics), an Executive Committee Member-at-large for Canadian Section of the Electrochemical Society, a member of Editorial Board of the

Journal of Materials Science: Materials in Electronics, and a member of the Science Atlantic committee for physics. Dr. Poduska is also active in teaching and promoting science. She has both participated in and helped to organize the Canadian Association of Physicists Congress Teaching Workshop, has given interviews for CBC radio's Quirks and Quarks as well as BBC radio's Naked Scientists, and has been involved with Women in Science and Engineering. Dr. Poduska also served as a mentor for a student-led initiative in scientific entrepreneurship at Memorial University, MUNtech.

Andrew Silbiger L.C., C.E.T.

PROJECT EXPERIENCE

Andrew retired in 1996 from his position as Head of Electrical Engineering in the Central Region of the Ministry of Transportation of Ontario (MTO), a position that he had held for nine years.

Prior to coming to Canada in 1968, Andrew worked as a Lighting Engineer after having completed a five-year engineering apprenticeship with Thorn Electrical Industries in England. Upon his arrival in Canada, Andrew worked for two years with consulting firms on various Institutional and Commercial projects.

In 1970, he joined the Ministry of Transportation of Ontario as a Senior Electrical Designer. After seven years he was promoted to a management position having the responsibility for electrical design work throughout the Province.

During his 26 years with the Ontario Government, Andrew has worked on various Policy and Procedure Committees within the MTO, including the Electrical Specialty Committee of the Ontario Provincial Standards.

Since leaving the Ontario Government Andrew has worked as a Senior Electrical Designer and Project Manager with a number of Consulting Engineering companies in Toronto.

Andrew is a past chair of the Roadway Lighting Committee (RLC) of the Illuminating Engineering Society of North America. He has focused his attention on Education, Research, Measurement and Calculation, Standard Practice and Maintenance. He has involved himself in the education side of the Toronto Chapter of the IES and has taught a segment of ED-100 and a portion of the Roadway Lighting Course. He is also an active member of the CSA Technical Committee on Lighting and is vice chair of C419. He was recently awarded the CSA Award of Merit.

PROFESSIONAL BACKGROUND

1997 – Present

Various Consulting Engineering Companies
Project Manager/Senior Electrical Design

1970 – 1996

Ministry of Transportation – Ontario

1968 – 1970

Various Consulting Engineering Companies
Senior Electrical Designer

1965 – 1968

Thorn Electrical Industries, U.K.
Lighting Engineer

1960 – 1965

Engineering Apprentice

EDUCATION

1998

Lighting Certified – National Council on Qualifications for the Lighting Professions

1967

Advanced Lighting – England

1967

Full Technological Certificate in Illuminating Engineering, Lighting Technique

PROFESSIONAL ASSOCIATIONS

Ontario Association of Certified Engineering Technicians and Technologists (OACETT)

Member, Illuminating Engineering Society of North America (IESNA)

Advisory Member - Canadian National Committee of the Commission Internationale De L'Éclairage (CIE)

Chair – Lighting Committee #C653 of the Canadian Standards Association (CSA) International

Chair – Lighting Committee # C811 of the Canadian Standards Association (CSA) International

Vice Chair – Lighting Technical Committee # C419 of the Canadian Standards Association (CSA) International

Member - Steering Committee of the Centre for Lighting Research and Design of Ryerson Polytechnic University

Member - International Municipal Signal Association (IMSA)

Lucas Tang

Lucas Tang has a Mechanical Engineering background at the University of Waterloo. He has been working in optics since 2016 when he worked at Apple for iPhone Design. Since then, he has started a company Lumos Health, researching photobiology with Dr. Jamie Zeitzer from Stanford Sleep Sciences and Medicine. Some of his work involves designing optical coatings, designing light therapy glasses for photobiological effect, researching photobiological safety of blue light, spectral distribution of the sky, optical simulations, and photoluminescence.

**MC-ISO-TC 274 Chair's Report
November 26, 2020**

Jennifer A. Veitch, Ph.D.

j_a_veitch@jdarchitect.ca / jennifer.veitch@nrc-cnrc.gc.ca

A. Membership

Chair: Jennifer Veitch
Vice-Chair: Jeff Hovis
Members: Ian Ashdown
Shirley Coyle
Chad Greene
André Laperriere
Toby Lau
Lisa Mak
Sharon McFadden
Sami Qutob
Conor Sampson
Cristian Suvagau
Venkat Venkataramanan

As I said last year, I would like to see us recruit additional members, particularly from the Consumer and Public Interest and Government and Authorities Having Jurisdiction categories, to provide a better balance in those areas. Academic/Research and Industry categories are in reasonable balance. Any Canadian is welcome to join, but especially anyone already affiliated with the CNC/CIE. It does require a separate application to the SCC, which can be done here: <https://www.scc.ca/en/standards/committees/iso-tc-274-light-and-lighting>.

B. Activities

1. Ballots

I cast (or will have cast by the Dec. 11 meeting) ballots and/or comments on behalf of the committee on 16 ballots (see Annex for the full report), following discussions by e-mail with committee members or through the SCC Hub. We were a day or two late (mostly when due dates fell on a weekend day), but responded to all ballots. The number of ballots was approximately steady (16 compared to 13 last year).

I thank the committee members for their participation, particularly through the new SCC Hub. This demonstration of our activity is among the measures of our evaluation by SCC.

2. ISO/TC 274 Plenary meeting

This year's meeting was to have been held in Oxford, UK. We had previously decided to appoint Toby Lau as our Head of Delegation to that meeting. Of course, the meeting was changed to an online format, but Toby remained our Head of Delegation and attended on our behalf. The resolutions from the meeting were later decided by letter ballot (see Annex).

If the 2021 plenary meeting takes place in person, it will be in Oxford, UK. However, that is subject to the ISO directives and the state of the pandemic. (As of this writing, in-person meetings are suspended until 2021-02-28.)

Decision to be taken: Who will represent Canada as our Head of Delegation at the 2021 plenary meeting?

3. Contributions to ISO/TC 274

We have strong participation in the parent committee in ISO, although additional volunteer experts are always welcome:

<i>Current Activities</i>			<i>Comment</i>
ISO/TC 274 CAG	Chair Advisory Group	T. Lau, S.McFadden	
ISO/TC 274-JWG 1 [CIE JTC 6 (CIE-ISO)]	Energy performance of lighting in buildings	T. Lau	In addition to the project on the line below, this group also is working on ISO/CIE AWI 10916, <i>Calculation of the impact of daylight utilization on the net and final energy demand for lighting</i>
	ISO/CIE AWI TR 3092 <i>Light and lighting – Energy performance of lighting in buildings – Explanation and justification of ISO/CIE 20086</i>	T. Lau – Project leader	Currently in preparation, stage 10.99
ISO/TC 274 WG 2	Commissioning process of lighting systems	T. Lau	ISO/TC 274 has decided to start a new project (ISO/AWI TR 5911) for developing an ISO Technical Report to supplement ISO/TS 21274 .
ISO/TC 274 JWG 4 [CIE JTC 14 (CIE-ISO)]	Integrative lighting	J. Veitch	Contributed to writing ISO/CIE CD TR 21783 <i>Light and lighting - Integrative lighting - Non-visual effects</i> . Document is in final publishing stage at ISO CS.
ISO/TC 274 JWG 5 [CIE JTC 15 (CIE-ISO)]	Lighting for workplaces	J. Veitch	Project to revise ISO/CIE 8995-1 is not yet registered. Participating in meetings and proposing new text.
ISO/TC 163	Liaison officer from ISO TC 163 to ISO TC 274	T. Lau	Presented a report on ISO/TC274 at the ISO/TC 163 virtual plenary meeting in September. The Liaison report is available from the Chair.
ISO/TC 205/WG 10 [Commissioning]	Liaison officer from ISO TC 274 to ISO TC 205/WG10	T. Lau	Newly appointed in Sept. 2020.
<i>Concluded in past year</i>			
ISO /TC 274	Liaison officer from ISO TC 274 to ISO TC 205/WG 7	C. Sampson (until May 2020)	

C. Relations between the CNC/CIE and SCC:

1. Mirror committee accreditation and funding

In January 2020, on our behalf, I completed our annual Application for Committee Accreditation and Financial Assistance for the fiscal year 2020-21. We were successful, in part thanks to our external stakeholder support from BC Hydro and CSA. At the start of the fiscal year, our total funds available this year to support our work by assisting delegates to travel to meetings was \$12,000. Of course, the year has not followed the expected pattern and there have been no in-person meetings. Externally received funds will be retained for use in a future year (currently, there is \$3000 to our credit). These may be matched by SCC in a future year, subject to future approval by the SCC.

The next report and funding application is due in early January 2021.

2. Registration of CNC/CIE as a Standards Administering Organization

The CNC/CIE had applied in 2019 to the SCC for recognition as a Standards Administering Organization. This would be advantageous because it would confirm the Secretariat of the CNC/CIE as the administering entity overseeing the MC and would confirm our Code of Procedure terms that govern such matters as the selection of the Chair and Vice-Chair of the mirror committee.

The application requires modification, which continues to be held up at my end because of other duties. However, one of the modifications concerned the need for an internal archiving system that members could query in case of interest. We now have server space on an NRC server (DocZone) for the CNC/CIE, accessible to me and to the CNC/CIE Secretary. This should facilitate resolving this matter, and I hope to resubmit the application in the coming months.

D. Other organizations in liaison

We have an informal liaison with CSA C419, with several members in common. Through the work of Toby Lau, some of the CSA work on energy efficiency is receiving favourable attention in ISO/TC 274/JWG 1, and this is welcomed by CSA.

E. Upcoming actions and issues

The SCC moved in the past year to its new online platform, SCC Hub. Unfortunately it is not easier to use than the former one. It does require some careful attention to track the status of ballots and due dates, so members please do watch carefully on the e-mail notices you receive. We and other MCs have provided feedback to SCC, but it appears that there is not very much flexibility available because it is a licenced platform and not a custom-built tool.

Annex – Record of MC-ISO-TC274 Voting since 2019-10-31

Item #	Title	Circulated	SCC due date	Questions	Vote
N0642	Draft Resolution 116/2020 (Reappointment of ISO/TC 274/JWG 4 Convenor) ISO/TC 274 agrees to reappoint Mr Peter Dehoff as Convenor for ISO/TC 274 /JWG 4 "Integrative lighting (joint working group with CIE-JTC 14)" for one year starting 2021-01-01. Draft...	2020-11-24	2020-12-06		
N0641	Draft Resolution 115/2020 (Appointment of ISO/TC 274/JWG 1 Co-Convenor) ISO/TC 274 agrees to the appoint Dr. Laura Bellia as Co- Convenor for ISO/TC 274 /JWG 1 "Energy performance of lighting in buildings (joint working group with CIE-JTC 6)" from CI...	2020-11-24	2020-12-06	1 Do you agree with Draft Resolution 115/2020 to appoint Dr Laura Bellia as ISO/TC 274/JWG 1 Co-Convenor? Yes No (comment required) * Abstention	
N0634	Liaisons to Working Groups of ISO/TC 205 – Confirmations and Call for Representative	2020-10-07	2020-11-03	1Do you agree to appoint Mr. Sohél Moghtader as liaison representative to ISO/TC 205/WG 1? (Draft Resolution 113) 2Do you wish to nominate another liaison representative to ISO/TC 205/WG 1? 3Do you agree to appoint Mr. Toby Lau as liaison representative to ISO/TC 205/WG 10? (Draft Resolution 114) 4Do you wish to nominate another liaison representative to ISO/TC 205/WG 10? 5Do you wish to nominate a liaison representative to ISO/TC 205/WG 2?	1 Yes 2 No 3 Yes 4 No 5 No
N0631	Internal ballot on ISO/NP 5505 Dentistry - Lighting - Principles of visual ergonomics (ISO/TC 106/SC 6 N 0699)	2020-10-13	2020-10-31	Do you have comments on ISO/NP 5505 "Dentistry — Lighting — Principles of visual ergonomics"? Yes (Please use the ISO commenting template) No	Yes, comments provided
	Call for liaison ISO/TC 274 to ISO/TC 159/SC 4/WG 3	2020-08-13	2020-09-19	Do you want to nominate a ISO/TC 274 liaison representative to ISO/TC 159/SC 4/WG 3?	No
	Call for liaison ISO/TC 274 to ISO/TC 159/SC 5	2020-08-13	2020-09-19	Do you want to nominate a ISO/TC 274 liaison representative to ISO/TC 159/SC 5?	No
	Call for liaison ISO/TC 274 to ISO/TC 205/WG7	2020-08-13	2020-09-19	Do you want to nominate a ISO/TC 274 liaison representative to ISO/TC 205/WG 7?	No

Item #	Title	Circulated	SCC due date	Questions	Vote
N0612 N0613	Approval of Draft Resolutions of the ISO/TC 274 plenary meeting on 2020-06-11—12, virtual	2020-06-17	2020-07-05	<p>Do you approve Draft Resolution 100 on the Liaison to ISO/TC 159/SC 5?</p> <p>Do you approve Draft Resolution 101 on the Liaison to ISO/TC 59/SC 13?</p> <p>Do you approve Draft Resolution 102 on the Future of possible project "Life Cycle Cost"?</p> <p>Do you approve Draft Resolution 103 on the Terms and Definitions for internal communication in ISO/TC 274?</p> <p>Do you approve Draft Resolution 104 on the Cooperation with ISO/TC 163 and ISO/TC 205?</p> <p>Do you approve Draft Resolution 105 on the Liaison representative to ISO/TC 205/WG 7?</p> <p>Do you approve Draft Resolution 106 on the Participation in IEC/SEG 9?</p> <p>Do you approve Draft Resolution 107 concerning the Convenor of JWG 1 2021-2023?</p> <p>Do you approve Draft Resolution 108 on the Appointment of Interim Convenor for ISO/TC 274/JWG 4?</p> <p>Do you approve Draft Resolution 109 on the Revision of the Strategic Business Plan?</p> <p>Do you approve Draft Resolution 110 on the Requirements concerning 9th meeting (2021)?</p> <p>Do you approve Draft Resolution 111 on the ISO/TR to supplement ISO/TS 21274?</p> <p>Do you approve Draft Resolution 112 on the Liaison representative to ISO/TC 159/SC 4/WG 3?</p>	Yes to all

Item #	Title	Circulated	SCC due date	Questions	Vote
N0572	NP Ballot : ISO/CIE PWI 10916 Calculation of the impact of daylight utilization on the net and final energy demand for lighting [New project in ISO/TC274/JWG1]	2020-03-31	2020-06-08	<p>1a. Do you approve, disapprove or abstain on this NWIP? Approve Disapprove * Abstain due to lack of consensus Abstain due to lack of national expert input Please also select from one of the following options (note that if no option is selected, the default will be the first option):</p> <p>Draft document can be registered as a Working Draft (WD - stage 20.00) Draft document can be registered as a Committee Draft (CD - stage 30.00) Draft document can be registered as a Draft International Standard (DIS - stage 40.00)</p> <p>In case of disapproval, do you believe that further study and consultations are needed first among committee members on this proposal as a preliminary work item before this proposal can be formally accepted? Yes No</p> <p>1b. Did you consult with the range of relevant stakeholders identified in the proposal in the development of this voting position and related comments? Yes No</p> <p>2. Standard(s), regulation(s), and other relevant documentation existing in our country, with any remarks concerning their application if necessary and consequences for global relevance, as well as copyright information on these documents, are attached: Yes (references provided below) * No</p> <p>3. Do you wish to add any additional comments? Yes * No</p> <p>4. We are committed to participating actively in the development of the project, at least by commenting on working drafts (P-members voting "Disapprove" in Qu. 1a may nevertheless nominate experts): Yes (and we nominate an expert below) * No</p> <p>(*) A Comment is required for this answer value</p>	<p>Approval Draft document will be registered as new project in the committee's work programme (stage 20.00) NA Yes No No No</p>

Item #	Title	Circulated	SCC due date	Questions	Vote
	Commenting on ISO DTR 9241-610 from ISO/TC159/SC4		2020-06-05	1 Do you have comments on ISO/TR 9241-610 (see N 593)? 2 Do you agree to submit the comment as proposed in ISO/TC 274 N 593 asking ISO/TC 159/SC 4 to not publish this technical report without further consultation with ISO/TC 274 and CIE?	Yes Yes
N-569	Internal Ballot for ISO/CIE/DTR 21783 Light and lighting - Integrative lighting - Non-visual effects	2020-03-16	2020-05-10	Do you approve the draft for publication?	Yes, with comments
N0564	Call for Project Leader and result of CAG "Life cycle Cost"	2020-03-09	2020-04-26	Do you wish to nominate an expert as candidate for a project leader for a potential project on "Life cycle cost"? (see N 564) Do you wish to nominate (further) expert(s) to work on a potential project on "Life cycle cost"? (see N 564)	No No
N0567	Call for experts for Task Force BIM in ISO/TC 274/JWG 1	2020-03-12	2020-04-25	Do you wish to nominate experts for the Task Force BIM in ISO/TC 274/JWG 1?	No
N0568	Commenting on ISO/CIE DIS 11664-2 "Colorimetry — Part 2: CIE standard illuminants"	2020-03-12	2020-04-11	Do you have comments to ISO/CIE DIS 11664-2 "Colorimetry — Part 2: CIE standard illuminants"? (see document N 568)	Yes - comments provided



Division 1: Vision and Colour

Report to CNC/CIE 65th Annual Meeting
National Research Council of Canada
1200 Montreal Road, Ottawa, Ontario K1A 0R6 Canada
Zoom Web Conference
Friday, Dec. 11, 2020
10:00 AM to 2:00 PM

Jeff Hovis
Email: jhovis@uwaterloo.ca

5. Introduction

The annual meeting was held Thursday, August 13, 2020 as a Webex online meeting. Twenty countries were represented at the meeting. Canada was represented by Jeff Hovis. The minutes can be found at the Members Section of the CNC-CIE website.

6. Highlights

a. New Technical Committees and Reporterships

TC 1-98: A Roadmap Toward Basing CIE Colorimetry on Cone Fundamentals. Chair: Lorne Whitehead

New TC proposal – not approved yet

Modelling two-dimensional colour appearance scales. Proposed by Ronnier Luo

New Reportship proposal. – not approved yet

Methods for assessing perceptual colour in high-dynamic-range (HDR) luminance conditions. Proposed by Jisoo Hwang

b. Division publications

The Proceedings of the 29th Session of the CIE, Volume 2

CIE 240:2020 Enhancement of Images for Colour-Deficient Observers. – TC1-89 (TCC: Po-Chieh Hung)

c. Future meetings

CIE Midterm Meeting. Sept 26, 2021 to Oct 2, 2021, Kuala Lumpur, MALAYSIA

30th CIE Session, Sept 15-23 2023 in Ljubljana, Slovenia,

7. Current Canadian participation in Division 1 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
TC 1-98	A Roadmap Toward Basing CIE Colorimetry on Cone Fundamentals	Chair: Lorne Whitehead
TC1-93	Visual Aspects of Time-Modulated Lighting Systems	Member: Lorne Whitehead
TC1-95	The Validity of the CIE Whiteness and Tint Equations	Member: Joanne Zwinkels
JTC 8 (All Divisions)	Terminology	Member: Sharon McFadden

8. Highlights of Division Work Programme

a. Overview of the status of TCs and Reporterships

i. Current Technical Committees

TC1.76 Unique Hue Data – Chair: Sophie Wuerger GB

- The TC report should be in the final set of corrections.

TC1-83 Visual Aspects of Time-modulated Lighting Systems: Chair: Malgorzata (Gosia) Perz NL

- Working draft is being reviewed by division editor. 1-year extension has been proposed

TC1-84 Definition of Visual Field for Conspicuity: Chair: Nana Itoh JP

- Working draft is now being revised. 1-year extension has been proposed

TC1-89 Enhancement of Images for Colour Defective Observers: Chair: Po-Chieh Hung US

- June 2020: TR was published as CIE 240: 2020.
- TC 1-89 was closed.

TC1.91 Methods for Evaluating the Colour Quality of White-Light Sources – Chair: Yandan Lin CN

- Hoping to send version to division editor by the end of the year

TC1.92 Skin Colour Database – Chair: Kaida Xiao GB

- Data collection completed. Prepare technical report next

TC1.95 The Validity of the CIE Whiteness and Tint Equations – Chair: Minchen Wei HK

- Still working on some chromatic adaptation issues associated with different white lights

TC1.96 A Comprehensive Model of Colour Vision – Chair: Ming Ronnier Luo GB/CN

- A draft technical report is being reviewed by committee members

TC1-97 Age- and Field-Size-Parameterised Calculation of Cone-Fundamental-Based Spectral Tristimulus Values: Chair: Jan Henrik Wold NO

A python version of the program is available

<https://github.com/ifarup/ciefunctions/releases/tag/v1.0.2>

- Final revisions on the MatLab version are being finished
- The method and format to publish an outcome other than TR is under discussion.
- The way of maintenance is needed to be discussed.
- TC 1-97 will be closed after officially releasing the tool.

JTC 8 Terminology – Chair: Peter Zwick, D1 Members: Sharon McFadden CA and Michael R. Pointer GB

- A draft TC reported was written and it is in the final correction by Peter Zwick

JTC10 (D8/D1) A New Colour Appearance Model for Colour Management Systems: CIECAM16 – Chair (D8) Changjun Li CN, D1 Co-chair MR Luo GB

- A report has been completed and now it is in the editing and formatting stages. Hopefully, it will be approved and published from CIE soon.

JTC12 (D2/D1/D8) The Measurement of Sparkle and Graininess – Chair (D2) A Ferrero ES, D1 cochair Y Kwak, KR

- Working on metrics for graininess and sparkles. A paper on methodologies has been submitted to a journal.

JTC 16 (D1/D8) Validity of Chromatic Adaptation – Chair (D1) Minchen Wei HK

- Analyzing data using different adaption models.

JTC17 (D1/D2/D8) Gloss measurement and gloss perception – A framework for the definition and standardization of visual cues to gloss. – Chair (Div 1): Frédéric Leloup BE

- Work has been delayed for number of reasons including COVID-19

ii. Current Reporterships

R1.60 Future colour difference-evaluation – Reporter: G Cui CN

- Although the reporter suggested to close the reportership, several Division 1 Members suggested to keep the reportership open.

R1.62 Typical LED Spectra – Reporter: Sophie Jost FR

- Division 1 Members suggested that a CIE Technical Note rather than a Reportership Report may be more useful since this topic is important for many applications and is of interest to both Division 1 and Division 8.

R 1.63 Tristimulus Integration – Reporter: Changjun Li CN

- No report for this year.

R 1.64 Real Colour Gamuts – Reporter: Changjun Li CN

- No report for this year.

R1-66 The Effect of Dynamic and Stereo Visual Images on Human Health: Reporter: Hiroyasu Ujike JP

- R1-66 Reportership will be submitting the report by the end of the end of the year.

R 1.67 Revisiting Correlated Colour Temperature – Reporter: Youngshin Kwak KR

- Final report to be submitted by the end of the end year.

R1.69 Applicability of Metrics for Evaluating Reflected Glare on Displays: Shao-Tang Hung TW

- The reporter continues to collect the new parameters and the related researches. Anticipates to finish 2022/23

iii. **Current Forums** (is to provide the opportunity for researchers to discuss ideas and exchange data on a given scientific or technical topic and where there is insufficient scientific knowledge to start a new Technical Committee)

RF-03: Matters related to Colour Rendition – Convenor: Kees Teunissen, NL

- The RF will provide a discussion and a data-sharing platform to support the development of a comprehensive method that characterizes all colour rendition aspects of white-light sources and lighting systems for general lighting purposes.
- Have defined a number of issues to investigate and are still looking for members to help out

b. Dissolution of and changes to TCs and Reporterships

None, but some criteria have been develop to determine if there has been sufficient progress in order continue.

9. Other Division News

Officers

Director	Youngshin Kwak (KR)
Associate Director – Vision	Yoko Mizokami (JP) replaced Ellen Carter
Associate Director – Colour	Kaida Xiao (GB)
Division Editor	Peter Hanselaer (BE)
Division Secretary	Li-Chen Ou (TW)

Italy has returned as an Official Division 1 Member

5th CIE Expert Symposium on Colour and Visual Appearance in Hong Kong was cancelled.

CIE Tutorials on Colorimetry and Visual Appearance was held as online event.

In talks with the Society of Motion Picture and Television Engineers to reach a memorandum of understanding regarding the spectral response functions of cameras and color appearance in movies and television

Review & update of CIE Research Strategy “Best of CIE” articles - reviewing and identifying Top 20 historical conference papers of interest



Division 2: Physical Measurement of Light and Radiation

Report to 2020 Annual Meeting of CNC/CIE

NRC Ottawa, December 11, 2020

Dr. Joanne Zwinkels

Email: joanne.zwinkels@nrc-cnrc.gc.ca; joanne.zwinkels1@gmail.com

10. Introduction

The 2020 annual meeting of CIE Division 2 (D2) took place as WebEx meetings in two parts: The first part was held on Thursday, 16 July 2020 and was mainly a retrospective informative reporting meeting where the current status of activities was discussed and recommendations were made. The second part was held on Thursday, 27 August 2020 and was a forward-looking decision meeting where balloting took place. I participated in both parts of this annual D2 meeting representing Canada as D2 Country member, and also in my roles as ADD, L2-3 and DR 2-84. Below are some of the highlights from this meeting (the Minutes of these 2020 D2 meetings are also available on the CNC-CIE members-only website):

11. Highlights

a. New Technical Committees and Reporterships

Proposals for Two (2) new TCs and Two (2) new JTCs:

TC Proposal:	Measurement of obtrusive light and sky glow
Proposed Chair:	Constantinos Bouroussis (GR)
TC Proposal:	Revision of ISO/CIE 19476:2014 Characteristics of the performance of illuminance meters and luminance meters
Proposed Chair:	Armin Sperling (DE)
New JTC Proposal:	Dynamic lighting
Proposed D2 Chair:	Rosa Wang (CN) This new TC proposed in D2 is considered that this should be a JTC (D6/D2)
New JTC Proposal:	Spectral daylight characteristics
Proposed D2 Chair:	TBD
Background:	This was a new TC proposed in D3 but it is considered by D2D that this should be a JTC (D3/D2). Due to lack of time, this could not be discussed at the meeting but DD will send out the proposal for D2 commenting and Call for Experts.

Proposals for Three (3) new Reporterships:

Reportership Proposal:	Terminology in single/few photon metrology
Proposed Reporter:	Dong-Hoon Lee (KR)

After the meeting, this reportership is: DR 2-87

Reportership Proposal:	Validation of a Web App for calculation of α-opic quantities
Proposed Reporter:	Manuel Spitschen (Oxford University, GB)
After considerable discussion, there was no decision at the meeting to proceed with this proposal.	

Reportership Proposal:	Temperature quantities used in colour appearance properties of light sources
Proposed Reporter:	Richard Young

After the meeting, this reportship is: DR 2-88

b. Division publications

There have been seven (7) D2 publications since the 2019 Washington meeting:

CIE TN 009:2019 The Use of “Accuracy” and Related Terms in the Specifications of Testing and Measurement Equipment

CIE 235:2019 Optical Measurement of LED Modules and Light Engines

CIE S025-SP1/E:2019 Test Methods for OLED Luminaires and OLED Light Sources

CIE TN 010:2019 Determination of the Optical Beam Axis, Centre Beam Intensity, and Beam Angle of Directional Light Sources

CIE 237:2020 Non-Linearity of Optical Detector Systems

CIE 238:2020 Characterization of AC-Driven LEDs for SSL Applications

CIE 239:2020 Goniospectroradiometry of Optical Radiation Sources

c. Future meetings

- **D2 2021 meetings** in connection with **CIE Midterm Meeting**, changed to: hybrid format (face-to-face and on-line), Kuala Lumpur, Malaysia, 26 Sept. – 2 Oct. 2021.
- **CIE 2023, 30th Quadrennial Session**, Slovenia, September 2023

12. Current Canadian participation in Division 2 activities

Activity	Title	Canadian Member
<i>Ten TCs/JTCs:</i>		
TC 2-59	Characterisation of Imaging Luminance Measurement Devices (ILMD)	T. Moggridge (member)
TC 2-77	Fundamental Concepts	J. Zwinkels (member)
TC 2-80	Spectroradiometric measurement of light sources	J. Zwinkels (member)
TC 2-82	Revision of CIE S014-2	J. Zwinkels (member)
TC 2-90	LED reference spectrum for photometer calibration	J. Zwinkels (member)
TC 2-92	International standard format for the electronic transfer of luminaire optical data	I. Ashdown (TCC)
TC 2-93	Revision of ISO 2339:2005/CIE S010/E:2004 Photometry – The CIE system of physical photometry	J. Zwinkels (member), Thomy Nillson (member)
TC 2-94	Measurement of total transmittance, diffuse transmittance and transmittance haze	L. Sandilands (member)
JTC-08	Terminology in light and lighting	S. McFadden, J. Zwinkels (members)
JTC-01	Implementation of mesopic photometry in outdoor lighting	J. Zwinkels (member)

One Reporter:		
DR 2-84	CIE D2 Strategy on Spectrophotometry	J. Zwinkels (Reporter)
One Liaison:		
L2-3	ISO TC6: Paper, Pulp and Board	J. Zwinkels (member)
One Officer:		
Division 2	Associate Director	J. Zwinkels

13. Highlights of Division 2 Work Programme

a. Overview of the status of D2 TCs and Reporterships

The active D2 TCs, JTCs and Reporterships are listed below. The most recent Minutes are attached. The D2 Urgent TCs, each with an ADD Mentor are: TC 2-86, TC 2-89 (ADD mentor is J.Zwinkels), TC 2-90 and TC 2-93.

i. TC2-xx or JTC-xx: Title (chair)

- **JTC-19 (D2/D6) Horticultural lighting terminology** (D2TCC: *Dekker*)
- **JTC-17 (D1/D2/D8) Gloss measurement and gloss perception: A framework for the definition and standardization of visual cues to gloss** (D2TCC: *Obein*)
- **JTC-12 (D1/D2/D8) The measurement of sparkle and graininess** (D2TCC: *Ferrero*)
- **JTC-08 (D1/D2/D3/D4/D6/D8)** (D2TCC: *Blattner*)
- **JTC-01 (D4/D1/D2) Implementation of mesopic photometry in outdoor lighting** (D2TCC: *Goodman*)
- **TC 2-94** Measurement of Total Transmittance, Diffuse Transmittance and Transmittance Haze (*Hsueh-Ling Yu*)
- **TC 2-93** Revision of ISO 23539:2005/ CIE S010/E:2004 Photometry – The CIE system of physical photometry (*Thorseth*)
- **TC 2-92** International standard format for the electronic transfer of luminaire optical data (*Ashdown*)
- **TC 2-91** Optical measurement methods of LED packages and LED arrays (*Schneider*)
- **TC 2-90** LED reference spectrum for photometer calibration (*Poikonen*)
- **TC 2-89** Measurement of Temporal Light Modulation of Light Sources and Lighting Systems (*Schake*)
- **TC 2-86** Glare Measurement by Imaging Luminance Measurement Device (ILMD); (*Chen*)
- **TC 2-85** Recommendation on the geometrical parameters for the measurement of the Bidirectional Reflectance Distribution Function (BRDF); (*Obein*)
- **TC 2-84** Recommendations on LED package test data reporting (*Poppe*)
- **TC 2-82** Revision of CIE S014-2 (*Csuti*)
- **TC 2-81** Update of CIE 065:1985 (Absolute Radiometers); (*Smid*)

- TC 2-80:** Spectroradiometric measurement of light sources (*Schneider*)
- TC 2-79:** Integrating sphere photometry and spectroradiometry (*D.H.Lee*)
- TC 2-78:** The Goniophotometry of Lamps and Luminaires (*Bergen*)
- TC 2-77:** Fundamental Concepts (*Bergen*)
- TC 2-75:** Photometry of Curved and Flexible OLED and LED Sources (*H-L Yu*)
- TC 2-68:** Optical Measurement Methods for OLEDs used for Lighting (*Yamauchi*)
- TC 2-67:** Photometry of Lighting and Light-signalling Devices for Road Vehicles (*Reiners*)
- TC 2-62:** Imaging-Photometer-Based Near-Field Goniophotometry (*Krüger*)
- TC 2-59:** Characterisation of Imaging Luminance Measurement Devices (*Krüger*)

4.1.2 Reporterships DR2-xx: (Reporter) Title

- DR2-64** (Edwin Mofokeng) TN on Errors of Measurement in Spectrophotometry
- DR2-69** (Johannes Ledig) TN on the validation of a near-field goniophotometer
- DR 2-75** (Tony Bergen) TN on the use of “Accuracy” and related terms in the specifications of testing and measurement equipment
- DR2-76** (Udo Krüger) TN on measurement uncertainties for testing of LED Lamps, Luminaires and Modules
- DR2-77**(Tongsheng Mou) Measurement of Quantities Relating to Photobiological Safety of Lighting Products
- DR2-78** (Annette Koo) Investigation of the need for documentary guidance relating to 0°:d (d:0°) reflectance instrument
- DR 2-80** (Anders Thorseth) Metrology of laser-based lighting
- DR 2-81** (Dennis Couzin) Flash effective intensity calculation
- DR 2-82** (Tony Bergen) TN on clarification of the difference between adjustment, calibration and verification
- DR 2-83** (Quian (Cherry) Li) Characterization and measurement of horticultural lighting products
- DR 2-84** (Joanne Zwinkels) CIE D2 Strategy on Spectrophotometry
- DR 2-85** (Florian Stuker) Quality indices for light dosimeters including visual and non-visual effects
- DR 2-86** (Alejandro Ferrero) Definitions for bidirectional scattering surface reflectance distribution function (BSSRDF)

b. Dissolution of and changes to TCs, Reporterships and Liaisons

4.2.1 The following One TC, Three Reporterships and One Liaison will be closed.

TC 2-87 Reason: to be replaced by a new Reportership on Pyroelectric detectors (or detectors with a flat spectral response)

DR 2-60 Reason: final TN document has been submitted for publication

DR 2-70 Reason: TCC resigned; scope of TC to produce Standards for measurement of reflectance and transmittance properties of materials is considered to be too broad; Reportership DR 2-78 will consider a smaller scope for possible creation of a new TC

DR 2-79 Reason: new TC has been created

Liaison L2-11 to ISO TC12 WG19 Reason: Liaison (Sperling) indicated that this was no longer needed

4.2.2 The following TCs have changes in their TCCs, Titles or Terms of Reference (ToR):

TC 2-62 Change in TCC from Udo Krüger to Knut Bredemeier

TC 2-86 Change in TCC from Chris Chen to Jan Wienold

TC 2-68 Change in its ToR to: To produce TR on characterization and measurement of uniformity of OLED panels used for lighting (but no change in Title of TC which refers to optical measurement methods)

TC 2-88 Change in title of the TR from: "Standard Reference Solar Spectra for Industrial Applications" to "Recommended Reference Solar Spectra for Industrial Applications"

14. Other Division News

5.1 Work in Progress/ Recently Completed

CIE LB D02-2011 D2 commenting on ED/TN of TC 2-89; Deadline: 2020-11-30

CIE LB D02-2010 D2 commenting on ED/TR of TC 6-52; Deadline: 2020-09-03

CIE LB D02-2009 D2 voting on AD/TR of TC 2-88; Deadline: 2020-08-02

CIE LB D02-2008 D2 voting on AD/TR of TC 2-75; Deadline: 2020-07-17

CIE LB D02-2007 D2 voting on approval of a new D6/D2 JTC; Deadline: 2020-05-29

CIE LB D02-2006 D2 voting on deferral of D2 annual meeting dates; Deadline: 2020-04-23

CIE LB D02-2005 D2 voting on DR 6-45 Toolbox and User Guide; Deadline: 2020-03-24

CIE LB D02-2003 D2 voting on AD/TR of TC 2-74; Deadline: 2020-03-05

CIE LB D02-2002 D2 voting on AD/TR of TC 2-76; Deadline: 2020-02-28

5.2 Call for Experts for CIE D2 TCs:

This should appear in CIE Newsletter upon approval of the new proposed CIE D2 TCs. If interested, contact TCC directly and fill out CIE TC membership application and Copyright release forms.

5.3 Technical Discussions at CIE D2 meeting (2020)

Due to lack of time, planned technical discussion on measurement of UV-C was skipped.

5.4 Changes in D2 Management Team

There are no changes at this time.

Division 3: Interior Environment and Lighting Design

Report to CNC/CIE 65th Annual Meeting
Online, 2020-Dec-11

Jennifer A. Veitch, Ph.D.
Email: j_a_veitch@jdarchitect.ca

15. Introduction

The 2020 meeting of Division 3 was held via Webex on July 6, 2020. The minutes are available to CNC/CIE Members on the Members area of the website.

16. Highlights

a. New Technical Committees, Reporterships, and Other Activities

Since the last report, two new TCs and two Division Reporterships have been formed:

TC 3-57	A Generic Discomfort Glare Sensation Model	TCC: Gilles Vissenberg (NL)
TC 3-58	Visual Ergonomics and Digital Display Use	TCC: Jennifer Long (AU)
DR 3-35	Resilient Lighting	Yuki Akizuki (JP)
DR 3-36	Luminance Measurement for UGR	Gilles Vissenberg (NL)

b. Division publications

Since the last CNC/CIE report in October 2019, D3 has completed one publication:

- CIE TN011:2020 What to document and report in studies of ipRGC-influenced responses to light [DR 3-34]

c. Future meetings

2020:Webex, June

2021:September, Midterm meeting, Kuala Lumpur, Malaysia (or online, depending on the pandemic)

2022:WebEx

2023: September 15-23, CIE 30th Session, Ljubljana, Slovenia

17. Current Canadian participation in Division 3 activities

Canadians who Chair or participate in Technical Committees, handle a Reportership, act as a Division Officer or act as a liaison are listed below. This list includes activities that ended during the reporting period. Increased participation by Canadians in CIE TCs – including students and those early in their careers – would be most welcome.

Activity	Title	Canadian Members
JTC 14	Integrative Lighting	J. Veitch (Member; D3 Chair)
JTC 15	Lighting of Indoor Workplaces	J. Veitch (Member)
RF-02	Matters Relating to Temporal Light Modulation	J. Veitch (Convenor)

In addition, Canadians are active in D3-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.

ISO/TC 274-JWG 1	Energy performance of lighting in buildings	T. Lau
[CIE JTC 6] (CIE-ISO)		
ISO/CIE AWI TR 3092	Light and lighting – Energy performance of lighting in buildings – Explanation and justification of ISO/CIE 20086	T. Lau, project leader
ISO/TC 274 JWG 2	Commissioning process of lighting systems	T. Lau
ISO/TC 163	Liaison officer from ISO TC 163 to ISO TC 274	T. Lau
ISO/TC295/WG10	Liaison officer from ISO TC 274 to ISO TC 205/WG10	T. Lau

18. Highlights of Division Work Programme

Division 3 has pruned its committee list to those that are making progress. The Division Management Team is interested to receive proposals for new committee work from people who are genuinely committed to progressing the work.

One interesting development is the ongoing nature of JTC 6, Energy Requirements for Lighting in Buildings. This is a joint TC with ISO/TC274/JWG1. It will continue to exist as long as there are items in its work plan. Such an ongoing CIE committee is new, but it is the best way to seamlessly continue to work in collaboration with ISO/TC274/JWG1.

a. 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 meeting minutes available to CNC/CIE Members at www.cnc-cie.ca.

Activity	Title	Chairman	Status
JTC 6 (CIE-ISO)	Energy Performance of Lighting in Buildings	L. Bellia [IT]	There is a new co-chair for this committee as of September 2020. This is now a continuing committee in parallel with ISO/TC 274/JWG1. Its work plan consists of two work items in the ISO side. One of these has been transferred by ISO from ISO/TC 163 to ISO/TC 274: ISO/CIE WD 10916 <i>Calculation of the impact of daylight utilization on the net and final energy demand for lighting</i> . The other, led by Canadian Toby Lau, is writing a guide to explain ISO/CIE 20086 (see AWI TR 3092 above).
JTC 8 (all Ds)	Terminology	P. Zwick (CIE-TM); P. Thorns for D3.	The final publication of CIE S017:2020 is expected before the end of the year, following a few copyediting fixes to the IEC version. CIE is also working on updating the online eILV to the new version.

<i>Activity</i>	<i>Title</i>	<i>Chairman</i>	<i>Status</i>
JTC 13 (D4/D3)	Depreciation and Maintenance of Lighting Systems	D. Gasparovsky (D4) Peng Zhuang (D3)	A working draft is in preparation; the TC last met in late June 2020.
JTC 14	Integrative Lighting	J. O'Hagan [UK] [D3, J. Veitch]	ISO/CIE TR 21783 was completed and successfully balloted in both ISO/TC 274 and CIE (D6, D6, and BA). It is now with ISO for final publication, expected by the end of 2020.
JTC 15	Lighting of Indoor Workplaces	E. Mochizuki [JP]	Two meetings have been held since the last report. The project is not yet registered as an activity in the ISO, but preliminary drafts of sections have been put forward and will be discussed at the upcoming meeting (Dec. 10, 2020). Expected completion is 2024.
JTC 18 (D3/D4)	Lighting Education	D3: Piotr Praki [PL]	Progress was delayed because of COVID-19; all of the members were preoccupied by the switch to online teaching.
TC 3-54	Revision of CIE 16-1970: Daylight	Y. Sutter [FR]	The term of this TC has been extended, with completion due April 2024. Work is now progressing.
TC 3-56	Assessment of Discomfort Glare from Daylight in Buildings	T. Iwata [JP]	Final working draft at TC ballot stage.
DR3-32	Guidelines for Post-Occupancy Evaluation of Lighting Installations	V. Garcia-Hansen [AU]	Work progressing.
DR 3-34	Documentation Template for Studies on Non-image-forming Effects	J. Veitch [CA]	Work complete, published as CIE TN 011:2020. Will be closed.
DR 3-35	Resilient Lighting	Yuki Akizuki [JP]	Newly created; delayed because of the pandemic
DR 3-36	Luminance Measurement for UGR	Gilles Vissenberg [NL]	Newly created, and delayed somewhat because of the pandemic, but moving along. The goal is to write a TN to support the application of CIE 232:2019.
RF-02	Matters Relating to Temporal Light Modulation	J. Veitch [CA]	Ongoing

b. Dissolution of and changes to TCs and Reporterships

The following activities have been closed.

<i>Activity</i>	<i>Title</i>	<i>Chair</i>	<i>Reason</i>
TC 3-55	Metrics for sunlighting and daylight passing through sunshading devices	M. Fontoynt [DK]	Closed because there was no progress despite several extensions of the deadline.

19. Other Division News

As always, we would like to see more Canadian participation in Division 3 activities and TCs. Anyone interested in becoming more active in the CIE should contact me for more information about opportunities.

There is a new Division Editor for D3, Veronica Garcia-Hansen [AU].

Division 4: Transportation and Exterior Applications

Report to CNC/CIE 65th Annual Meeting
Webinar, December 11, 2020

Cristian Suvagau
Email: cristian.suvagau@bchydro.com

1 Introduction

Division 4 Scope: *To study and prepare guides for the design of exterior lighting and light signaling.*

The Div. 4 officers for 2019-2022 are:

- Division Director Dionyz Gasparovsky (SK)
- Division Secretary Maurice Donners (NL)
- Division Editor Nigel Parry (GB)

Division 4 established 3 Subdivisions (each with an Associate Director):

- AD#1-Steve Fotios (GB) - Fundamentals in outdoor lighting
- AD#2-Raoul Lorphevre (BE) - Lighting & signaling for transport
- AD#3-Sermin Onaygil (TR) - Exterior applications

Last Division 4 meeting was held in Washington, DC, from June 19 to 21, 2019 in conjunction with the Quadrennial Session of the CIE.

Due to the Covid-19 pandemic disruption of activities the 2020 Div. 4 Annual meeting scheduled for, May 2020, in conjunction with the CIE Obtrusive Light Workshop at the Technical University of Ostrava, Czech Republic was cancelled and replaced with an online meeting (May 20, 2020).

More information can be found on the CIE website.

2 Highlights

2.1 New Items

2.1.1 New Technical Committees

Update of CIE 136 Guide of urban Areas

Update and evaluation of C115

TC 4-27 Artificial Light and its Impact On The Natural Environment

Chair: Paul Carlson (US)

TC 4-36 Visibility Design For Roadway Lighting

Chair: Giuseppe Rossi (IT)

TC 4-40 Performance Evaluation Of Retro-Reflective Traffic Signs

Chair: Dionyz Gasparovsky (SK)

TC 4-46 300nm Roundel Signals

Chair: Ron Gibbons (US)

2.1.3 New Reporterships:

Practical Guidelines for the Application of CIE 150

Reporter: Maurice Donners Stockmar (NL)

Lighting of Open-cast Mines

Railway Applications

2.1.4 Research:

RF-02 – Matters relating to Temporal Light Modulation (TLM)

2.2 Division publications

Publications produced during the past year:

- CIE 236:2019 Lighting for Pedestrians: A Summary of Empirical Data
- CIE 234:2019 A Guide to Urban Lighting Master planning

Here is summary of the existing/ current publications in the scope of Division 4:

- 12 publications are marked as “current”
- 13 publications are currently handled
- 5 publications are prepared or suggested for revision
- 5 publications are proposed for archival / withdrawal
- 5 publications have pending reviews
- 8 publications will expire in 2018

2.3 Future meetings

- 12/13 November 2020 Calculation and Measurement of Obtrusive Light (workshop), Ostrava (CZ)
- 2021 Div. 4 Annual meeting, September 26-October 2, 2021 in conjunction with the CIE Midterm Meeting in Penang, Malaysia
- 2022 Symposium: New Directions in Research and Development of Road Lighting and Urban Lighting (preceding the D4 Annual Meeting) Shanghai 09.-13.05.2022
- 2023 Workshop: Lighting Up the Cities (masterplan + urban/architectural elements) (within CIE Quadrennial) - Ljubljana (SI), 15.-23.09.2023

3 Current Canadian participation in Division X 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
Div. 4	CNC Division representative	Cristian Suvagau
TC4-58	TC member	Ian Ashdown
	CNC Member	Deborah Gottesman

4 Highlights of Division Work Program

4.1 Overview of the status of TCs and Reporterships

Currently the Division 4 incorporates 13 Technical Committees, 5 Reporterships, participates in 4 Joint Technical Committees and has 6 Liaison Officers with other organizations:

4.1.1 TC Reports

TC 4-11 High Level Matters (D4/mtg Activities)

Scope: To co-ordinate D4/mtg activities abroad

Chair: Nigel Parry (GB)

[TC 4-33 Discomfort Glare in Road Lighting](#)

Scope: To study the known mathematical description of the discomfort glare in road and vehicle lighting, its scaling and comparisons with field studies and to condense the outcome in a report that should result in methods for discomfort glare assessment. To review or replace Publication CIE 31-1976.

Chair: Stephan Völker (DE)

Status: Due out in 2019.

TC 4-47 Application of LED's in Transport Lighting and Signaling

Scope: To review the application and methods of measurement of LED Systems in transport lighting and signaling as far as they affect the visual performance of the users of the transport system. To prepare a Technical Report which includes the findings of the review and recommendations for the visual characteristics of LED signals and lighting.

Chair: Steve E Jenkins (AU)

Status: Draft finished

TC 4-50 Road Surface Characterization for Lighting Applications

Scope: To revise Publication CIE/PIARC TR 66, 1984 containing the Standards. To propose Methodologies for the Determination of Parameters from Calculation and from Laboratory and on site Measurements, considering also the Evaluation of Uncertainty. To publish Data. Review CIE Publications 47 and 144, excluding the sections on markings.

Chair: Haldun Demirdes (TR)

Status: Finalization of the draft expected in 2020.

TC 4-51 Optimization of Road Lighting

Scope: To develop guidance on optimization of road lighting to balance the benefits and costs. Primary issues include accident risk and energy consumption. Tasks include: - Technical Report or update CIE Publication 93. - Provide analysis of lighting quality

Chair: Per-Ole Wanvik (NO)

TC 4-53 Tunnel Lighting Evolution

Scope: To prepare a revision of CIE 88:2004: "Guide for the lighting of road tunnels and underpasses"

Chair: Raoul Lorphevre (BE)

TC 4-54 Road Lighting for Ageing Drivers

Scope: To propose improvements to the existing road lighting recommendations to provide the required safety and comfort for drivers with a visual system which has deteriorated due to normal healthy ageing processes, based on a review of existing data and performance based empirical data.

Drivers in this context is meant to include drivers of motor vehicles as well as cyclists, including powered bikes (e-bikes, pedalecs, etc.)

Chair: Maurice Donners (NL)

TC 4-57 Guide for Sports Lighting (new TC number as being moved from Div 5)

Scope: To prepare a Guide for Sports Lighting that excludes lighting for TV and films. This guide will replace the present publications CIE 42-1978, CIE 45-1979, CIE 57-1983, CIE 58-1983 and CIE 62-1984

Chair: Alan Smith (GB)

TC 4-58 Obtrusive Light (light pollution) from Colourful and Dynamic Lighting and its Limitation (new TC number as being moved from Div 5)

Scope: To provide guidelines for the implementation and usage of colourful and dynamic lighting in outdoor applications aiming at limitation of obtrusive light with respect to astronomical observations, humans and night-time environment. To develop metrics for obtrusive light from colourful and dynamic lighting systems and to propose suitable methods for limitation or prevention of obtrusive light from such systems.

Chair: Steve Lau (CN)

TC [4-59 Guide for Lighting Urban Elements](#)

Scope: To revise and update the (obsolete, 20 years-old) publication CIE 94:1993 'Guide for floodlighting', introducing additional and updated information on the current light sources, luminaires and lighting techniques, as well as on the importance of lighting urban elements and the techniques and technology available for this lighting task. To extend the decorative/aesthetical focused guidelines by technical practice and research based recommendations on other issues such as economic, functional, environmental and urbanistic aspects. To consider the particular case of cultural heritage in order to contribute to its preservation.

Chair: Diana del Negro (PT)

TC [4-60 Road Traffic Lights – Photometric Properties of Roundel Signals](#)

Scope: The purpose of this TC is to revise the international standard ISO 16508:1999/CIE S 006 and to specify requirements to colour, luminous intensity and luminous intensity distribution of 200 mm and 300 mm road traffic signals incorporating the newest LED technology in light signals, dealing specifically with impacts on signal recognition due to the sun including sun phantom and ghosting. Furthermore, TC 4-60 is to provide a test method for determining phantom light luminance ratio.

Chair: Ron Gibbons (US)

TC 4-61: Artificial Lighting and its Impact on the Natural Environment

Scope: To provide guidance on ways to minimize the effects of artificial lighting on the natural environment, including impacts on flora and fauna. This would be accomplished by making recommendations on light levels, spectral distributions, and other specific considerations of a broad range of organisms as well as specific habitats.

Chair: Annika K. Jägerbrand (SE)

TC 4-62: Adaptive Road Lighting

Scope: To analyze needs, specify recommendations, develop methodology and promote application of adaptive road lighting based on various conditions and input data from field sensors and interconnected systems with respect and tailored to specific requirements of different user groups and user patterns.

Chair: Thomas Baenziger (CH)

[JTC 01 \(D1/D2/D4\) Implementation](#) of the CIE191:2010 Mesopic Photometry In Outdoor Lighting

Scope: To investigate adaptation and viewing conditions and define visual adaptation fields in outdoor lighting. 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 08 \(D1/D2/D3/D4/D5/D6/D8\) Terminology in \[Light\]\(#\) and Lighting](#)

Scope: 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 on questions related to the incorporation of ILV terms and definitions into IEC 60050-845 "International Electrotechnical Vocabulary. Lighting", coordination with ISO/TC 12 on questions related to the incorporation of ILV terms and definitions into ISO 80000-7 "Quantities and units – Part 7: Light and radiation" and any further terminology issues within CIE.

Chair: Peter Zwick (DE)

[JTC 13 \(D4/D3\) Depreciation and Maintenance of Lighting Systems](#)

Scope: To revise CIE 97:2005 and CIE 154:2003 in order to bring them up to date by incorporating recently used approaches for determination of lumen maintenance of LED lamps, dealing with lamp and ballast/driver survival factor and upgrading the luminaire maintenance factor according to current technologies and environmental factors. To deal additionally with distortion of luminous intensity distribution due to environmental influences. To extend the document by maintenance of LED luminaires regarding their cooling specific requirements.

Chair: Dionyz Gasparovsky (SK)

JTC 18 (D3/D4): Lighting Education

Scope: To revise and update CIE 99:1989 and to provide recommendations on curricula for higher education and continuing education. To propose recommendations for education of lighting professionals and recommend options to improve and support continuing lighting education throughout the professional working life.

Chair: [Piotr Pracki](#) (PL)

4.1.2 Reporterships:

DR 4-36 CEN/TC169 Lighting Applications

Reporter: Axel Stockmar (GE)

DR 4-49 Flicker from Lighting on High Speed Road

Reporter: Chao-Hua Wen (CN)

DR 4-50 Document Status and Review

Reporter: Dionyz Gasparovsky (SK)

DR 4-51 Visibility and Glare Study of LED Traffic Signs

Reporter: Tsung-Xian Lee (CN)

DR-4-52 Visibility under Adverse Weather Conditions

Reporter: Chan-Su Lee (CN)

DR-4-53 Environmental Aspects of Obtrusive Light from Outdoor Lighting Installations

Reporter: Constantinos Bouroussis (GR)

DR-4-XX Lighting for Cycling – establishing the State of Knowledge

Reporter: Jim Uttley (GB)

4.2 Dissolution of and changes to TCs and Reporterships

- TC 4-45 Performance Assessment Method for Vehicle Headlamps
- TC 4-52 Lighting for Pedestrians: New Empirical Data
- TC 4-56 Master planning Urban Lighting
- TC 5-28 Guide On Limitation Of The Effects Of Obtrusive Light
- R 4-41 Lighting For Elderly
- R 4-48 Intrusive Light
- R 5-16 Photometric Specification And Measurement Of Sports Lighting Installations
- R 5-18 Comparison Of Glare Assessment Methods

5 Other Division News

Tutorials to be developed following the release of new CIE publications

Division 6: PHOTOBIOLOGY AND PHOTOCHEMISTRY

Report to CNC/CIE 65th Annual Meeting

Sami Qutob

Email: Sami.Qutob@canada.ca

6 Introduction

Terms of Reference of Division 6: To study and evaluate the effects of optical radiation on biological and photochemical systems (exclusive of vision). The list of TCs, their terms of reference and current status is available on the Division web page: <http://www.cie.co.at/div6/tcs.htm>.

Attendees, country and division roles

Luc Schlangen (LS)	NL	DD6 (Division Director) NC Rep (National Committee Representative)
Eric Liggins (EL)	GB	DE6 (Division Editor)
Luke Price (LP)	GB	DS6 (Division Secretary) R6-45 CIE S026 Toolbox R6-46 IWCNP II, Manchester Workshop 2019
David H. Sliney (DHS)	US	Associate Director (ADD6) L6-5 IEC/TC 76/WG 1 Liaison Officer L6-6 ASP Liaison Officer TC6-64 Chair, Eye Trackers
Shu Takeshita (ST)	JP	ADD6 NC Rep
Tongseng Mou (TM)	CN	NC Rep
Peter Sperfeld (PS)	DE	ADM (Associated Division Member)
Jens Christoffersen (JC)	DK	NC Rep
John O'Hagan (JOH)	GB	NC Rep L6-2 WHO Liaison Officer L6-8 CEN/TC 169/WG 8 Liaison Officer L6-10 IEC/TC 34 Liaison Officer, incl. WG 6 JTC 05 Chair, Review of CIE S009 JTC 14 Chair, Integrative Lighting
Laura Bellia (LB)	IT	NC Rep
Urszula Blaszcak (UB)	PL	NC Rep
George C. Brainard (GCB)	US	NC Rep
Richard Vincent (RV)	US	TC6-52 Chair, Passive UV Air Disinfection Sources
Michael Lynn (ML)	GB	R6-43 Hyperbilirubinemia Illuminators
Ann R Webb (ARW)	GB	L6-7 WMO Liaison Officer
Peter Blattner (PB)	CIE President	Observer

Apologies

Luke Price had received apologies from the following: Karl Schulmeister (ADD6 and L6-4 ICNIRP), Nathalie Leise (Germany's NC had appointed ADM Peter Sperfeld as an automatic proxy), DHS, who will be intermittent due to attending a parallel online meeting, and David Baeza (NC Rep for ES), who was unsure if he would be able to attend.

LS later noted he had also received apologies from Coralie Barreau.

7 Highlights

7.1 Progress report from DD6

LS reported on the year, with a presentation outlining the following: D6 had helped with two CIE positions statements, on the non-visual effects of light and Germicidal UV disinfection with respect to interrupting COVID-19 transmission; it had completed the first of a new type of CIE publication, the S 026 Toolbox and User Guide with a well-received online video; and that D6 had a new NC Rep (Italy) Laura Bellia.

LS noted CIE had made two CIE documents freely available related to germicidal UVR and COVID-19, and showed where the introductory video could be found online, where it had been viewed over 2000 times already. He noted that changes to upcoming events were available on the CIE website.

D6 will be supporting CIE drafting its new objectives for 2023, and several BA (CIE Board of Administration) activities.

Laura Bellia introduced herself and said she was keen to contribute to D6 work.

7.2 Secretary's report

Luke Price also reported with a presentation, welcoming our two new members. He mentioned the recent ballot on a new JTC on horticulture that D6 had approved, there was a current BA/D6 ballot on the T6-64 ED, and that a ballot is expected for the other TC shortly, as well as on a possible new activity on wearables (a JTC). DMs are encouraged to engage in D6 ballots in general, and as they do so, to seek to gather and collate comments from experts from within their NC if they need.

7.3 Editor's report

Eric Liggi's presentation included the following: progress on the TCs involving DE6, and details of the DE role and how he can help DRs (Division Reporters) and TCCs.

7.4 New Technical Committees and Reporterships

Progress was made towards a JTC proposal on wearable optical dosimeters in relation to non-visual measurement performance characteristics. A candidate D2 co-chair has been identified subject to managerial approval, and Manuel Spitschan at the University of Oxford has agreed to act as the JTC Secretary. Following this, LP has put together a list of experts from the relevant fields of work and research to approach to act as the members. LP said there was no guarantee, but if anyone wishes, they can email him, and all candidates will be subject to the usual processes in due course.

LS asked ARW if any activity would be useful on UV action spectrum for Vitamin D synthesis. ARW does feel this would be valuable at some point. We have a TC report action spectrum, so the next stage would be to convene to move it on to a standard. There are dissenting voices on the action spectrum, but there are no specific counter proposals to take its place. It may be possible to pick up on the formal process already started for gaining D6 and CIE approval for it. ARW expressed an openness to considering evidence justifying changing the action spectrum, due to lack of sensitivity for values at the longer wavelengths, but concerned ethical approval might be challenging, depending on the choice of end-point. ARW wonders if it is worth collecting some of the critics and seeing if anything can be progressed, but would prefer to defer this until a new assay (being developed for ARW, and intended for completing a more accurate action spectra determination) becomes available.

JOH suggested Anthony Young may have more time, and has offered to do the DNA action spectrum, and Richard McKenzie, Michael Kimlin and Dutch modeller Arjan van Dijk. JOH also suggested contacting

Anthony Young about the DNA action spectrum separately to see what can be done, and if it is mature enough to be a Technical Note, Technical Report or a Standard. LS asked JOH to contact him, and JOH willing to guide him in CIE's ways.

7.5 Division publications

ISO/CIE 17166:2019(E) Erythema reference action spectrum and standard erythema dose

7.6 Future meetings

It was suggested that the upcoming mid-term meeting be held in Kuala Lumpur, Malaysia, with a Webex link. Due to COVID-19 and difficulties in being confident to arrange travel plans the CIE 2021 Midterm Meeting is postponed.

Our Hosts, MyCIE, have proposed to reschedule CIE 2021 to late September 2021 (September 26, 2021 to October 2, 2021) - this will be confirmed once the CIE National Committees have approved the change in date.

Prior to this meeting the 19th International Congress of the European Society for Photobiology (#ESP2021) will be held in Salzburg – Austria from 30th August to 3rd September 2021.

Tentative CIE Midterm Meeting Timelines:

- December 1, 2020 : Website, Abstract Submission Open
- December 1, 2020: Registration Open
- December 2, 2020: Call to the Divisions for their annual and TC meetings
- March 19, 2021: Abstract Submission Deadline
- May 17, 2021: Notification to authors
- June, 2021 (early): Draft CIE 2021 Conference Programme online
- June, 2021 (early): Division and TC Meeting Programme online.
- June 28, 2021: Early Registration Deadline

8 Current Canadian participation in Division X 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
TCx-xx		Name (position)
JTC-8	International Lighting Vocabulary	Sharon McFadden/ Joanne Zwinkels
JTC-14	Integrative Lighting (ISO JWG 4)	Jennifer Veitch
R6-46	Second International Workshop on Circadian and Neurophysiological Photoreception (Luke Price)	Jennifer Veitch
RF-02	Matters relating to temporal light modulation (Jennifer Veitch)	Jennifer Veitch

9 Highlights of Division Work Programme

9.1 Overview of the status of TCs and Reporterships

Progress reports from Technical Committee Chairs

Progress reports for items 8, 9, 10 and 11 are available on CollTools, with further details.

4.1.1. TC6-52 Proper Measurement of Passive UV Air Disinfection Sources (Richard Vincent)

Editorial work has been undertaken by an experienced CIE/D6 team (including JOH, RB, LS, Peter Zwick, Peter Blattner and DHS) on outstanding points from CIE CB. Activity levels reflect the greater urgency in the light of COVID-19. This is completed, RV thanks all those in Division 6 and at the CIE CB for their help in clarifying the document. The document can now be returned to CIE CB to be put into a final form for commenting and voting.

4.1.2. TC6-64 Optical Safety of Infrared Eye Trackers Applied for Extended-Durations (David Sliney)

DHS explained CB had completed editing the Enquiry Draft in June 2020, with thanks to another experienced CIE/D6 team including Fiona Mulvey, EL and Peter Zwick, and this has been sent to BA and D6 for commenting and voting. Fiona has now been listed as co-chair to recognise her input, along with an adviser JP Cesarani.

LS thanked RV and DHS for all their work.

4.1.3. JTC 05 Joint Technical Committee to Revise CIE S009/IEC 62471 (John O'Hagan)

The WD is expected to be circulated soon around the JTC by the end of June 2020 before submission to the Division Editor, and ED after that, as this document is urgently needed.

4.1.4. JTC 08 International Lighting Vocabulary (Peter Zwick)

JOH outlined the progress of the JTC, as Peter Zwick was not present. The ED had received comments in February 2020, that were to be addressed by May 2020 for parallel publication by the middle of 2020. JOH noted it has to be translated into German with intended publication in August. There will be a new version of the e-ILV too, with terms added, updated or taken out and JOH recalled there are about 1300 terms.

4.1.5. JTC 14 Integrative Lighting (John O'Hagan)

JOH confirmed the draft had been circulated for comment in ISO TC 274 JWG 4 and CIE JTC 14 by the end of May 2020. Significant comments were received, and on 10th June 2020, a subcommittee was set-up to process the main section of these comments later in July.

ISO TC 159 subcommittee 4 on Interiors had their own document critical of ours, and vice versa, so discussion going on about how to manage that, and frustrating CIE as ISO isn't dealing with overlaps. JOH not confident there will be sufficient agreement between the two committees to allow for publication. Commenting closed last week, and CIE commented on why the TC 159 document shouldn't be published.

For JWG 4, there were contradictory comments and votes from NCs in ISO, but we had to accept that the CIE comments contradicted each other. Has to be published by the end of this year if at all.

Progress reports from Reporters

4.1.6. R6-43 Illuminators for Treatment of Infant Hyperbilirubinemia (Michael Lynn, Graham Hart)

ML explained that mathematical modelling has been used extensively to interpret the data and infer the action spectra, as it would be difficult to conduct an ethical action spectrum trial. However, recently a team in Denmark had published a clinical trial, which compared 458 nm with 476-480 nm, and the longer wavelength were appropriate, as successfully predicted by modelling. This has enabled ML to complete the report. ML had updated the draft from the 2019 meeting and had just circulated to the DOs for consideration for publication as a TN or simply for circulation within D6 (and archiving in CollTools and its replacement).

LP noted that an ad-hoc group would need to consider the implications of CIE publishing this information as a CIE TN, and should include medical and/or legal advice. ML proposes we could do both. JOH concern is whether there is anything in the report that implies anyone had done anything wrong in the past. ML has reflected that comment when writing the latest version.

4.1.7. R6-45 Publication and maintenance of the CIE S026 Toolbox (Luke Price)

LP reported that the Toolbox and User Guide had been published in early April, together with a video introduction from LS and LP edited by LS's son, who had done a great job. This has been well received as previously noted. The reportership stays open for maintenance purposes, and LP can receive queries through the CIE Helpdesk email. So far the only enquiries have come through usage of previous versions only.

GCB welcomed the Toolbox, and noted it was very important that, due to CIE's vision, they had been prepared to publish it freely. He expected it to have a far reaching impact on international work.

4.1.8. R6-46 Second International Workshop on Circadian and Neurophysiological Photoreception (Luke Price)

LP noted the R6-45 Toolbox had arisen out of the first Manchester Workshop or (IWCNP I) in 2013, that was chaired by GCB and Rob Lucas. The Second Manchester Workshop (IWCNP II) was held in July 2019, and LP has prepared as much of the report as possible in draft. The experts agreed to wait for Tim Brown at Manchester University to publish his meta-study, which he has now done, and then they would prepare a review paper with exposure recommendations in terms of melanopic equivalent daylight (D65) illuminance at the eyes (melanopic EDI, in lux). LP noted JOH had felt he wouldn't contribute to the review paper.

GCB is chair of IES light and human health committee which is moving to publish its standard with JOH and Jennifer Veitch and others from CIE. He wanted to emphasise the importance IES is likely to attach to the work done by CIE and the Manchester Workshops. He noted the IES document is long, and is tentatively (not balloted) recommending using the 2018 standard (CIE S 026:2018), the 2019 CIE position statement and Tim Brown's recent melanopic EDI paper.

4.1.9. R6-47 The Role of Light and Lighting Conditions in the Prevention, Development and Mitigation of Myopia: a Literature Review (Coralie Barrau)

LP presented the report sent in by the DR. 500 papers were identified, and this was narrowed down to around 100. 80 of these have been reviewed to construct the present draft and 20 further papers will be considered and incorporated in the next month or two.

It was hoped to send the TN exposure draft for review in December 2020. A CIE Position Statement would be valuable following the publication of the reportship.

LS has noted the DR has been finding that the compelling evidence that being outdoors is somehow protective against myopia.

Progress reports from Research Fora

LP noted there are three CIE Research Fora (RFs), the other two on spectral imaging and matters related to colour rendition. He presented the information sent into the Division.

4.2.0. RF-02 Matters relating to temporal light modulation (Jennifer Veitch)

On the invitation of DS6, Jennifer Veitch had produced a meeting report for the RF from the 2019 conference, and helpfully sent this with an activity report to D6. LP noted that there is now a D2 technical committee: TC2-89 Measurement of Temporal Light Modulation of Light Sources and Lighting Systems (Menno Schakel), so the RF is now less active, but there are often interesting discussions on the RF email list, which JV maintains.

Progress reports from Liaison Officers

LS set out his proposal to reorganise the Liaisons, by combining L6-1 with L6-5 under DHS, and dissolving L6-3 and L6-9 (although initially there was some confusion about the L6-9 Liaison target). All these proposals were agreed, but JOH recommended L6-4 remain unchanged, as he was the liaison for CIE, rather than D6, with ICNIRP.

4.2.1. L6-1 IEC TC76/WG9 International Electrotechnical Commission: Optical radiation safety and laser equipment/Non coherent sources (Werner Horak)

No report received. As above, LOs are being reviewed by DD6.

4.2.2. L6-2 WHO World Health Organization (JOH)

WHO is preparing Basic Safety Standards for Non-Ionising Radiation, including optical radiation. CIE is represented by JOH on the working group. Circulation planned later in 2020, hopefully for a CIE joint-logo approach.

4.2.3. L6-3 ISO TC217/WG7 International Organization for Standardization: Cosmetics/Sun protection test methods (Uli Osterwalder)

No report received. As above, LOs are being reviewed by DD6, and L6-3 will be dissolved.

4.2.4. L6-4 ICNIRP International Commission on Non-Ionizing Radiation Protection (Karl Schulmeister)

LP noted that the LO had sent the activity report, but also his apologies for missing the meeting. A joint online CIE ICNIRP Tutorial on photobiological effects and measurements (D6, D2) will take place, organised as online-platform. The parallel Symposium was cancelled when the meeting was moved online. The activity report includes a list of five ICNIRP publications during the year (please see CollTools).

4.2.5. L6-5 IEC TC76/WG1 International Electrotechnical Commission: Optical radiation safety and laser equipment/Optical radiation safety (David Sliney)

DHS presented both his Liaison reports for L6-5 and L6-6. Work is progressing on moving platforms, virtual enclosures, and lasers directed at the human face. The WG is making progress on a standard relating to UV products including UVB or UVC.

4.2.6. L6-6 ASP American Society for Photobiology (David Sliney)

The ASP meeting that would have been happening on 28 June – 3 July in Chicago was postponed due to COVID-19. DHS is the organiser for germicidal ultraviolet irradiation which is still taking place online because of the interest in SARS-CoV-2 infection control, in July or August, with participants from Japan, the US and perhaps Russia.

D6 meetings have often collocated with ASP and ESP to pull in more scientists from those fields, which is DHS's suggestion for the future. DHS also suggested D6 should contact ESP and ASP and make sure that they can circulate the details of the CIE workshop on photobiology.

4.2.7. L6-7 WMO World Meteorological Organization (Ann R. Webb)

There was no significant activity. ARW notes that the CIE 2014 report is freely available at the following link: [CIE 209:2014 Rationalizing Nomenclature for UV Doses and Effects on Humans](#)

ARW has been using the ILV as a reference document in the WMO work.

Unconnected with this liaison, ARW and LS discussed the Vitamin D action spectrum, both here and later in the meeting where they are recorded.

4.2.8. L6-8 CEN TC169 WG8 Photobiology (John O'Hagan)

There was no significant activity.

LP noted the former L6-9 has been discontinued, as noted earlier.

4.2.9. L6-10 IEC TC34 (incl. WG6 Lamps and related equipment (Photobiological Safety)) (John O'Hagan)

JOH's report noted that this liaison is to the top level of TC34, not just WG6. The project IEC 62778 ED1 "Assessment of blue light hazard of light sources and luminaires" is progressing, but no information is being provided to CIE. It is understood that the next stage, Committee Draft for Voting, is outstanding (due April 2020).

9.2 Dissolution of and changes to TCs and Reporterships

In addition to the liaisons being reorganised, LP had prepared a list of activities being dissolved:

JTC 04 Visual, Health, and Environmental Benefits of Windows in Buildings during Daylight Hours

LP noted that this was in the process of being dissolved, explaining to DHS that this may have been delayed to ensure the terms of the D3 activity that replaces this JTC could be agreed.

JTC 09 CIE System for Metrology of Optical Radiation for Light Responses Influenced by Intrinsically-Photosensitive Retinal Ganglion Cells (Chair Luc Schlangen, Secretary Luke Price)

LP noted that this had been dissolved, and the two related reporterships were established rather than keeping the JTC open (R6-45 and R6-46).

R6-44 Optical Radiation Hazard Measurements in the Workspace (David Sliney, Robert Angelo)

It was noted that R6-44 had been recently dissolved, as agreed at the 2019 meeting.

10 Other Division News

LS discussed Division workshops on several topics for the mid-term meeting. DHS UV germicidal remains a good topic, and currently on the minds of the community for COVID-19, and may still be relevant in May

even if only for future viral threats. DHS would happy to co-chair with an Asian contact on UV germicidal action. Action DHS to solicit for the co-chair.

A workshop on the Vitamin D action spectrum alongside would illustrate by a multi-stage biological process that makes it very confusing how to suggest a single action spectrum. ARW thought a workshop may be a good means to gather opinion on the future activity prospects, and more input online rather than through an in-person meeting. Action ARW to do likewise to DHS.

Note that the business here arose from discussions under items 11 and 13 above.

There was no other business.