



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



Canadian National Committee Comité national canadien

MINUTES OF THE 68th ANNUAL CNC/CIE MEETING

27 November 2023

The 68th annual meeting of the Canadian National Committee of the Commission Internationale de l'Éclairage (CNC/CIE) was held on Monday, November, 27, 2023 on the Zoom videoconferencing platform arranged and hosted by J. Hovis.

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
CNC/CIE	Canadian National Committee of the CIE
CNC-BA	Canadian National Committee Board of Administration
CoP	CNC/CIE Code of Procedure
CIE-USNC	US National Committee of the CIE
IES	Illuminating Engineering Society
ISO	International Organization for Standardization
IRO	International Relations Office of the NRC
MC	Membership Committee
NRC	National Research Council of Canada
NRC-IAO	National Research Council International Affiliations Office
NRC-METRO	NRC Metrology Research Centre
NRC-CONST	NRC Construction Research Centre
NRCan	Natural Resources Canada
SCC	Standards Council of Canada
TC	CIE Technical Committee
WG	Working Group



1. Call-to-Order and Approval of Agenda

The 68th annual meeting of the CNC/CIE was called to order at 13:00 EST on Friday, November 27, 2022 by J. Hovis, President. S. Coyle motioned to accept the agenda, C. Suvagau seconded the motion and the motion was carried unanimously.

2. Minutes of the 68th Annual CNC/CIE Meeting

J. Hovis called for any abstentions or negative votes on the last year meeting minutes. Since none were recorded, the minutes were approved.

2.1 Action Items

2020-AI-2: J. Hovis decided to carry it forward.

2020-AI-3:

- J. Hovis mentioned that Robin Atkins from BC joined and was approved as the CNC/CIE Division 8 member.

- J. Veitch mentioned an individual recruited through the Canadian Psychological Association was interested in becoming the Division 1 member. J. Veitch and J.Hovis will meet them online later in the month.

2020-AI-4:

- V. Venkataramanan reported challenges in recruiting due to busy or relocated individuals.

- C. Suvagau mentioned that a manufacturer joined Division 4 (interested in standards). IES Vancouver is interested to have a joint seminar in the future.

2022-AI-1: S. Coyle mentioned that the transfer may happen on the next round, probably in May 2024.

2022-AI-3: J. Hovis called for action item to be carried on.

2.2 Matters Arising

Nobody applied for funding to attend the 30th Quadrennial Session of the CIE in Ljubljana.

3. President's Report

J. Hovis presented his report with discussion and is attached as [Appendix D](#).

4. Vice-President's Report

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

5. Secretary's Report

Ali Ghaemi presented his report with discussion and is attached as [Appendix F](#).

6. Treasurer's Report

S. Coyle presented her report with discussion and is attached as [Appendix G](#). She noted that the 4911.72\$ income from the CORM-CNC/CIE-US/CIE meeting will be equally distributed among those three organizing entities. This revenue will go into the 2023-2024 report.

7. Membership and Elections Subcommittees

7.1 M & E Subcommittee Membership

M. Mossman presented her report with discussion and is attached as [Appendix H](#).

8. Mirror committee to ISO/TC 274

8.1 Chair's Report

J.A. Veitch presented her report with discussion and is attached as [Appendix I](#). Action item: by March 2024, select the Canadian Head of Delegation for the 2024 plenary meeting in Milan, Italy in late June.

9. Ad hoc Subcommittees

9.1 Website Subcommittee

S. McFadden presented her report with discussion and is attached as [Appendix J](#). She noted that the CNC/CIE website continues to have an increase in usage, thanks to additional foreign access, primarily from Netherlands, probably motivated by the availability of CIE reports and public presentations. Access ranking by country is USA (1), Netherlands (2) and Canada (3). Bob Bridges, the current website service



provider, is no longer willing to maintain the website. J.A. Veitch identified another person, Will Racky, that she already used in the past, and who's willing to take over this task, including conversion to the current Joomla version, as well as migration and hosting on his own server. V. Venkataramanan expressed security concerns about staying on a database-based platform like Joomla (which is similar to Wordpress), and questioned if it's not the right time to move to a more robust platform. S. McFadden mentioned that this issue can be investigated in the first phase (out of three) of the process, but it has to be a user-friendly platform to perform updates, provide bilingualism and feature a members-only area. J. Hovis proposed that the website subcommittee meet with the new developer to discuss the various options and present a report to the board of administration to determine which of the potential options should be selected at the beginning of 2024. There was no opposition to J. Hovis's proposal. J.A. Veitch committed to an action item to meet the developer by Dec, 8th.

9.2 Lighting Course Update

J. Hovis mentioned that the course is developed with the help from various contributors, about half of which have already the PowerPoint slides almost ready (they only need some polishing), while the remaining sections need a bit more work. He hopes to do more intense work on this in the beginning of 2024, and he's optimistic for having the course ready for September 2024. He also mentioned ongoing discussions on the presentation media, particularly involving recordings.

9.3 Events Subcommittee

V. Venkataramanan mentioned that no events of particular interest happened during the last term. J. Hovis emphasized the regular CIE meetings and encouraged the members to communicate to CNC/CIE about any potentially interesting event. J.A. Veitch suggested to have a local event for 2024.

9.4 Code of Procedure Revision

S. McFadden presented her report with discussion and is attached as [Appendix K](#). She mentioned that she received feedback from the Executive Committee on the initial round of discussions. M. Mossman mentioned that the aim was to render the procedure simpler to follow, more practical and remove redundant items. S. McFadden mentioned intend to render the procedure more high-level and consistent with the revisions of the CIE code of procedure. J. Hovis said that J.A. Veitch confirmed that the NRC DG approved the proposed revision. J. Hovis asked for a vote on the revision. S. McFadden motioned the vote and J.A. Veitch seconded it and the revision was approved unanimously. Thanks were sent to S. McFadden and M. Mossman for carrying on most of this task!

10. Other Business

J. Hovis proposed to reflect on having the joint CORM-CNC/CIE-US/CIE meeting on even years, to avoid having it during the central CIE meetings. He put an action item for J.A. Veitch to talk this idea with CORM and US/CIE partners.

11. Any Other Business

11.1 Adjournment

J. Hovis adjourned the meeting at 14:08.

Liviu Ivanescu,

Secretary, Canadian National Committee of the CIE,

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



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Division Member Reports



APPENDIX A

CNC/CIE 68th Annual General Meeting

Proposed Agenda

DATE: Monday, Nov. 27, 2023

TIME: 13:00-16:00 EST [10:00 – 12:00 PST]

LOCATION: Zoom (link provided to meeting registrants)

RSVP: Ali Ghaemi
Administrator, Canadian National Committee of the CIE
Tel: 613-991-4162
Email: CNC-CIE-Secretariat@nrc-cnrc.gc.ca

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

AGENDA: (see next page)



CNC/CIE 68th Annual Meeting

27 November 2023

Agenda

- | | |
|--|------------------------------------|
| 1. Call to Order and Approval of Agenda | J. Hovis |
| 2. Minutes of the 67th Annual CNC/CIE meeting | J. Hovis |
| 2.1. Action items | |
| 2.2. Matters arising | |
| 3. President's report | J. Hovis |
| 4. Vice-President's report | J. A. Veitch |
| 5. Secretary's report | A. Ghaemi |
| 6. Treasurer's Report | S. Coyle |
| 7. Membership and Elections Subcommittees | M. Mossman |
| 7.1. M & E Subcommittee Membership | M. Mossman |
| 8. Mirror committee to ISO/TC 274 | J. A. Veitch |
| 8.1. Chair's report | J.A. Veitch |
| 9. Ad hoc Subcommittees | |
| 9.1. Website Subcommittee | S. McFadden |
| 9.2. Lighting Course Update | J. Hovis |
| 9.3. Events Subcommittee | V. Venkataramanan |
| 9.4. Code of Procedures Revision | S. McFadden/M.
Mossman/S. Coyle |
| 10. Other Business | |
| 11. Any other business | |
| 11.1. Adjournment | J. Hovis |
-

Ali Ghaemi

Administrator, Canadian National Committee of the CIE

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



APPENDIX B

CNC/CIE 68th Annual Meeting Attendees

Name	CNC/CIE Affiliation	Other Affiliation
Ali Ghaemi	Administrator	NRC-MSS
Jennifer Veitch	Vice-President, Division 3 Rep.	NRC-Construction
Jeff Hovis	President, Division 1 Rep.	University of Waterloo
Arnold Gaertner	Board of Administration	NRC-MSS
Shirley Coyle	Board of Administration, Treasurer	Cree Lighting
Kris Poduska	Member	Memorial University
Michele Mossman	Board of Administration	U of British Columbia
Sharon McFadden	Member	Retired
Venkat Venktaramanan	Board of Administration	McRae Imaging Inc.
Lorne Whitehead	Board of Administration	U of British Columbia
Sami Qutob	Board of Administration, Division 6 Rep.	Health Canada
Andrew Silbiger	Member	Andrew Silbiger Management Inc.
Cristian Suvagau	Board of Administration, Division 4 Rep.	BC Hydro
Li-Lin Tay	Member	NRC-MSS
Liviu Ivanescu	Member, upcoming secretary	NRC-MSS
Joanne Zwinkels	Member at large	Retired from NRC-MSS



APPENDIX C

Action Items from the 68th Annual Meeting of the CNC/CIE

Action Item	Responsible	Action	Status
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. Venkaramanan and C. Suvagau	V. Venkaramanan and C. Suvagau will get in touch with contacts in Western Canada about joining the CIE with the intention of improving geographic representation.	OPEN
2022-AI-1	S. Coyle	S. Coyle will follow up with the CIE-CB about the missing wire transfer of funds from the CIE-CB account to the CNC/CIE account.	OPEN
2022-AI-3	S. Coyle	S. Coyle will contact TD Bank about the different products available (i.e., high-interest savings account, GICs, etc.) to offset the cost of inflation.	OPEN
2023-AI-1	J.A. Veitch	By March 2024, select the Canadian Head of Delegation for the 2024 plenary meeting in Milan, Italy in late June.	OPEN
2023-AI-2	J.A. Veitch	Meet the website developer by Dec, 8 th , 2023, to discuss platform options	OPEN
2023-AI-3	J.A. Veitch	J. Hovis proposed to reflect on having the joint CORM-CNC/CIE-US/CIE meeting on even years, to avoid having it during the central CIE meetings. J.A. Veitch has an action item to discuss this idea with CORM and US/CIE partners.	OPEN



APPENDIX D

CNC/CIE President's Report

November 27, 2023

Jeff Hovis

jhovis@uwaterloo.ca

It has been a busy year for everyone, and I want to thank everyone who contributed their time and energy to the CNC and CIE this year.

The CNC-CIE Board of Administration met online 4 times in the past year. If you have an issue that needs to be discussed by the Board, bring it to one of the board members' attention or email [CNC-CIE-Secretariat](#), and we will add it to the agenda for the next meeting.

On behalf of the CNC, I thank Deborah Gottesman for her talk on the challenges of incorporating daylight into buildings at the end of last year's annual general meeting. We should consider incorporating a public lecture at the end of the session when there is no joint meeting with the USNC.

I had a web conference with Daria Sochinskaia and Eldjie Kamto from International Relations at the National Research Council in mid-March regarding our annual performance review. No concerns were expressed.

Robin Atkins was elected as the Canadian Division 8 member in late March.

The CIE has made several datasets available. They can be found at [Data Sets and Colour Matching Functions](#).

Highlights from the 30th Quadrennial Session

As you know, the CIE has adopted a new Code of Procedures, and one of the significant changes is in the organizational structure. There is now the Governing Board, which is responsible for the core governance of the CIE and the Technical Management Board, which is responsible for coordinating the technical work. The new members were installed at the annual meeting in September with Jennifer Veitch as President. The other members are listed on the [CIE Website](#).

There are also new staff at the Central Office.

Secretary General: Diana Wernisch

Technical Manager Liaison Officer: Shahidul Islam

Office Administrator: Lavinia Lutai

On the financial side, a deficit is forecast for this year and next, but the reserves are adequate to cover the shortfall. The dues formula was modified to take inflation into account, and a change was made in the formula used to calculate the dues for individual countries. The dues formula is based on the United Nations (UN) formula for calculating a country's contribution to the UN, and the UN changed one of the coefficients some time ago, so the CIE needed to update their version.

The publication selected for distribution to the members was "Visual Aspects of Time-Modulated Lighting Systems."

The [CIE Research Strategy](#) was reviewed.

The CNC was well-represented in the Scientific and Technical Sessions

Jennifer Veitch presented an invited talk on the CIE's Research Strategy and an oral presentation on light sensitivity in the workplace. She was a co-convenor for a workshop on lighting for preparedness.

Lorne Whitehead presented an update on the progress on TC1-98 in a workshop and the Division 1 meeting.

Liviu Ivanescu and I each had a poster.



Based on feedback from members of CORM, USNC and CNC, we decided to have The Joint Conference with USNC and CORM online. It was very successful, with 37 presentations. There were 101 registrants, and the total money from the registration fee was \$4900.

I want thank

Sharon McFadden for managing the registration.

Ali Ghaemi for collecting and collating the abstracts.

Jennifer Veitch for hosting the conference.

And my colleagues on the organizing committee

Luke Sandilands, Mike Jergens, Angelo Arecchi, Mark Duffy

If you are interested in learning more about CIE Technical Committees and what they do, you should check out the webpage "Getting Involved Technical Work" <https://cie.co.at/technical-work/getting-involved-technical-work>. There is also a brochure that you can download that overviews the CIE https://files.cie.co.at/CIE_Brochure_July_2022.pdf.

Upcoming meetings

CCPR/CIE Joint Workshop -100 Years of $V(\lambda)$ and Future of Photometry June 3, 2024, at BIPM, Sevres, France

CIE Midterm Meeting, CIE 2025, Vienna, Austria, July 4-12, 2025

The 31st Quadrennial Session of the CIE, Nanjing, China, July 9-17, 2027

Finally, it has been a privilege and pleasure to serve as President of the CNC for the last four years, and I truly enjoyed working with each of you. The CNC has a long history of making significant contributions to the CIE and standards development, and I know that these contributions will continue.



APPENDIX E

CNC/CIE Vice-President's Report

November 2023

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/CIE, this year I undertook five tasks.

1. I supported the co-ordination and administration of the CNC/CIE as an outreach activity within NRC Metrology. Dr. Li-lin Tay, Team Lead of the Photometry and Spectrophotometry team, has overall responsibility for the CNC/CIE as an activity.
2. I assisted as needed to support the President, Administrator, and Treasurer in the ongoing work of CNC/CIE business. This includes monitoring the CNC/CIE mailbox when the Administrator is unavailable, confirming that our procedures (e.g., for ballots) follow our Code of Procedure, and contributing to various discussions.
3. 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.
4. 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.
5. My contribution to the CNC/CIE hosting of the biennial joint conference of the CNC/CIE, NC US/CIE and CORM was to provide the Webex account on which we conducted the online conference, including setting up webinars for the three days, coordinating with Sharon McFadden to obtain the registration list, sending webinar invitations, and serving as meeting Host throughout the conference.



APPENDIX F

CNC/CIE Secretary's Report

November 2023

Ali Ghaemi

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

I have acted as the CNC/CIE Secretary since October 2021. The tasks completed over the last year are listed below. Liviu Ivanescu will be the new Secretariat once the ballot for his nomination is voted on.

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 Collaboration Tools. 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 2021/22 were
 - i. NC LB2104 Selection of a CIE publication for distribution by NCs and ANCs in 2023: publication *CIE 243:2021 Discomfort Glare in Road Lighting and Vehicle Lighting* was selected and made available to 33 members, 10 members requested a copy of the publication.
 - ii. LBs NC2305, BA2307, D01-2301 Ballot on ISO/CIE DIS 11664- 5:2023: Comments submitted.
 - iii. LBs NC2208, BA2234 and D02-2211 Ballot on ISO/CIE FDIS 23539:2022 of TC 2-93: Approved.
 - iv. LBs BA2322, D01-2306 Ballot on ED/TR of TC 1-84: Comments submitted.
 - v. LB NC2307 Approval of Date and Location for the next Midterm Meeting of the CIE, CIE 2025: Comments submitted.
 - vi. LBs BA2306, D03-2302 Ballot on ED/TR of TC 3-56: Comments submitted.
 - vii. LBs BA2310, D01-2302 Ballot on ED/TR of TC 1-91: Comments submitted.
 - viii. LBs BA2312, D01-2303 Ballot on ED/TR of TC 1-92: Comments submitted.
 - ix. NC2302, BA2301, D03-2301 Ballot on ISO/CIE DIS 10916:2023: Comments submitted.
 - x. NC2304, BA2305, D02-2301, D06-2302 Ballot on CIE DIS 017-SP2:2023 of JTC 19(D6/D2): Comments submitted.
 - xi. NC2308, BA2314, D01-2304 Ballot on ISO/CIE DIS 23603.2:2023: Comments submitted.
 - xii. NC2301 and D04-2301 Systematic Review (SR) of ISO/CIE 8995- 3:2018



"Lighting of work places —Part 3: Lighting requirements for safety and security of outdoor work places": Comments submitted.

xiii. LBs NC2306, BA2308, D06-2303 Ballot on ISO/CIE DIS 28077:2023: Comments submitted.

- 3- **Annual Performance Review of the CNC/CIE:** The president provided the completed APR questionnaire to report on the 2022 calendar year to the International Innovation Office of the National Research Council.
- 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 (33), Affiliates (70), Board of Administration (12) and All (103). 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 a related information.



APPENDIX G

CNC/CIE Treasurer's Report to the CNC/CIE 68th Annual Meeting

27 November 2023

Shirley Coyle

scoyle6889@gmail.com

The financial statement for the period 31 Oct 2022 to 31 October 2023 is presented below.

Opening Balance (31 October 2022)	\$25,292.39
Income	\$0.00
Total Income	\$0.00
Expenses	\$0.00
Total Expenses	\$0.00
Net Income (Loss)	\$0.00
Ending Balance (October 28 2022)	\$25,292.39

Note: Income and expenses from Nov 2023 CORM-CNC/CIE-CIE-USNC Biennial Joint Conference occurred outside the date range covered in this annual report (Total conference revenue was \$4911.72, with 50% to be kept by CNC/CIE and 50% to be paid out to CORM. Payment was initiated by Eventbrite to CNC/CIE's bank account Nov. 9, 2023.

Respectfully submitted,

Shirley Coyle Treasurer, CNC/CIE



APPENDIX H

CNC/CIE Membership Subcommittee – Chair’s Report

November 2023

Michele Mossman

michele.mossman@ubc.ca

Current CNC/CIE Membership

The current membership includes:

- 12 Members of the CNC Board of Administration
- 33 Members (includes the 12 Members of the Board of Administration)
- 70 Affiliates

The current CNC/CIE Board of Administration Members are:

<u>Member name</u>	<u>Board of Administration role</u>	<u>Term expires</u>
Jeff Hovis	President and Division 1 member	2023
Jennifer Veitch	Vice President and Division 3 member	2023
Ali Ghaemi	Secretary	2023
Shirley Coyle	Treasurer	2023
Joanne Zwinkels	Division 2 member	2023
Cristian Suvagau	Division 4 member	2023
Sami Qutob	Division 6 member	2023
Robin Atkins	Division 8 member	2022
Arnold Gaertner	Member at Large	2023
Michele Mossman	Member at Large	2024
Venkat Venkataramanan	Member at Large	2023
Lorne Whitehead	ex-officio, CIE Vice President	2023

Geographic representation: The CNC aims to have as diverse geographic representation as possible. Currently, the geographic representation of the 33 CNC Members is: British Columbia (7), Newfoundland (1), Ontario (21), Prince Edward Island (1), and Quebec (3).

Changes to membership

Earlier this year, we were deeply saddened to learn of the passing of long-time CNC Member Ian Ashdown. Ian’s significant contributions in the field of lighting design, research and development, and software engineering are detailed [here](#). He is greatly missed, as both a colleague and a friend.

Tara Akhavan relocated to a new position outside of Canada earlier this year, so she has stepped down from the role as CNC Member and Division 8 member. On behalf of the CNC, the Executive committee would like to express their sincere appreciation to Tara for her contributions to the CIE during her tenure.

In March 2023, we welcomed Robin Atkins to the CNC Board of Administration, in the role as Division 8 member until December 2027.

Four Affiliates were removed from the list during 2023, either because of relocation or because we were no longer able to reach them at their contact email address.

Membership nominations:

Many of our CNC membership positions are aligned with the central CIE quadrennial calendar, and as a result these terms all expire at the end of this year. Nominations will be circulated by e-mail following the AGM and



positions will be filled via an email ballot. We will ensure that the nomination, balloting, and voting processes are conducted in accordance with revisions to the Code of Procedures.

Members: The following members whose current terms expire at the end of 2023 have confirmed they are willing to renew for another 4-year term:

- Chrisnel Blot
- Pierre Gallant
- Kurt Ising
- Sharon McFadden
- Thomy Nilsson

Board of Administration Members: The following BA members whose current terms expire at the end of 2023 have confirmed they are willing to renew for another 4-year term:

- Arnold Gaertner (member at large)
- Venkat Venkataramanan (member at large)
- Lorne Whitehead (member at large)

As the new Division Member and Officer terms are confirmed, we will also confirm whether any individuals retiring from their role as Division Member or Officer would be willing to remain on the Board of Administration as members at large. These details will be confirmed as part of the e-mail balloting process.

Division Members: The current terms for Division 1, 2, 3, 4, & 6 members expire at the end of this year. We have confirmed nominations for some of the positions and are seeking interested nominees for others:

- Division 1: Seeking nominees
- Division 2: Liviu Ivanescu has agreed to be nominated.
- Division 3: Jennifer Veitch is willing to renew.
- Division 4: Seeking nominees (Cristian Suvagau is willing to renew.)
- Division 6: Sami Qutob is willing to renew.
- (Division 8: Robin Atkins was elected to this role in March 2023, until December 2027.)

Officers: The following Officer positions expire at the end of this year:

- President: Jeff Hovis is stepping down at CNC President at the end of this current term. We are tremendously grateful for Jeff's leadership in this role. Cristian Suvagau has agreed to be nominated for this position.
- Vice President: Jennifer Veitch is willing to renew.
- Treasurer: Shirley Coyle is willing to renew.
- Secretary: Liviu Ivanescu will be taking over the Secretariat duties and will be nominated as Secretary.

Additional membership activities for consideration during 2024:

- The task group updating the Code of Procedures has continued its work, and once the revisions have been finalized and approved, we will update the membership database to be consistent with any changes in the Code of Procedures that relate to membership.
- We have previously discussed identifying individuals as Affiliate Division members, to enable greater collective effort and continuity by CNC participants in support of Division activities. Once the new Division member terms are confirmed, we will resume this effort.
- Geographic representation remains a priority and we will continue our efforts to increase membership from Alberta, Saskatchewan, and Manitoba, as well as Atlantic Canada. We have the option to recruit up to 4 additional Members at Large for the Board of Administration, which is an opportunity to increase diversity on the Board, including geographic representation.
- We made good progress on filling in missing mailing address information on the membership database. There are still some details to complete, and we will continue this effort during 2024.



APPENDIX I

MC-ISO-TC 274 Chair's Report

November 27, 2023

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: Shirley Coyle
Chad Greene
Toby Lau
Sharon McFadden
Sami Qutob
Conor Sampson
Cristian Suvagau

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>.

New Division members elected to the CNC/CIE in 2023 will be asked to enroll as members of MC-ISO-TC274.

B. Activities

1. Ballots

Since Nov. 21, 2022, I have cast 22 ballots and/or comments on behalf of the committee (see Table A for the full report), following discussions by e-mail with committee members or through the SCC Hub. We missed the deadline for two ballots for which we had no input to provide. There are two open ballots at present:

- ISO/CIE DIS 8995-1 *Light and lighting — Lighting of work places — Part 1: Indoor* Due 2023-01-03
** As I was an author, I would greatly appreciate reviews by others before we cast this ballot.
- Systematic Review of ISO/TC 21274:2020 *Commissioning of Lighting Systems in Buildings* due 2024-02-18

I thank the committee members for their participation. 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 a hybrid one, with the in-person attendance in Tokyo and others attending online. Toby Lau served again as our Head of Delegation, attending in person with funding from the SCC. Conor Sampson attended virtually.

The 2024 plenary meeting is expected to be held in Milan, Italy in late June.

Decision to be taken: Who will represent Canada as our Head of Delegation at the 2024 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	
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 completed ISO/CIE 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	The document was published in September 2023.
ISO/TC 274 WG 2	Commissioning process of lighting systems	T. Lau	Project (ISO/AWI TR 5911) will produce an ISO Technical Report to supplement ISO/TS 21274 .
ISO/TC 274 JWG 5 [CIE JTC 15 (CIE-ISO)]	Lighting for workplaces	J. Veitch	The DIS ballot will close in early January 2024.
ISO/TC 163	Liaison representative 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 representative from ISO TC 274 to ISO TC 205/WG10	T. Lau	.
ISO /TC 274	Liaison representative from ISO TC 274 to ISO TC 205/WG 7	C. Sampson	
ISO/TC 205/JWG 12	ISO/TC 274 co-convenor	C. Sampson	Conor co-leads this joint working group, acting from the TC 274 side. It is still developing its ways of working.

C. Relations between the CNC/CIE and SCC:

1. Mirror committee accreditation and funding

In December 2022, on our behalf, I completed our annual [Application for Committee Accreditation \[Annex C ?\]](#) and Financial Assistance for the fiscal year 2023-24. It is not appended because there were minimal changes from the prior year. We were [successful, although neither scores nor rankings were reported this year. We receiving \\$5000 from the SCC in addition to \\$4000 in support from external stakeholders, BC Hydro and CSA. This enabled us to support Toby Lau's attendance at the plenary in Tokyo in June and Conor Sampson's attendance at the ICO/TC 205 meetings in Atlanta in September.](#)

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

I reported this last year and have made no progress on this item. I was waiting for the CNC/CIE Secretary to become comfortable in the role before formally adding these new tasks. Now that we are again without a Secretary of the CNC/CIE, I will again set this aside until there is greater stability.



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 continue to 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

Staff at the SCC seem to be as overloaded as we volunteers. Sometimes it is difficult to reach them, and some ballot postings have had very short lead times. Keeping on top of this committee is among the most challenging of my roles.



Table A – Record of MC-ISO-TC274 Voting between 2022-11-21 and 2023-11-27

Item #	Title	Circulated	SCC due date	Questions	Vote	Date ballot cast
N816	Call for comments ISO/NP 20734	2022-12-03	2022-12-05	Do you have comments on ISO/NP 20734? Yes (please provide comment table) * No (*) A Comment is required for this answer value.	No	2022-12-15
N813	ISO/CIE FDIS 23539 "Photometry — The CIE system of physical photometry"	2022-11-25	2022-12-16	1 Do you have comments to ISO/CIE DIS 23539 "Photometry — The CIE system of physical photometry" Yes (please provide comment table) * No (*) A Comment is required for this answer value.	No	2022-12-15
N814	ISO/TC 205 the Committee Draft ballot for ISO/CD 16813 "Building environment design — Indoor environment — General principles"	2022-11-25	2022-12-16	1 Do you have any comments related to the Committee Draft? Yes* * No Abstention (*) A Comment is required for this answer value.	Yes, comments provided	2022-12-15
N818	ISO/CIE CD 8995-1 Lighting of work places — Part 1: Indoor	2022-12-17	2023-01-28	No. Question Possible options 1 Do you have any comments related to the Committee Draft? Yes* No Abstention (*) A Comment is required for this position. ISO/IEC commenting template.	Yes	2023-01-28
N828	Call for liaison representative to ISO/TC 269/SC1	2023-02-15	2023-03-06	Do you want to nominate a a ISO/TC 274 liaison representative to ISO/TC 269/SC 2 "Rolling stock" Yes * No (*) A Comment is required for this answer value	None	
N830	Ballot on change Liaison Representative for ISO/TC 268/SC 1	2023-03-08	2023-03-27		yes	2022-03-26
	Request to extend project ISO/CIE 10916	2023-03-17	2023-04-02	Do you approve Draft Resolution 145 (limit date extension for ISO/CIE 10916)? Yes No * Abstention	yes	2023-03-31



Item #	Title	Circulated	SCC due date	Questions	Vote	Date ballot cast
	ISO/CIE DIS 10916 Light and lighting – Energy performance of lighting in buildings — Calculation of the impact of daylight utilization	2023-02-03	2023-04-14	No. Question Possible options 1 Do you approve the technical content of the final draft? Approval Approval with corrections* Disapproval* Abstention (*) A Comment is required for this position. ISO/IEC commenting template.	Approval	2023-04-14
	Comment on CIE DIS_IS 017-SP2:2023 of CIE_JTC19	2023-03-13	2023-04-18	Do you have any comments on the document CIE DIS_IS 017-SP2:2023? Yes * No Abstention	No	2023-04-18
	Confirmation of title and initial terms of reference for ISO/TC 205/JWG 12	2023-03-28	2023-04-25	Do you approve Draft Resolution 146/2023? Yes No * Abstain	Yes	2023-04-24
	ISO DTS 7127 BIM properties for lighting	2023-03-20	2023-05-01	No. Question Possible options 1 Do you approve the draft for publication? Approval Approval with comments* Disapproval* Abstention (*) A Comment is required for this position.	Approval	2023-05-01
N844	Call for representative in the ISO Smart Farming Coordinating Committee (SFCC)	2023-04-16	2023-05-07	1 Do you want to nominate a a ISO/TC 274 representative for the ISO Smart Farming Coordinating Committee (SFCC)? Yes (please include a CV) * No	No	2023-05-05
N847	Call for representative in the ISO/TC269/S C2 (SFCC)	2023-04-20	2023-05-11	Do you agree with draft resolution 147/2023? Yes No (*please provide reason) * Abstain	Yes	2023-05-05



Item #	Title	Circulated	SCC due date	Questions	Vote	Date ballot cast
	Systematic Review of ISO/CIE 8995-3:2018 Lighting of work places — Part 3: Lighting requirements for safety and security of outdoor work places	2023-01-15	2023-05-21	<p>Recommended action Withdraw * Revise/Amend * Confirm Abstain due to lack of consensus Abstain due to lack of national expert input Stabilize</p> <p>2 Has this International Standard been adopted or is it intended to be adopted in the future as a national standard or other publication? Yes * No * If not, what is used instead</p> <p>3 Is the national publication identical to the International Standard or was it modified? 1 Identical Modified *</p> <p>4 If this International Standard has not been nationally adopted, is it applied or used in your country without national adoption or are products/processes/services used in your country based on this standard? 2 Yes No *</p> <p>5 Is this International Standard, or its national adoption, referenced in regulations in your country? Yes No *</p> <p>6 If the committee decides to revise or amend, do you propose an expert and/or project leader for the development of that project? Yes (name(s) and proposed role(s): expert or project leader) * No</p> <p>(*) A Comment is required for this answer value. ISO/IEC commenting template. (1) This question only appears if the answer to question 2 is "Yes" (2) This question only appears if the answer to question 2 is "No"</p>	<p>1. Revise/amend 2. No; So far as we are aware, there are no specific recommendations like this. The closest document to this of which we are aware are a set of guidelines from the RCMP: https://www.rcmp-pc-grc.gc.ca/physec-secmat/pubs/gc-psg-gsmgc-004-eng.htm?wbdisable=true. 3. N/A 4. Not so far as we are aware. 5. No. 6. No, although if a project were to start we would look for a suitable expert to serve as a member.</p>	2023-05-18
N853	Call for experts - ISO/IEC committees working on UV	2023-05-11	2023-05-29	<p>1 Do you want to nominate a a ISO/TC 274 liaison representative to IEC/TC 34/WG 23? Yes (please include a CV) * No</p> <p>2 Do you want to nominate a a ISO/TC 274 liaison representative to IEC/TC 61? Yes (please include a CV) * No</p> <p>3 Do you want to nominate a a ISO/TC 274 liaison representative to IEC/TC 76? Yes (please include a CV) * No</p> <p>4 Do you want to nominate a a ISO/TC 274 liaison representative to ISO/TC 142? Yes (please include a CV) * No</p>	<p>No No No No</p>	2023-05-31



Item #	Title	Circulated	SCC due date	Questions	Vote	Date ballot cast
N841	Commenting on ISO-CIE_DIS 28077	2023-04-05	2023-05-30	Do you have any comments on the document ISO-CIE DIS 28077? Yes * No Abstention	No Remark to SCC: Canada's comments were submitted through the CIE already.	2023-05-31
N842	Commenting on ISO-CIE DIS 11664-5	2023-04-05	2023-05-30	Do you have any comments on the document ISO-CIE DIS 11664-5 ? Yes * No Abstention	No	2023-05-31
	ISO DTR 5911 Commissioning of lighting systems in buildings – Explanation and justification of ISO/TS 21274	2023-05-05	2023-06-16	No. Question Possible options 1 Do you approve the draft for publication? Approval Approval with comments* Disapproval* Abstention (* A Comment is required for this position. ISO/IEC commenting template.	Approval with comments	2023-06-17
	Commenting on ISO/CIE DIS 23603 "Standard method of assessing the spectral quality of daylight simulators for visual appraisal and measurement of colour", 2nd	2023-07-03	2023-07-17	Commenting on ISO/CIE DIS 23603 "Standard method of assessing the spectral quality of daylight simulators for visual appraisal and measurement of colour", 2nd ED 1 Do you have comments to ISO/CIE DIS 23603? Yes * No Abstention (* A Comment is required for this answer value.	No	
	Railway applications - Interior electrical lighting for mainline passenger rolling stock	2023-07-13	2023-08-27	Railway applications -- Interior electrical lighting for mainline passenger rolling stock 1 Do you wish to provide comments on ISO/NP 23299? Yes * No (* A Comment is required for this answer value.	Yes	2023-08-28
	Experts for TF BIM in ISO/TC 274/JWG 1	2023-08-09	2023-09-06	Do you want to nominate experts to participate in the TF BIM in ISO/TC 274/JWG 1? Yes (incl. E-Mail) * No (* A Comment is required for this answer value.	Yes Maura Gatensby <mgatensby@ai bc.ca>	2023-09-07
	ISO DTR 25555 survey	2023-09-15	2023-09-29	Survey for comments on ISO/DTR_25555 Do you have comments on the document ISO/DTR 2555? Yes * No	No	2023-10-03
	SR IS 15469 / CIE S011	2023-08-28	2023-10-19	1 Do you have any comments on the SR on ISO 15469/CIE S 011 (Ed 2)? Yes * No Abstention	No	2023-10-19



APPENDIX J

CNC/CIE Website Report

November 2023

Sharon McFadden and Jennifer Veitch

Domain

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

Usage

Usage increased slightly over the past year. During the last 12 months we averaged 305 unique visits and 375 visits per month as compared to 279 unique visits and 360 visits in 2022. About 15% of the visits or 53 per month lasted longer than 30 seconds. On average, 6 pages were viewed per visit. The most visitors were from the United States with the Netherlands second and Canada third.

Eight members logged into the members only area at least once during the past year. Members can retrieve their usernames and passwords using the built-in retrieval facility, or they may contact the Secretariat for more information.

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.

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

History of Lighting in Canada

No progress was made on the project this year. 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.

Maintenance

The cost for the domain registration has been \$26.50 annually. Hosting and support services cost \$75 annually. However, the individual providing this support does not wish to continue in that role. Moreover, the site needs to be moved to an updated platform as the version of Joomla we have been using is no longer supported and poses a security risk. Our current provider is not able to perform this service, so the time has come to make other arrangements. We should be prepared that the costs will increase as a result.

We have identified a consultant based in Ottawa who is willing to consider this small job. He proposes a phased approach to the change:

Phase 1 – Clone existing and test it. This would be 15 hours \$ \$60/hr, or \$900.

This would provide enough info to determine the difficulty and time required for the big task of the change.

Phase 2 – Making it work on the new platform, fixing any problems.

Phase 3 – Temporary staging for testing, then migrate to his server and launch.

Followed by...

Ongoing hosting TBD, following further discussion.



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



Canadian National Committee Comité national canadien

Our immediate request is for approval to contract with the consultant for Phase 1, estimated cost \$900. Once he has looked more at what we have and need, he will return with an estimate for the other phases and ongoing hosting.

The proposed contractor is well known to Jennifer; for over 5 years, he has provided web hosting and e-mail services to a small business with which she is affiliated. He is efficient, prompt, and friendly.



APPENDIX K

Code of Procedures Revision (CoP)

November 2023

S. McFadden/M. Mossman/S. Coyle

Proposals for changes to CoP

2016 Code of Procedure	Proposed 2022 Terms of Reference	Comments
Code of Procedure	Terms of Reference	The title "Terms of Reference" describes the content of this document more accurately.
1. Background	1. Background	
<p>The International Commission on Illumination (abbreviated as CIE from its French title Commission internationale de l'éclairage) is a scientific, technical and cultural, non-profit organization devoted to international cooperation and exchange of information among its member countries on all matters related to the science and art of light and lighting. The national adhering body for Canada is the National Research Council (NRC) which, within its allocated Grant budget for international affiliations, pays Canada's annual contribution to the CIE. However, subject to the level of the annual Treasury Board grant for international affiliation dues as well as consultation with the Committee on International Science, Engineering and Technology (CISSET), NRC retains the right to determine the level of its contribution or to terminate it.</p> <p>The Secretariat for the Canadian National Committee of the CIE (CNC/CIE) is administered as an outreach activity in the NRC Metrology Research Centre (METRO), where it is in the responsibility of the Team Lead of the Photometry and Spectrophotometry team</p>	<p>The International Commission on Illumination (abbreviated as CIE from its French title Commission Internationale de l'Eclairage) is a scientific, technical and cultural, non-profit organization devoted to international cooperation and exchange of information among its member countries on all matters related to the science and art of light and lighting. The national adhering body for Canada is the National Research Council (NRC).</p> <p>The responsibility for performing the duties of representing the views of the Canadian lighting community within the CIE and communicating news about the CIE to the Canadian lighting community rests with the Canadian National Committee of the CIE (CNC/CIE).</p> <p>The CNC/CIE reports to the Director General of the NRC Metrology Research Centre (METRO) or their delegate. The delegate is currently the Director of Research & Development with responsibility for Photometry and Spectrophotometry.</p> <p>This document specifies the terms of reference for the CNC/CIE.</p>	This clause replaces Clauses 1 & 2.
2. Objectives of the CIE		
<p>The objectives of the CIE, as expressed in its Statutes, are:</p> <ol style="list-style-type: none"> To provide an international forum for the discussion of all matters relating to the science, technology and art of light and lighting and for the interchange of information in these fields between countries. To achieve these goals the Commission organizes scientific educational events and holds CIE Sessions, normally every four years. 		Clause 2 has been removed as it overlapped with Clause 1, the objectives of the CIE are in the process of being updated and they don't need to be a part of our document. The higher level statement in Clause 1 is sufficient.



<ol style="list-style-type: none"> 2. To develop basic standards and procedures of metrology in the fields of light and lighting. 3. To provide guidance in the application of principles and procedures in the development of international and national standards in the fields of light and lighting. 4. To prepare and publish proceedings, standards, technical reports and other publications concerned with all matters related to the science, technology and art of light and lighting. 5. To maintain liaison and technical interaction with other international organizations concerned with matters related to the science, technology, standardization and art in the fields of light and lighting. 		
<p>3. Terms of Reference of the CNC/CIE</p>	<p>2. Purpose of the CNC/CIE</p>	
<p>The Terms of Reference of the CNC/CIE are:</p> <ol style="list-style-type: none"> 1. To collect and reconcile the many views of the Canadian lighting community on relevant issues. This community includes, but is not limited to, organizations in the government, university and private industry sectors. 2. To represent these views to CIE and internationally through participation in CIE activities, including by responding to all National Committee ballots of the CIE. 3. To identify, represent and promote the capabilities and distinctive competence of its Canadian lighting community internationally. 4. To enhance the depth and breadth of the participation of the Canadian lighting community in the activities and events of the CIE and related organizations. 5. To establish the mechanisms for communicating to the Canadian lighting community the views of the CIE and information about activities of the CIE. 6. To distribute appropriate documentation, including the newsletter of the CIE. 7. To attract and stage international events of value to the Canadian lighting community. 	<ol style="list-style-type: none"> 1. To collect and reconcile the many views of the Canadian lighting community on relevant issues. This community includes, but is not limited to, organizations in the government, university and private industry sectors. 2. To represent these views to CIE and internationally through participation in CIE activities, including by responding to all National Committee ballots of the CIE. 3. To identify, represent and promote the capabilities and distinctive competence of its Canadian lighting community internationally. 4. To enhance the depth and breadth of the participation of the Canadian lighting community in the activities and events of the CIE and related organizations. 5. To, where possible, encourage and support students with an interest in light and lighting. 6. To establish the mechanisms for communicating to the Canadian lighting community the views of the CIE and information about activities of the CIE. 7. To distribute appropriate documentation, including the newsletter of the CIE. 8. To attract and stage local and international events of value to the Canadian lighting community. 9. To support the Standards Council of Canada by providing the core of the membership of the Canadian mirror 	<p>An additional point about encouraging students has been added. The final paragraph has been moved to Clause 1.</p>



<p>8. To support the Standards Council of Canada by providing the core of the membership of the Canadian mirror committee to ISO TC 274 – Light and Lighting (SMC-ISO-TC-274).</p> <p>The CNC/CIE reports to the General Manager of MSS or his/her delegate. The delegate is currently the MSS Program Lead for the Program on Scientific Support for the National Measurement System (SSNMS) and the report is prepared using the MSS SSNMS Briefing Note form (Annex A).</p>	<p>committee to ISO TC 274 – Light and Lighting (SMC-ISO-TC-274).</p>	
<p>4. Secretariat</p>	<p>3. Secretariat</p>	
<p>The Secretariat of the CNC/CIE is located at the NRC</p>	<p>The Secretariat of the CNC/CIE is administered as an outreach activity in the NRC Metrology Research Centre (METRO), where it falls under the responsibility of the Team Lead of the Photometry and Spectrophotometry team. It is located at NRC.</p>	<p>The first paragraph has been moved here from Clause 1.</p>
<p>5. Membership</p>	<p>4. Membership</p>	<p>The order of the membership categories has been switched.</p>
<p>Because the Government of Canada maintains the country's membership in the CIE on behalf of all Canadians, there shall be no fee to join the CNC/CIE.</p>		<p>Moved to Clause 11 (finance)</p>
<p>5.1 Affiliate Category</p>	<p>4.2 Affiliate Category</p>	
<p>The Affiliate category of CNC/CIE membership is open to any person resident in Canada with a demonstrated interest in any aspect of the science, technology or art of light and lighting. Applications for Affiliate status will consist of a cover letter describing the individual's expertise and interest in the work of the CIE (e.g., experience in the lighting industry, relevant research interests, etc.). The judgement of the suitability of the applicant for Affiliate status rests with the Membership Subcommittee. Affiliates will receive regular mailings from the CNC/CIE. They are eligible to volunteer on CNC/CIE subcommittees and to put their names forward to participate in the technical work of the CIE. Affiliates do not have voting rights in any decisions of the CNC/CIE</p>	<p>The Affiliate category of CNC/CIE membership is open to any person resident in Canada with a demonstrated interest in any aspect of the science, technology or art of light and lighting. Affiliates do not have voting rights in any decisions of the CNC/CIE, but they can volunteer on subcommittees, review technical reports and standards, and put their names forward to participate in the technical work of the CIE.</p>	<p>Based on everyone's input, anyone who is interested can become an affiliate. The only restriction is that they be a resident of Canada. Thus there appears to be no need to require any sort of application process in this document.</p>
<p>5.2 Member Category</p>	<p>4.1 Members</p>	
<p>There may be any number of Members. Members are experts in a field or fields within the scope of the CIE and assist in the fulfillment of Canada's duties as a Member of the CIE. Members must be normally reside in Canada. As needed, the CNC/CIE appoints Members on the advice of the Elections Subcommittee, with the aim of ensuring adequate representation of all interests (see Clause 7.2). Any individual who is a member of any CIE committee, task group, working group,</p>	<p>Members are experts in a field or fields within the scope of the CIE. Members must normally reside in Canada. The duties of Members are to:</p> <ol style="list-style-type: none"> 1. contribute their views about matters relating to the work of the CIE and CNC/CIE by participating in ballots circulated from time to time by the Secretariat or by a Canadian CIE Division Member; 	<p>Details about specific categories of Member have been moved to new sections 4.1.1 and 4.1.2</p>



<p>or technical committee, as well as members of SMC-ISO-TC-274, will be appointed as a CNC/CIE Member.</p> <p>The term of office of a Member is normally four years and is renewable subject to review by the CNC/CIE (see Clause 7.2). Shorter terms may be approved to maintain reasonable staggering. Those appointed by virtue of service to CIE or to SMC-ISO-TC-274 shall remain Members for the duration of their service.</p> <p>The duties of Members are to contribute to the objectives of the CNC/CIE as set out in Clause 3. Examples include assisting at least one official Canadian Member of a CIE Division in his/her duties; casting ballots to comment on or to approve documents, as requested from time to time by the CNC/CIE Secretary; or serving on a CIE Technical Committee.</p> <p>Members have full voting rights on all matters before the CNC/CIE.</p>	<ol style="list-style-type: none"> 2. assist the CNC/CIE in the dissemination of news about CIE matters within their networks; and 3. support the purpose of the CNC/CIE as laid out in Clause 2. <p>When accepting membership in the CNC/CIE, a member agrees to comply with the CNC/CIE Terms of Reference and CIE Code of Ethics.</p> <p>Members have full voting rights on all matters before the CNC/CIE.</p>	
	<p>4.1.1 Regular Members</p>	
	<p>Any individual who is an expert in a field or fields within the scope of the CIE and is willing to assist in the fulfilment of Canada's duties as a Member of the CIE may submit a membership application to the CNC/CIE secretariat.</p> <p>Members are appointed by the CNC/CIE, after a formal election process, with due consideration to ensuring adequate technical and geographic representation. Members who no longer wishes to participate in the work of the CNC/CIE should inform the Membership Committee that they wish to resign.</p> <p>Members may be expelled from the CNC/CIE for failure to comply with the membership conditions or due to conduct impairing the interests of the CNC/CIE. Expulsion shall be decided by the CNC/CIE.</p>	<p>The requirement for members to be re-elected every four years has been removed. There is a general consensus that it serves little purpose and, at least as previously specified, is administratively intensive.</p>
	<p>4.1.2 Members of CIE Committees and SMC-ISO-TC-274</p>	
	<p>An individual, who is a member of a CIE committee, task group, working group or technical committee, or a member of SMC-ISO-TC-274, will be appointed as a CNC/CIE Member.</p> <p>Members appointed by virtue of service to CIE or to SMC-ISO-TC-274 shall remain Members for the duration of their service.</p>	
<p>6. Governance</p>	<p>5. Governance</p>	
<p>6.1 Board of Administration</p>	<p>5.1 Board</p>	
<p>The CNC/CIE Board of Administration is the principal decision-making body of the CNC/CIE. It shall consist of not more than nineteen members. The membership of this body shall include:</p> <ul style="list-style-type: none"> • the Officers (see Clause 6.2) 	<p>The Board is the principal decision-making body of the CNC/CIE. It shall consist of not more than nineteen members. The membership of this body shall include:</p> <ul style="list-style-type: none"> • the Officers (see Clause 5.2), 	<p>The name has been changed to "Board". The duties of the BA have been updated to reflect the fact that they are the governing board of the CNC/CIE</p>



<ul style="list-style-type: none"> the Division Members of CIE Divisions (see Clause 6.4) up to seven Members-at-large (see Clause 6.5) <p>The CNC/CIE Board of Administration includes the following ex-officio members:</p> <ol style="list-style-type: none"> The General Manager of MSS or his/her delegate. Any Canadian resident who is an Officer of the CIE or a Director or Associate Director of a CIE Division. <p>The duties of all members of the CNC/CIE Board of Administration are:</p> <ol style="list-style-type: none"> To contribute to the objectives of the CNC/CIE, as set out in its Terms of Reference (Clause 3). To serve as an Officer of the CIE, an Officer of the CNC/CIE, the official Canadian Division Member of a CIE Division, or to assist the official Canadian Member of a CIE Division. To attend meetings of the CNC/CIE. <p>To vote in all ballots of the CNC/CIE, including those undertaken in order to ascertain the Canadian position on ballots circulated by the CIE.</p>	<ul style="list-style-type: none"> the Canadian Members of CIE Divisions (see Clause 5.4), and up to seven Members-at-large (see Clause 5.5). <p>The Board includes the following ex-officio members:</p> <ul style="list-style-type: none"> The Director General of METRO or their delegate; Any Member who is an Officer of the CIE or a Director or Associate Director of a CIE Division. <p>The duties of all members of the Board are to:</p> <ol style="list-style-type: none"> provide strategic leadership; oversee the achievement of the objectives of the CNC/CIE (see Clause 2); plan annual meetings; propose adhoc committees and special events; and ensure that all ballots of the CNC/CIE are circulated and voted on. <p>All actions of the Board must be reported to the next annual meeting of the CNC/CIE as part of the Secretary's report. At the request of any member, the Secretary may invite one or more persons to attend any meeting or meetings of the Board and/or to take part in discussions conducted by correspondence. Such persons do not have the right to vote.</p>	
<p>6.2 Officers</p>	<p>5.2 Officers</p>	
<p>The Officers of the CNC/CIE are appointed by the General Manager of MSS or his/her delegate, on the recommendation of the CNC/CIE. The CNC/CIE elects the Officers following procedures described in Clause 7.2. Officers are normally appointed for four-year terms starting on January 1. The terms of office are renewable for additional terms subject to the recommendation of the CNC/CIE and the approval of the General Manager of MSS or his/her delegate.</p> <p>The Officers include:</p> <ol style="list-style-type: none"> A President who is responsible for conducting the affairs of the CNC/CIE, calling and chairing its meetings, and reporting to NRC on its activities <p>The President of the CNC/CIE also serves as the Vice-Chair of the Canadian mirror committee to ISO TC 274 – Light and Lighting (known as SMC-ISO-TC-274 under the</p>	<p>The Officers of the CNC/CIE include:</p> <ol style="list-style-type: none"> A President who is responsible for conducting the affairs of the CNC/CIE, calling and chairing its meetings, representing Canada at meetings of the CIE and reporting to NRC International Relations on the activities of the CIE. <p>The President of the CNC/CIE also serves as the Vice-Chair of the Canadian mirror committee to ISO TC 274 – Light and Lighting (known as SMC-ISO-TC-274 under the Standards Council of Canada). In that role, they are responsible for performing the duties of the Chair of that committee whenever the Chair [the Vice-President of the CNC/CIE] is unable to perform them.</p>	



<p>Standards Council of Canada). In that role, he/she is responsible for performing the duties of the Chair of that committee whenever the Chair [the Vice-President of the CNC/CIE] is unable to perform them.</p> <p>2. A Vice-President who is responsible for performing the duties of the President whenever the President is unable to perform them.</p> <p>The Vice-President of the CNC/CIE also serves as the Chair of the Canadian mirror committee to ISO TC 274 – Light and Lighting (known as SMC-ISO-TC-274 under the Standards Council of Canada). In that role, he/she is responsible for conducting the affairs of the SMC-ISO-TC-274 as defined by the Standards Council of Canada.</p> <p>3. A Secretary, who is responsible for keeping the records of the CNC/CIE including the minutes of meetings, maintaining mailing lists (of Affiliates, Members, and the Board of Administration), corresponding with the Central Bureau of the CIE, conducting ballots on questions which arise between meetings, and other related duties. The Secretary should be an employee of NRC.</p> <p>4. A Treasurer, who is responsible for maintaining a bank account in the name of the CNC/CIE, receiving and dispersing funds as directed by the CNC/CIE, maintaining records of all financial transactions, and other related duties.</p> <p>5. Any other Officers that the CNC/CIE deems necessary.</p> <p>All Officers must give a written report of their activities to the CNC/CIE at its annual meeting. The Offices of President, Vice-President, Treasurer and Secretary must be held by separate people.</p>	<p>2. A Vice-President who is responsible for performing the duties of the President whenever the President is unable to perform them.</p> <p>The Vice-President of the CNC/CIE also serves as the Chair of the Canadian mirror committee to ISO TC 274 – Light and Lighting (known as SMC-ISO-TC-274 under the Standards Council of Canada). In that role, they are responsible for conducting the affairs of the SMC-ISO-TC-274 as defined by the Standards Council of Canada.</p> <p>3. A Secretary, who is responsible for keeping the records of the CNC/CIE including the minutes of meetings, maintaining mailing lists, corresponding with the Central Bureau of the CIE, conducting ballots on questions that arise between meetings, submitting the election results of officers to the Director General of METRO, and other related duties. The Secretary should be an employee of NRC.</p> <p>4. A Treasurer, who is responsible for maintaining a bank account in the name of the CNC/CIE, receiving and dispersing funds as directed by the CNC/CIE, maintaining records of all financial transactions, and other related duties.</p> <p>5. Any other Officers that the CNC/CIE deems necessary.</p> <p>The Officers of the CNC/CIE are appointed by the Director General of METRO or their delegate on the recommendation of the CNC/CIE following a formal election process. Officers are normally appointed for four-year terms starting on January 1. The terms of office are renewable for additional terms subject to the recommendation of the CNC/CIE and the approval of the Director General of METRO or their delegate. All Officers must give a written report of their activities to the CNC/CIE at its annual meeting. The Offices of President, Vice-President, Treasurer and Secretary must be held by separate people.</p>	
6.3 Executive Committee	5.3 Executive Committee	



<p>An Executive Committee comprised of the President, Vice-President, Secretary and Treasurer conducts routine business of the CNC/CIE between meetings. All actions of the Executive Committee must be reported to the next annual meeting of the CNC/CIE as part of the Secretary's report.</p>	<p>An Executive Committee comprised of the President, Vice-President, Secretary and Treasurer conducts routine business of the CNC/CIE between meetings of the Board. All actions of the Executive Committee must be reported to the next annual meeting of the CNC/CIE as part of the Secretary's report.</p>	
<p>6.4 Division Members</p>	<p>5.4 Division Members</p>	
<p>The CNC/CIE appoints a voting member to each CIE Division. These Division Members are expert in the scope of activity relevant to the Division of which they are members. Division Members are appointed by the CNC/CIE following an election process described in Clause 7.2. Division Members are normally appointed for four-year terms. The terms of office are renewable for additional terms. As noted in Clause 6.1, Division Members also serve on the CNC/CIE Board of Administration. The duties of the Division Members are:</p> <ol style="list-style-type: none"> 1. To ascertain the views prevailing in Canada and to express these views in the deliberations of the Division either by correspondence or at meetings. 2. To report in writing to the CNC/CIE, at its annual meeting, on the activities of the Division. 3. To advise the CNC/CIE on matters pertaining to the Division and its associated Technical Committees and Reporterships. 4. To encourage Canadian experts to be active members of Technical Committees within the Division. 5. To inform the Secretary of all Canadians who become members of Technical Committees within the Division. 6. To serve as expert members of the Canadian mirror committee to ISO TC 274 – Light and Lighting (known as SMC-ISO-TC-274 under the Standards Council of Canada), and to contribute to the work of the SMC-ISO-TC-274 as defined by the Standards Council of Canada. 7. As concerns CIE technical committees that write standards, if there is more than one Canadian expert serving as a member (TCM) of that committee, the Division Member shall ensure that one co-ordinated vote on behalf of Canada is cast on TC ballots for the draft document. 	<p>The CNC/CIE appoints a voting member to each CIE Division following a formal election process. These Division Members are expert in the scope of activity relevant to the Division of which they are members. The duties of the Division Members are to:</p> <ol style="list-style-type: none"> 1. ascertain the views prevailing in Canada and to express these views in the deliberations of the Division either by correspondence or at meetings; 2. report in writing to the CNC/CIE, at its annual meeting, on the activities of the Division; 3. advise the CNC/CIE on matters pertaining to the Division and its associated Technical Committees and Reporterships; 4. encourage Canadian experts to be active members of Technical Committees within the Division; 5. inform the Secretary of all Canadians who become members of Technical Committees within the Division; and 6. serve as expert members of the Canadian mirror committee to ISO TC 274 – Light and Lighting (known as SMC-ISO-TC-274 under the Standards Council of Canada), and to contribute to the work of the SMC-ISO-TC-274 as defined by the Standards Council of Canada. <p>Division Members are normally appointed for four-year terms. The terms of office are renewable for additional terms subject to the approval of the CNC/CIE. To assist each Division Member, the Board, whenever possible, appoints a minimum of one other Member.</p>	<p>Item 7 has been removed because it is not clear if and/or when it applies. The appointment of a non-voting Division Member has been relegated to the BA.</p>



<p>The Division Member's annual report to the CNC/CIE should include the latest Activity Report or minutes of the Division (or a pointer to an electronic version), a summary of issues of particular importance to Canada, and a list of Canadian members of Technical Committees within the Division. To assist each Division Member, the CNC/CIE, whenever possible, appoints a minimum of one other Member.</p>		
<p>6.5 Members-at-large of the CNC/CIE Board of Administration</p>	<p>5.5 Members-at-large</p>	
<p>The CNC/CIE appoints up to 7 Members-at-large to its Board of Administration (BA) in order to ensure that all interests are represented and that there is a suitable geographic distribution of participation in the work of the CNC/CIE. Members-at-large are appointed by the CNC/CIE following an election process described in Clause 7.2. Members-at-large are normally appointed for four-year terms, which may be staggered to ensure continuity. The terms of office are renewable for additional terms. The duties of the Members-at-large of the CNC/CIE Board of Administration are outlined in Clause 6.1.</p>	<p>Members-at-large are appointed by the CNC/CIE, after a formal election process, with the goal of ensuring that all relevant areas of expertise of the CNC/CIE are represented and that there is a suitable geographic distribution of participation in the work of the CNC/CIE. Members-at-large are normally appointed for four-year terms. The terms of office are renewable for additional terms subject to the approval of the CNC/CIE. The duties of the Members-at-large are outlined in Clause 5.1</p>	
<p>6.6 Observers</p>	<p>5.6 Observers</p>	
<p>A representative of the NRC Government and International Relations Office is an observer to the CNC/CIE.</p>	<p>A representative of the NRC Government and International Relations Team is an observer to the CNC/CIE.</p>	
<p>6.7 Consultants</p>		
<p>At the request of any Member, the Secretary may invite one or more persons to attend any meeting or meetings, and/or to take part in discussions conducted by correspondence. Such persons do not have the right to vote.</p>		<p>This sub clause has been moved under 5.1.</p>
<p>7. Subcommittees</p>	<p>6. Subcommittees</p>	
<p>7.1 Membership Subcommittee</p>	<p>6.1 Membership and Elections Subcommittee</p>	<p>Combine Membership and Elections subcommittees into a single subcommittee</p>
<p>There shall be a Membership Subcommittee, which shall consist of at least three members, one of which shall be the Secretary (ex officio). The Chair and one or more members shall be appointed by the CNC/CIE, normally for four-year terms, which may be staggered to ensure continuity. Membership on the subcommittee may be renewed. The Secretary shall review the records of the subcommittee annually in June to determine whether any terms of members on this subcommittee will end in that calendar year. He/she will invite subcommittee members whose terms are ending to be renewed. In the case of positions coming open at the end of that calendar year, the Secretary will issue a call for volunteers to serve on the Membership subcommittee. The Executive Committee will review the offers to volunteer</p>	<p>There shall be a Membership and Elections Subcommittee, which shall consist of at least three members, one of which shall be the Secretary (ex officio). The members of this subcommittee must be Members of the CNC/CIE. The Chair and one or more members shall be appointed by the CNC/CIE following a formal election process. The duties of the Membership and Elections Subcommittee are to:</p> <ol style="list-style-type: none"> 1. maintain a membership database; 2. solicit new participants in the work of the CNC/CIE from among relevant Canadian parties; 3. review any applications for membership and ascertain if the applicant meets the requirements for membership; 	<p>This clause has been updated, to remove procedural details; The four-year term limit has been removed.</p>



<p>prior to the annual meeting of the CNC/CIE, and will present recommendations for appointment(s) to the annual meeting. The duties of the Membership Subcommittee are:</p> <ul style="list-style-type: none"> • to maintain the membership database with current contact information concerning all member categories; • to solicit new participants in the work of the CNC/CIE from among relevant Canadian parties; • to verify the willingness of CNC/CIE contacts to receive mailings that are considered Commercial Electronic Mail (see http://fightspam.gc.ca/eic/site/030.nsf/eng/home). 	<ol style="list-style-type: none"> 4. prepare a call for nominations for all Board terms that are due to expire at the end of the year and vacant sub-committee positions; 5. review each nomination submitted to ascertain that: <ul style="list-style-type: none"> • the nominee is willing and has the necessary qualifications for the position for which they are been nominated; • the nomination includes a brief biography highlighting the nominee's contributions to the Canadian lighting community, the CNC/CIE and the CIE 6. submit a list of nominees for subcommittee members, and Board positions to the secretary; and 7. verify the willingness of CNC/CIE members and affiliates to receive mailings from the CNC/CIE. 	
<p>7.2 Elections Subcommittee</p>		
<p>There shall be an Elections Subcommittee, which shall consist of at least three and not more than five people, one of which shall be the Secretary (ex officio). The members of this subcommittee must be Members of the CNC/CIE. The members of the Elections Subcommittee shall be appointed by the CNC/CIE, normally for four-year terms, which may be staggered to ensure continuity. Membership on the subcommittee may be renewed.</p> <p>The Secretary shall review the records of the subcommittee annually in June to determine whether any terms of members on this subcommittee will end in that calendar year. He/she will invite subcommittee members whose terms are ending to be renewed. In the case of positions coming open at the end of that calendar year, the Secretary will issue a call for volunteers to serve on the Elections subcommittee. The Executive Committee will review the offers to volunteer prior to the annual meeting of the CNC/CIE, and will present recommendations for appointment(s) to the annual meeting.</p> <p>The duties of the Elections Subcommittee are as follows:</p> <ul style="list-style-type: none"> • to review the records of Members at the start of each calendar year, seeking to identify terms that will come to an end at the end of that year: <ul style="list-style-type: none"> ○ The Secretary shall inform Members whose terms are expiring and ascertain whether they are willing to be re-appointed; 	<ol style="list-style-type: none"> 1. 	<p>A lot of the information under 7.2 had nothing to do with the Elections sub-committee. It had to do with the election process or with the duties of the Secretary. These parts have either been removed or moved to the clause 10 on elections.</p> <p>The requirement to ascertain if the incumbent wishes to continue has been removed.</p> <p>The duties of the elections subcommittee have been moved to the 6.1 – Membership and elections subcommittee</p>



<ul style="list-style-type: none"> ○ The Elections Subcommittee will take this information under advisement and will report to the membership at least two months prior to the Annual Meeting with recommendations on the re-appointments and on new appointments. ○ Voting on these appointments shall take place at the Annual Meeting so long as quorum is met. If quorum is not met, an electronic ballot shall be held following the meeting (see Clause 8.3). ● to review the records concerning the terms of members of the CNC/CIE Board of Administration before each Annual Meeting, seeking to identify terms that are due to expire at or before the end of the following year: <ul style="list-style-type: none"> ○ At the Annual Meeting, a Call for Nominations shall be issued for positions that will come open at or before the end of the following year. The Secretary will ensure that announcements concerning the Call for Nominations are sent to Affiliates and Members at least two months prior to the next Annual Meeting. ○ All Nominations, including any initiated by the Elections Subcommittee, shall be accompanied by a brief biography highlighting the nominee's contributions to the Canadian lighting community, the CNC/CIE and the CIE. The nomination must have the approval of the nominee and an individual may accept only a nomination for a single Executive position. ○ The Elections Subcommittee shall examine each nomination to verify the individual's 		
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<p>suitability and willingness to serve if elected.</p> <ul style="list-style-type: none"> ○ For each position for which the term of office is expiring, the Elections Subcommittee shall make at least one nomination, which can be the incumbent if he/she is willing to accept re-appointment. ○ Nominations shall close on August 31 each year. ○ The Elections Subcommittee will compile all nominations received and will prepare a ballot form by Sept. 30 of each year. ○ The CNC/CIE Secretary will send this ballot to all Members by Oct. 15 of each year. The ballot will have a 4-week open period. ○ The Secretary will tabulate the results, which will be confirmed by the Election Committee, excluding any members who are nominees. ○ The Secretary will submit the results for Officers for appointment (or re-appointment) by the General Manager of MSS (or his/her delegate). ○ All election results will be reported to the full membership by the Secretary. 		
<p>7.3 Ad hoc Subcommittees</p>	<p>6.3 Ad Hoc Subcommittees</p>	
<p>The CNC/CIE may appoint sub-committees or task forces from time to time to undertake specific projects for terms established at the time of their creation. This may be done at an Annual meeting, at a specially-called meeting, or by letter ballot. The creation of such sub-committees shall be by majority vote. Ad hoc subcommittees shall be dissolved at the end of the specified term, unless that term is extended by a vote.</p>	<p>The CNC/CIE or Board may appoint subcommittees or task forces from time to time to undertake specific projects for terms established at the time of their creation. This may be done at a Board meeting, at an annual meeting, or by letter ballot. The creation of such subcommittees shall be by majority vote. Ad hoc subcommittees shall be dissolved at the end of the specified term, unless that term is extended by a vote.</p>	<p>The ability for the BA to appoint subcommittees has been added.</p>
<p>8 Meetings</p>	<p>7 Meetings</p>	
<p>8.1 Annual Meeting</p>	<p>7.1 Annual Meeting</p>	
<p>There shall be a meeting of the CNC/CIE in the last quarter of each calendar year. The</p>	<p>There shall be a meeting of the CNC/CIE in the last quarter of each calendar year.</p>	<p>The Board is now responsible for</p>



<p>time, place, and a draft agenda must be circulated to all Affiliates and Members at least three weeks in advance of the annual meeting. Telephone or electronic participation options should be offered if at all possible. Reports defined elsewhere in this document must be submitted to the Secretary at least one week prior to the annual meeting.</p>	<p>The time and location of the Annual Meeting must be approved by the Board and announced at least 2 months prior to the time. A draft agenda must be circulated to all Affiliates and Members at least three weeks in advance of the annual meeting. Reports defined elsewhere in this document must be submitted to the Secretary at least one week prior to the annual meeting. Virtual participation options should be offered if at all possible.</p>	<p>determining the time and location of annual meetings.</p>
<p>8.2 Special Meetings</p>	<p>7.2 Board Meetings</p>	
<p>The President may call a meeting of the CNC/CIE whenever he/she deems it necessary or at the request of at least five Members, or at the request of the General Manager of MSS or his/her delegate. There must be at least three weeks' notice of any CNC/CIE meeting. Meetings may be held by teleconference or in person. For in person meetings, telephone or electronic participation options should be offered if at all possible.</p>	<p>There shall be at least two meetings of the Board during each calendar year. These meetings may be held in person and/or virtually.</p>	
	<p>7.3 Special meetings</p>	
	<p>The President may call a meeting of the CNC/CIE or the Board whenever they deem it necessary or at the request of at least five Members, or at the request of the Director General of METRO or their delegate. Meetings may be held virtually or in person. For in person meetings, virtual participation should be offered if at all possible.</p>	
<p>8.3 Quorum</p>	<p>7.4 Quorum</p>	
<p>All meetings of the CNC/CIE require quorum. A quorum consists of one-half of the Board of Administration (see section 6.1). Those in attendance by teleconference or electronic communications are counted as present for determining quorum. If quorum is not met at a duly called meeting, then any decisions required to be taken at that meeting shall be dealt with by letter ballot (see Clause 9.2).</p>	<p>All meetings of the CNC/CIE and the Board require quorum. A quorum consists of one-half of the Board (see Clause 5.1). Those in attendance virtually are counted as present for determining quorum. If quorum is not met at a duly called meeting, then any decisions required to be taken at that meeting shall be dealt with by letter ballot (see Clause 8.2).</p>	
<p>9. Decision Making</p>	<p>8. Decision Making</p>	
<p>9.1 General</p>	<p>8.1 General</p>	
<p>In dealing with matters at meetings and by letter ballots, all Members have voting rights. A simple majority of votes cast, including the votes of those in attendance by teleconference or by proxy, is required to ensure the passage of a motion. (Note that an abstention is not a vote.) Those who are unable to attend a meeting may assign their vote to a proxy provided that they give written notice to the Secretary before the meeting.</p>	<p>In dealing with matters at meetings and by letter ballots, all Members have voting rights. A simple majority of votes cast, including the votes of those in attendance virtually, is required to ensure the passage of a motion. (Note that an abstention is not a vote.) Those who are unable to attend a meeting may assign their vote to a proxy provided that they give written notice to the Secretary before the meeting.</p>	
<p>9.2 Ballots</p>	<p>8.2 Ballots</p>	



<p>At the request of the President or at least five members of the CNC/CIE-BA, when quorum has not been met at a meeting, or to deal with matters referred to the CNC/CIE by the CIE, the Secretary shall send out letter ballots (electronically or by hard copy) to all Members to ascertain their opinion on any question that arises between meetings. The voting period must last for at least three weeks after the sending of the ballot. Negative votes on a letter ballot shall be accompanied by an explanation. As a matter of expediency, and at the discretion of the President, some letter ballots may be restricted to the CNC/CIE Board of Administration only.</p>	<p>At the request of the President or at least five members of the Board, when quorum has not been met at a meeting, or to deal with matters referred to the CNC/CIE by the CIE, the Secretary shall send out letter ballots (electronically or by hard copy) to all Members to ascertain their opinion. The voting period must last for at least three weeks after the sending of the ballot. Negative votes on a non-election ballot shall be accompanied by an explanation. As a matter of expediency, and at the discretion of the President, some ballots may be restricted to the Board. The results of all ballots shall be distributed to the CNC/CIE.</p>	
	<p>8.3 Appointment of proxies</p>	
	<p>8.3.1 Proxies to the General Assembly</p>	
	<p>If a delegate appointed to the General Assembly is unable to attend, the Executive Committee may recommend a substitute delegate from Canada to act as their proxy. If no Canadian is able to attend the General Assembly, the Executive Committee may recommend that a delegate from another member nation be appointed as proxy. The Director General METRO or their delegate must approve this recommendation.</p>	
	<p>8.3.2 Proxies to Division Meeting</p>	
	<p>If a Division Member is unable to attend a Division meeting, they may appoint, in consultation with the Executive Committee, a substitute voting-member from Canada to act as their proxy. If they do not do this, the President may do so. If no Canadian is able to attend a Division meeting, the Division member may, with the approval of the Executive Committee, appoint a Division member from another country to act as their proxy. The Division Member or the President must inform the CIE Division Secretary or Director of this appointment. The proxy must present a report of their actions to the regular Division Member after the meeting.</p>	
<p>10. Delegates to the General Assemblies</p>	<p>9. Delegates to the General Assemblies</p>	
<p>When a CIE General Assembly is to be held, the CNC/CIE recommends to the Director General Metro or his/her delegate, the nomination of two delegates (one voting, the other non-voting) for appointment by the NRC Government and International Relations Office. The President of the CNC/CIE shall normally be the voting delegate. The delegates are expected to present the policies of the NRC Government and International Relations Office on issues relating to finances, Statutes and By-Laws, and of the CNC/CIE on other matters. The delegates must provide a written report to</p>	<p>When a CIE General Assembly is to be held, the CNC/CIE recommends to the Director General METRO or their delegate, the nomination of two delegates (one voting, the other non-voting) for appointment by the NRC International Relations Team. The President of the CNC/CIE shall normally be the voting delegate. The delegates are expected to present the policies of the NRC International Relations Team on issues relating to finances, Statutes, and By-Laws, and of the CNC/CIE on other matters. The delegates must provide a written report to</p>	



the NRC Government and International Relations Office with a copy to the General Manager of MSS or his/her delegate, and to the CNC/CIE.	the NRC International Relations Team with a copy to the Director General of METRO or their delegate, and to the CNC/CIE.	
11. CIE Publications		
The CNC/CIE receives royalties from the CIE for CIE Publications sold to residents of Canada. Proceeds from these royalties are used to support activities of the CNC/CIE.		See new clause 11 (Financial)
12. Funding		
The CNC/CIE does not, in general, provide financial support for members for their CIE-related activities. In special circumstances, when warranted, the Treasurer shall pay monies for expenses incurred during official CNC/CIE business, which have been approved at the annual CNC/CIE meeting, or by the Executive Committee. The CNC/CIE shall maintain a written policy outlining the criteria for such reimbursement of expenses.		See new clause 11 (Financial)
	10. Elections	
	10.1 New Members	
	On receipt of an application for membership that meets the criteria outlined in Clause 4.1, the secretary shall seek the approval of the application from the CNC/CIE. Approval should be sought within two months of receipt of an application. A brief biography highlighting the nominee's qualifications for membership must accompany the ballot.	New Clause
	10.2 Members of the Board and Sub-Committees	
	At least six months prior to the end of the year, the secretary in consultation with the Membership and Elections subcommittee shall send out a call for nominations for Board terms that are expiring at the end of the year and vacant subcommittees positions After the close of nominations, the secretary, in consultation with the Membership and Elections Subcommittee, shall: <ul style="list-style-type: none"> • Ascertain that nominees are willing to stand • Distribute a list of nominees to CNC/CIE members Voting on these appointments shall take place at the Annual Meeting if at all possible. If voting is not possible at the Annual meeting, an electronic ballot shall be held following the meeting in sufficient time to ensure the results are available prior to the end of the calendar year. Officers elected by the CNC/CIE must be approved by the Director General of METRO or their delegate before they can assume their position.	



	11. Finance	This new section deals with all of the financial matters
	11.1 Payment of Dues	
	National Research Council (NRC) pays Canada's annual contribution to the CIE within its allocated Grant budget for international affiliations, However, subject to the level of the annual Treasury Board grant for international affiliation dues as well as in consultation with the NRC International Relations Team, NRC retains the right to determine the level of its contribution or to terminate it. Because the Government of Canada maintains the country's membership in the CIE on behalf of all Canadians, there shall be no fee to join the CNC/CIE.	
	11.2 Income	
	The CNC/CIE receives royalties from the CIE for CIE Publications sold to residents of Canada. Proceeds from these royalties are retained by the CNC/CIE. Income from special events such as Technical Sessions and workshops are retained by the CNC/CIE.	
	11.3 Expenditures	
	11.3.1 Use of Income	
	Income accrued by the CNC/CIE should be used to fund special activities that support the Purpose of the CNC/CIE (Clause 2). All such activities must be approved by the Board.	
	11.3.2 Financial support of CIE Activities	
	The CNC/CIE does not, in general, provide financial support for members for their CIE-related activities. In special circumstances, when warranted, the Treasurer shall pay monies for expenses incurred during official CNC/CIE business, which have been approved at the annual CNC/CIE meeting, or by the Board. The CNC/CIE shall maintain a written policy outlining the criteria for such reimbursement of expenses.	
13. Amendments to the Code of Procedure	12. Amendments to the Terms of Reference	
This Code of Procedure may be amended by an affirmative vote of a simple majority of the votes cast, at a meeting or by letter ballot, provided that notice of motion has been given at least two months before the date of the meeting or the closing date of the letter ballot, and that vote meets the requirement for quorum defined in Clause 8.3. Adoption of the amended Code requires the approval of the Director General of ETRO or his/her delegate.	This Terms of Reference may be amended by an affirmative vote of a simple majority of the votes cast, at a meeting or by letter ballot, provided that notice of motion has been given at least two months before the date of the meeting or the closing date of the letter ballot, and that the vote meets the requirement for quorum defined in Clause 7.4. Adoption of the amended document requires the approval of the Director General of METRO or their delegate.	



Approved Code of Procedures

Canadian National Committee for the International Commission on Illumination

1.1 *Terms of Reference*

1 Background

The International Commission on Illumination (abbreviated as CIE from its French title Commission Internationale de l'Éclairage) is a scientific, technical and cultural, non-profit organization devoted to international cooperation and exchange of information among its member countries on all matters related to the science and art of light and lighting. The national adhering body for Canada is the National Research Council (NRC).

The responsibility for performing the duties of representing the views of the Canadian lighting community within the CIE and communicating news about the CIE to the Canadian lighting community rests with the Canadian National Committee of the CIE (CNC/CIE).

The CNC/CIE reports to the Director General of the NRC Metrology Research Centre (METRO) or their delegate. The delegate is currently the Director of Research & Development with responsibility for Photometry and Spectrophotometry.

This document specifies the terms of reference for the CNC/CIE.

2 Purpose of the CNC/CIE

The purpose of the CNC/CIE is to:

1. collect and reconcile the many views of the Canadian lighting community on relevant issues. This community includes, but is not limited to, organizations in the government, university and private industry sectors.;
2. represent these views to CIE and internationally through participation in CIE activities, including responding to all National Committee ballots of the CIE;
3. identify, represent and promote the capabilities and distinctive competence of its Canadian lighting community internationally;
4. enhance the depth and breadth of the participation of the Canadian lighting community in the activities and events of the CIE and related organizations;
5. encourage and, where possible, support students with an interest in light and lighting;
6. establish the mechanisms for communicating to the Canadian lighting community the views of the CIE and information about activities of the CIE;
7. distribute appropriate documentation, including the newsletter of the CIE.
8. attract and stage local and international events of value to the Canadian lighting community; and
9. support the Standards Council of Canada by providing the core of the membership of the Canadian mirror committee to ISO TC 274 – Light and Lighting (SMC-ISO-TC-274).

3 Secretariat

The Secretariat of the CNC/CIE is administered as an outreach activity in the NRC Metrology Research Centre (METRO), where it falls under the responsibility of the Team Lead of the Photometry and Spectrophotometry team.

It is located at NRC.

4 Membership

4.1 Member Category

Members are experts in a field or fields within the scope of the CIE.

Members must normally reside in Canada

The duties of Members are to:

1. contribute their views about matters relating to the work of the CIE and CNC/CIE by participating in ballots circulated from time to time by the Secretariat or by a Canadian CIE Division Member;
2. assist the CNC/CIE in the dissemination of news about CIE matters within their networks; and



3. support the purpose of the CNC/CIE as laid out in Clause 2.

When accepting membership in the CNC/CIE, a member agrees to comply with the CNC/CIE Terms of Reference and CIE Code of Ethics.

Members have full voting rights on all matters before the CNC/CIE.

4.1.1 Regular Members

Any individual who is an expert in a field or fields within the scope of the CIE and is willing to assist in the fulfilment of Canada's duties as a Member of the CIE may submit a membership application to the CNC/CIE secretariat.

Members are appointed by the CNC/CIE, after a formal election process, with due consideration to ensuring adequate technical and geographic representation.

Members who no longer wishes to participate in the work of the CNC/CIE should inform the Membership Committee that they wish to resign.

Members may be expelled from the CNC/CIE for failure to comply with the membership conditions or due to conduct impairing the interests of the CNC/CIE. Expulsion shall be decided by the CNC/CIE.

4.1.2 Members of CIE committees and SMC-ISO-TC-274

An individual, who is a member of a CIE committee, task group, working group or technical committee, or a member of SMC-ISO-TC-274, will be appointed as a CNC/CIE Member.

Members appointed by virtue of service to CIE or to SMC-ISO-TC-274 shall remain Members for the duration of their service.

4.2 Affiliate Category

The Affiliate category of CNC/CIE membership is open to any person resident in Canada with a demonstrated interest in any aspect of the science, technology or art of light and lighting.

Affiliates do not have voting rights in any decisions of the CNC/CIE, but they can volunteer on subcommittees, review technical reports and standards, and put their names forward to participate in the technical work of the CIE.

5 Governance

5.1 Board

The Board is the principal decision-making body of the CNC/CIE. It shall consist of not more than nineteen members. The membership of this body shall include:

- the Officers (see Clause 5.2),
- the Canadian Members of CIE Divisions (see Clause 5.4), and
- up to seven Members-at-large (see Clause 5.5).

The Board includes the following ex-officio members:

- the Director General of METRO or their delegate;
- any CNC/CIE Member who is an Officer of the CIE or a Director or Associate Director of a CIE Division.

The duties of all members of the Board are to:

6. provide strategic leadership;
7. oversee the achievement of the objectives of the CNC/CIE (see Clause 2);
8. plan annual meetings;
9. propose ad hoc committees and special events; and
10. ensure that all ballots of the CNC/CIE are circulated and voted on.

All actions of the Board must be reported to the next annual meeting of the CNC/CIE as part of the Secretary's report.

At the request of any Member, the Secretary may invite one or more persons to attend any meeting or meetings of the Board and/or to take part in discussions conducted by correspondence. Such persons do not have the right to vote.

5.2. Officers

The Officers of the CNC/CIE include:

6. A President who is responsible for conducting the affairs of the CNC/CIE, calling and chairing its meetings, representing Canada at meetings of the CIE and reporting to NRC International Relations



on the activities of the CIE. The President of the CNC/CIE also serves as the Vice-Chair of the Canadian mirror committee to ISO TC 274 – Light and Lighting (known as SMC-ISO-TC-274 under the Standards Council of Canada). In that role, they are responsible for performing the duties of the Chair of that committee whenever the Chair [the Vice-President of the CNC/CIE] is unable to perform them.

7. A Vice-President who is responsible for performing the duties of the President whenever the President is unable to perform them. The Vice-President of the CNC/CIE also serves as the Chair of the Canadian mirror committee to ISO TC 274 – Light and Lighting (known as SMC-ISO-TC-274 under the Standards Council of Canada). In that role, they are responsible for conducting the affairs of the SMC-ISO-TC-274 as defined by the Standards Council of Canada.
8. A Secretary, who is responsible for keeping the records of the CNC/CIE including the minutes of meetings, maintaining mailing lists, corresponding with the Central Bureau of the CIE, conducting ballots on questions that arise between meetings, submitting the election results of officers to the Director General of METRO, and other related duties. The Secretary should be an employee of NRC.
9. A Treasurer, who is responsible for maintaining a bank account in the name of the CNC/CIE, receiving and dispersing funds as directed by the CNC/CIE, maintaining records of all financial transactions, and other related duties.
10. Any other Officers that the CNC/CIE deems necessary.

The Officers of the CNC/CIE are appointed by the Director General of METRO or their delegate on the recommendation of the CNC/CIE following a formal election process.

Officers are normally appointed for four-year terms starting on January 1st. The terms of office are renewable for additional terms subject to the recommendation of the CNC/CIE and the approval of the Director General of METRO or their delegate.

All Officers must give a written report of their activities to the CNC/CIE at its annual meeting.

The Offices of President, Vice-President, Treasurer and Secretary must be held by separate people.

5.3 Executive Committee

An Executive Committee comprised of the President, Vice-President, Secretary and Treasurer conducts routine business of the CNC/CIE between meetings of the Board. All actions of the Executive Committee must be reported to the next annual meeting of the CNC/CIE as part of the Secretary's report.

5.4 Division Members

The CNC/CIE appoints a voting member to each CIE Division following a formal election process. These Division Members are expert in the scope of activity relevant to the Division of which they are members.

The duties of the Division Members are to:

7. ascertain the views prevailing in Canada and to express these views in the deliberations of the Division either by correspondence or at meetings;
8. report in writing to the CNC/CIE, at its annual meeting, on the activities of the Division;
9. advise the CNC/CIE on matters pertaining to the Division and its associated Technical Committees and Reporterships;
10. encourage Canadian experts to be active members of Technical Committees within the Division;
11. inform the Secretary of all Canadians who become members of Technical Committees within the Division; and
12. serve as expert members of the Canadian mirror committee to ISO TC 274 – Light and Lighting (known as SMC-ISO-TC-274 under the Standards Council of Canada), and contribute to the work of the SMC-ISO-TC-274 as defined by the Standards Council of Canada.

Division Members are normally appointed for four-year terms. The terms of office are renewable for additional terms subject to the approval of the CNC/CIE.

To assist each Division Member, the Board, whenever possible, appoints a minimum of one other Member.

5.5 Members-at-large of the Board

Members-at-large are appointed by the CNC/CIE, after a formal election process, with the goal of ensuring that all relevant areas of expertise of the CNC/CIE are represented and that there is a suitable geographic distribution of participation in the work of the CNC/CIE.



Members-at-large are normally appointed for four-year terms. The terms of office are renewable for additional terms subject to the approval of the CNC/CIE.

The duties of the Members-at-large are outlined in Clause 5.1.

5.6 Observers

A representative of the NRC International Relations Team is an observer to the CNC/CIE.

6 Subcommittees

6.1 Membership and Elections Subcommittee

There shall be a Membership and Elections Subcommittee, which shall consist of at least three members, one of which shall be the Secretary (ex officio). The members of this subcommittee must be Members of the CNC/CIE. The Chair and one or more members shall be appointed by the CNC/CIE following a formal election process.

The duties of the Membership and Elections Subcommittee are to:

1. maintain a membership database;
2. solicit new participants in the work of the CNC/CIE from among relevant Canadian parties;
3. review any applications for membership and ascertain if the applicant meets the requirements for membership;
4. prepare a call for nominations for all Board terms that are due to expire at the end of the year and vacant subcommittee positions;
5. review each nomination submitted to ascertain that:
 - the nominee is willing and has the necessary qualifications for the position for which they are been nominated; and
 - the nomination includes a brief biography highlighting the nominee's contributions to the Canadian lighting community, the CNC/CIE and the CIE.
6. submit a list of nominees for subcommittee and Board positions to the secretary; and
7. verify the willingness of CNC/CIE members and affiliates to receive mailings from the CNC/CIE.

6.3 Ad hoc Subcommittees

The CNC/CIE or Board may appoint subcommittees or task forces from time to time to undertake specific projects for terms established at the time of their creation. This may be done at a Board meeting, at an annual meeting, or by letter ballot. The creation of such subcommittees shall be by majority vote. Ad hoc subcommittees shall be dissolved at the end of the specified term, unless that term is extended by a vote.

7 Meetings

7.1 Annual Meetings

There shall be a meeting of the CNC/CIE in the last quarter of each calendar year. The time and location of the Annual Meeting must be approved by the Board and announced at least 2 months prior to the time. A draft agenda must be circulated to all Affiliates and Members at least three weeks in advance of the annual meeting.

Reports defined elsewhere in this document must be submitted to the Secretary at least one week prior to the annual meeting.

Virtual participation options should be offered if at all possible.

7.2 Board Meetings

There shall be at least two meetings of the Board during each calendar year. These meetings may be held in person and/or virtually

7.3 Special Meetings

The President may call a meeting of the CNC/CIE or the Board whenever they deem it necessary or at the request of at least five Members, or at the request of the Director General of METRO or their delegate. Meetings may be held virtually or in person. For in person meetings, virtual participation should be offered if at all possible.

7.4 Quorum

All meetings of the CNC/CIE and the Board require quorum. A quorum consists of one-half of the Board (see Clause 5.1). Those in attendance virtually are counted as present for determining quorum.

If quorum is not met at a duly called meeting, then any decisions required to be taken at that meeting shall be dealt with by letter ballot (see Clause 8.2).

8 Decision Making



8.1 General

In dealing with matters at meetings and by letter ballots, all Members have voting rights. A simple majority of votes cast, including the votes of those in attendance virtually, is required to ensure the passage of a motion. (Note that an abstention is not a vote.) Those who are unable to attend a meeting may assign their vote to a proxy provided that they give written notice to the Secretary before the meeting.

8.2. Letter Ballots

At the request of the President or at least five members of the Board, when quorum has not been met at a meeting, or to deal with matters referred to the CNC/CIE by the CIE, the Secretary shall send out letter ballots (electronically or by hard copy) to all Members to ascertain their opinion. The voting period must last for at least three weeks after the sending of the ballot.

Negative votes on a non-election ballot shall be accompanied by an explanation.

As a matter of expediency, and at the discretion of the President, some ballots may be restricted to the Board. The results of all ballots shall be distributed to the CNC/CIE.

8.3 Appointment of Proxies

8.3.1 Proxies to the General Assembly

If a delegate appointed to the General Assembly is unable to attend, the Executive Committee may recommend a substitute delegate from Canada to act as his/her proxy. If no Canadian is able to attend the General Assembly, the Executive Committee may recommend that a delegate from another member nation be appointed as proxy. The Director General METRO or their delegate must approve this recommendation.

8.3.2 Proxies to Division Meetings

If a Division Member is unable to attend a Division meeting, they may appoint, in consultation with the Executive Committee, a substitute voting-member from Canada to act as their proxy. If they do not do this, the President may do so. If no Canadian is able to attend a Division meeting, the Division member may, with the approval of the Executive Committee, appoint a Division member from another country to act as their proxy. The Division Member or the President must inform the CIE Division Secretary or Director of this appointment. The proxy must present a report of their actions to the regular Division Member after the meeting.

9. Delegates to CIE General Assemblies

When a CIE General Assembly is to be held, the CNC/CIE recommends to the Director General METRO or their delegate, the nomination of two delegates (one voting, the other non-voting) for appointment by the NRC International Relations Team. The President of the CNC/CIE shall normally be the voting delegate. The delegates are expected to present the policies of the NRC International Relations Team on issues relating to finances, Statutes, and By-Laws, and of the CNC/CIE on other matters. The delegates must provide a written report to the NRC International Relations Team with a copy to the Director General of METRO or their delegate, and to the CNC/CIE.

10. Elections

10.1 New Members

On receipt of an application for membership that meets the criteria outlined in Clause 4.1, the secretary shall seek the approval of the application from the CNC/CIE.

Approval should be sought within two months of receipt of an application.

A brief biography highlighting the nominee's qualifications for membership must accompany the ballot.

10.2 Members of the Board and Subcommittees

At least six months prior to the end of the year, the secretary, in consultation with the Membership and Elections Subcommittee, shall send out a call for nominations for Board terms that are expiring at the end of the year and vacant subcommittees positions.

After the close of nominations, the secretary, in consultation with the Membership and Elections Subcommittee, shall:

- ascertain that nominees are willing to stand, and
- distribute a list of nominees to CNC/CIE members

Voting on these appointments shall take place at the Annual Meeting if at all possible. If voting is not possible at the Annual Meeting, an electronic ballot shall be held following the meeting in sufficient time to ensure the results are available prior to the end of the calendar year.

Officers elected by the CNC/CIE must be approved by the Director General of METRO or their delegate before they can assume their position.

11 Finance

11.1 Payment of Dues



National Research Council (NRC) pays Canada's annual contribution to the CIE within its allocated Grant budget for international affiliations, However, subject to the level of the annual Treasury Board grant for international affiliation dues as well as in consultation with the NRC International Relations Team, NRC retains the right to determine the level of its contribution or to terminate it.

Because the Government of Canada maintains the country's membership in the CIE on behalf of all Canadians, there shall be no fee to join the CNC/CIE.

11.2 Income

The CNC/CIE receives royalties from the CIE for CIE Publications sold to residents of Canada. Proceeds from these royalties are used to support activities of the CNC/CIE.

Income from special events such as Technical Sessions and Workshops are retained by the CNC/CIE.

11.3 Expenditures

11.3.1 Use of Income

Income accrued by the CNC/CIE should be used to fund special activities that support the Purpose of the CNC/CIE (Clause 2). All such activities must be approved by the Board.

11.3.2 Financial support of CIE Activities

The CNC/CIE does not, in general, provide financial support for members for their CIE-related activities. In special circumstances, when warranted, the Treasurer shall pay monies for expenses incurred during official CNC/CIE business, which have been approved at the annual CNC/CIE meeting, or by the Board. The CNC/CIE shall maintain a written policy outlining the criteria for such reimbursement of expenses.

12 Amendment of Terms of Reference

These Terms of Reference may be amended by an affirmative vote of a simple majority of the votes cast, at a meeting or by letter ballot, provided that notice of motion has been given at least two months before the date of the meeting or the closing date of the letter ballot, and that the vote meets the requirement for quorum defined in Clause 7.4. Adoption of the amended document requires the approval of the Director General of METRO or their delegate.



Division 1: VISION AND COLOUR

Report to CNC/CIE 68th Annual Meeting
 National Research Council of Canada
 1200 Montreal Road, Ottawa, Ontario K1A 0R6 Canada
 Zoom Web Conference
 Monday, Nov. 27, 2023
 1:00 PM to 4:00 PM EST

Jeff Hovis
 Email: jhovis@uwaterloo.ca

1 Introduction

The annual Division 1 meeting was held Friday, 22nd of September, 2023, in Ljubljana, Slovenia and online through Webex. Forty-two people from 15 countries attended. Jeff Hovis represented Canada. The minutes can be found at the Members Section of the CNC-CIE website.

Officers were

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

2 Highlights

A survey was conducted in late 2022 to determine the reasons for the low response rates for ballots and suggestions for improving the rate.

Some key findings

The average response rate for ballots is 36% of the members.

Most felt the rate was low.

The two major reasons for not participating were “too busy” (40%) and Hard to respond to technically unfamiliar issues (24%)

Some suggestions to improve the rate were

Subject of each D1 message starts with [CIE D1] so it is not lost in the inbox

Multiple letter ballots at the same time to reduce the number of D1 messages.

“One week before” reminder for each letter ballot/survey.

The election results for the new officers for the 2023-2027 term were also announced.

Division Director Kaida Xiao (GB)

Associate Director - Vision Yoko Mizokami (JP)

Associate Director - Colour Aditya Sole (NO)

Division Editor Peter Hanselaer (BE)

Division Secretary Li-Chen Ou (TW)

New Work Items in preparation

Research Methods for Psychophysical Studies of Discomfort from Glare



The formal proposal for this new TC has not been received. It is expected to have a letter ballot for this proposal soon.

Proposed TC Chair: Steve Fotios (GB)

2.1 New Technical Committees and Reporterships

TC 1-xx^[SEP] Influence of ipRGCs on Brightness Perception

D1 approved the establishment of this new TC in August 2023, and the BA approved it in September 2023

Chair: Sei-ichi Tsujimura JP

TC1-xx Method for calculating CIE tristimulus values

D1 approved the establishment of this new TC in August 2023, and the BA approved it in September 2023.

Chair: Changjun Li (CN)

TC1-xx To recommend CAM16-UCS as the CIE Uniform Colour Space

D1 approved the establishment of this new TC in August 2023, and the BA approved it in September 2023.

Chair: Ming Ronnier Luo (GB)

2.2 Division publications

ISO/CIE DIS 23603.2(E):2023 Standard method of assessing the spectral quality of daylight simulators for visual appraisal and measurement of colour

ISO/CIE 11664-5:2023 Colorimetry — Part 5: CIE 1976 L*u*v* colour space and u', v' uniform chromaticity scale diagram

2.3 Future meetings

2024 The next D1 annual meeting will be held in conjunction with the CCPR 26th meeting and WG meetings in Paris, France. The proposed date is either 30th May or 1st June 2024.

2025 CIE Midterm Meeting CIE 2025, Vienna, Austria, July 4-12, 2025.

2027 The 31st Quadrennial Session of the CIE Nanjing, China, 9-17 July 2027.

3 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
TC1-98	A road map forward basing CIE colorimetry on cone fundamentals	Lorne Whitehead, Chair
JTC 8	Terminology in Light and Lighting	Joanne Zwinkels Member
Liaison Associates		Joanne Zwinkels Sharon McFadden Jennifer Veitch



4 Highlights of the Division Work Programme

4.1 Overview of the status of TCs and Reporterships

4.1.1 Current Technical Committees

- TC1-84 Definition of visual field for conspicuity.** Nana Itoh (JP); Chair
Committee Draft
No CA members
- TC1-91 New method for evaluating the colour quality of white-light sources.** Yandan Lin (CN) ; Chair
Committee Draft #3 is being prepared
No CA members
- TC1-92 Skin Colour database.** Kaida Xiao (GB) ; Chair
Waiting for the AD ballot
No CA members
- TC1-95 Validity of the CIE Whiteness and Tint Equations.** Minchen Wei (HK); Chair
Working Draft in progress.
No CA members
- TC1-96 A comprehensive model of colour vision.** Ronnier Luo (GB) ; Chair
Committee Draft is in progress
No CA members
- TC1-97 Age- and Field-Size-Parameterised Calculation of Cone-Fundamental-Based Spectral Tristimulus Values.** Jan Henrik Wold (NO); Chair
Completed, waiting to set-up of CIE website Version 1.0 released on GitHub. Suggested that there is a Technical Reference that accompanies the program
- TC1-98 A road map forward basing CIE colorimetry on cone fundamentals.** Lorne Whitehead (CA); Chair
Committee Draft in Progress. Also suggesting that 5 new Technical Committees be established to act on recommendations and proposals that will be set out in the report&
- TC1-99 Modelling two-dimensional colour appearance scales.** Ronnier Luo (GB); Chair
Pre-Working Draft & additional data was collected and published
No CA member

4.1.2 Current Joint Technical Committees

- JTC 8 (D1/D2/D3/D4/D6/D8) Terminology in Light and Lighting ,**
Looking for someone to replace Sharon McFadden & Peter Zwick
Joanne Zwinkels, Member
Continual updating and harmonizing with other dictionaries
- JTC 12 (D2/D1/D8) The measurement of sparkle and graininess.** Alejandro Ferrero (ES); Chair
Working on a draft Technical Report
No CA member
- JTC 16 (D1/D8) Validity of Chromatic Adaptation.** Minchen Wei (HK); Chair
Delayed progress due to COVID 19, more experiments will be carried out
No CA member

- JTC 17 (D1/D2/D8) Gloss measurement and gloss perception: A framework for the definition and standardization of visual cues to gloss.** Frederick Leloup (BE); Chair



Progress in the development of an image-based measurement, Pre-Working Draft
No CA member

4.1.3 Current Reportships

R1.60 Future colour difference-evaluation – Reporter: Manuel Melgosa (ES)

Proposal for a new person to work for this reportship

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

Results available from Kokka et al. Metrologia 2018 Vol. 55 Pages 526-534.

R1.64 Real Colour Gamuts – Reporter: Changjun Li (CN)

Technical Note in Preparation

R1.67 Revisiting Correlated Colour Temperature – Reporter: Youngshin Kwak (KR)

No report this year

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

Technical note in preparation

R1.70 Visual assessment methods of perceptual colour shifts in high-dynamic-range luminance conditions Jisoo Hwang (KR)

Report by the end of 2024

4.2 Dissolution of and changes to TCs and Reportships

R1.63 Tristimulus Integration, Closed in 2023, Reporter: Changjun Li (CN)

R1.71 Melanopsin contribution to visual perception, Closed in 2023, Reporter: Sei-ichi Trujimura (JP)

5 Other Division News

In the past year, Detlef Ruschin became the new national representative of Germany, and Yoshi Ohno became the new national representative of the United States of America for CIE Division 1.

6 Thank you to the 2022 Reviewers

I want to thank the following individuals for reviewing the numerous drafts of technical reports. Their thoughts, suggestions and comments were greatly appreciated.

Bill Cowan

Thomy Nilsson

Sharon McFadden

John S. Richards



Division 2: Physical Measurement of Light and Radiation

Report to 2023 Annual Meeting of CNC/CIE
Monday, November 27, 2023 (via Zoom)

Dr. Joanne Zwinkels

Email: joanne.zwinkels1@gmail.com

1. Introduction

The 2023 annual meeting of CIE Division 2 (D2) took place on Friday, September 22, 2023, in connection with CIE 2023 in Ljubljana, Slovenia. I was unable to participate in this meeting since there was no Webex access; Dr. Liviu Ivanescu from NRC was my proxy as the voting Country D2 member (attending in person).

2. Highlights

2.1 New Technical Committees and Reporterships

Since the 2022 CIE Division 2 meeting, one new TC and one new Reportership were proposed:

Proposal for a **new TC** to replace TC 2-92 which was closed. This new TC entitled “**Standard File Format for Electronic Transfer of Optical Radiation Data for Luminaires, Lamps and LED modules**” with proposed TCC: Danila Giannetti (IT) is currently in ballot.

Proposal for a **new Reportership** on “**Uncertainty Evaluation of Spectral Integrals**” was positively received by D2 members. Proposed Reporter is: Erkki Ikonen (FI).

2.2 Division publications

There have been four D2 publications since the 2022 D2 meeting:

ISO/CIE 23539:2023 Photometry – The CIE system of physical photometry
- from TC 2-93; TCC: Anders Thorseth (DK)

CIE 251: 2023 LED Reference Spectrum for Photometer Calibration
- from TC 2-90; TCC: Tuomas Poikonen (FI)

CIE DIS 017-SP2:2023 ILV: International Lighting Vocabulary – Supplement 2: Terms and Definitions for Horticultural Lighting

CIE x049:2022 Proceedings of the CIE symposium on the advances in measurement of temporal light modulation, October 11, 2022, Athens, Greece

2.3 Future meetings

- **D2 meetings** in connection with **CCPR/ CIE Joint Workshop “100 Years of $V(\lambda)$ and Future of Photometry”**, BIPM, Sèvres (Paris), France, May 30 – June 1, 2024
- **D2 meetings** in connection with **CIE 2025 (Midterm Conference)**, Vienna, Austria, July 4-12, 2025
- **D2 meetings** in connection with **CIE 2027 (31st Quadrennial Session)**, Nanjing, China, July 9-14, 2027



2.4 Other D2 activities since D2 2022 virtual meetings:

- **Workshop: Can cone fundamentals be used in everyday photometry?** Chaired by: **Tony Bergen** (on-line, 1 hr40min), Three introductory talks:
 - **Lorne Whitehead** “Introduction to cone fundamentals and the $VF(\lambda)$ function”
 - **Yoshi Ohno** “Viewpoint from CCPR and traceability”
 - **Peter Blattner** “Ideas for practical implementation of cone fundamental-based photometry”
- **Changes in D2 Officers for 2023-2027:**
 - **Tony Bergen (AU)** stepped down as the D2 Director (is the new VP Technical)
 - **Joanne Zwinkels (CA)** stepped down as one of the Associate Directors
 - **Thiago Menegotto (BR)** stepped down as the Division Editor
 - **Dong-Hoon Lee (KR)** is the new D2 Director (stepped down as D2 Secretary)
 - **Gael Obein (FR)** is the new D2 Secretary (stepped down as one of the Associate Directors)
 - **Valery Ann Jacobs (BE)** is the new D2 Editor
 - **Tobias Schneider (DE)** is a new Associate Director
 - **Anders Thorseth (DK)** is a new Associate Director

3. Canadian participation in Division 2 activities in 2022-2023

Activity	Title	Canadian Member
<i>Six TCs/JTCs:</i>		
TC 2-77	Fundamental Concepts	J. Zwinkels (member)
TC 2-90	LED reference spectrum for photometer calibration	J. Zwinkels (member)
TC 2-93	Revision of ISO 23539:2005(E)/CIE S010/E:2004 Photometry – The CIE system of physical photometry	J.Zwinkels, T. Nilsson (members)
TC 2-94	Measurement of total transmittance, diffuse transmittance and transmittance haze	L. Sandilands (member)
TC 2-98	Revision of CIE 130-1998 Practical methods for the measurement of reflectance and transmittance	L. Sandilands (member)
JTC-08	Terminology in light and lighting	J. Zwinkels (member)
<i>One Liaison:</i>		
L2-3	ISO TC6: Paper, Pulp and Board	L. Sandilands (member)
<i>One Officer:</i>		
Division 2	Associate Director	J. Zwinkels

4. Highlights of Division 2 Work Programme

4.1 Overview of the status of D2 TCs and Reporterships

The active D2 TCs, JTCs and Reporterships are listed below. The most recent Minutes will be attached, when they become available.

4.1.1 TC2-xx or JTC-xx: Title (chair)

- 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)** Terminology (D2TCC: Blattner)
- JTC-01 (D4/D1/D2)** Implementation of mesopic photometry in outdoor lighting (D2TCC: Goodman)
- TC 2-98** Revision of CIE 130-1998 Practical methods for the measurement of reflectance and transmittance (Cooksey)
- TC 2-97** Revision of CIE S025/E:2015 Test methods for LED lamps, LED luminaires and LED modules and its Supplements (Thorseth)
- TC 2-96** Revision of ISO/CIE 19476:2014 Characterisation of the performance of illuminance meters and luminance meters (Sperling)
- TC 2-95** Measurement of obtrusive light and sky glow (Bouroussis)
- TC 2-94** Measurement of total transmittance, diffuse transmittance and transmittance haze (H-L Yu)
- TC 2-91** Optical measurement methods of LED packages and LED arrays (Schneider)
- TC 2-89** Measurement of Temporal Light Modulation of Light Sources and Lighting Systems (Q.Li)
- TC 2-86** Glare Measurement by Imaging Luminance Measurement Device (ILMD); (Wienold)
- 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 2-79:** 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 2-68:** Optical Measurement Methods for OLEDs used for Lighting (Shitomi)
- TC 2-67:** Photometry of Lighting and Light-signalling Devices for Road Vehicles (Reiners)
- TC 2-62:** Imaging-Photometer-Based Near-Field Goniophotometry (Bredemeier)

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 2-80 (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 2-87 (Dong-Hoon Lee) Terminology in single/few photon metrology

DR 2-91 (Tony Bergen) Appropriate calibration and use of UV radiometers

DR 2-92 (Tobias Schneider) Recommendation for standardization of the maximum luminous efficacy for a given photometric condition (NEW)

DR 2-93 (Udo Kruger) Implementing CIE 198-SP2 using Monte Carlo Simulation (NEW)

4.2 Dissolution of and changes to TCs and Reporterships

4.2.1 The following TCs have been dissolved or recommended for dissolution:

TC 2-90 – due to publication of CIE 251:2023 LED Reference Spectrum for Photometer Calibration

TC 2-92 – *International Standard Format for the Electronic Transfer of Luminaire Optical Data* (TCC: Ian Ashdown sadly passed) and new follow-up TC in ballot, Danilo Giannetti, Proposed Chair

TC 2-93 – due to publication of ISO/CIE 23539:2023 The CIE system of physical photometry

4.2.2 The following Reporterships have been dissolved or recommended for dissolution:

DR 2-77 – after publication of IEC TR 62471-4

DR 2-89 – after an internal D2 final report

DR 2-90 – after an internal D2 final report

5. Call for Experts for CIE D2 TCs:

RF-05 Implementation of CIE 2006 cone fundamentals for photometric and colorimetric measurements

The terms of reference of this TC can be found at: <https://cie.co.at/researchforum/rf-05>

Chair: Tony Bergen (AU)

JTC 20 (D6/D2) Wearable alpha-opic dosimetry and light logging methods, limitations, device calibration and data schemes

The terms of reference of this JTC are to prepare a technical report that will review current wearable alpha-opic light dosimetry methods in scientific literature and beyond. It will also define limitations of current CIE-recommended practices for wearable alpha-opic light dosimeters, propose a calibration protocol for wearable alpha-opic light dosimeters adding to current CIE-recommended practices, discuss limitations of wearable dosimeters vis-à-vis the physiologically relevant quantification of alpha-opic light exposure. Finally, it will provide an inventory of needs and options for metadata and data schemes for alpha-opic dosimetry data collections.

Chair: Manuel Spitschan (DE)



Division 3: Interior Environment and Lighting Design

Report to CNC/CIE 68th Annual Meeting

Online, 2023-Nov-27

Jennifer A. Veitch, Ph.D.

Email: j_a_veitch@jdarchitect.ca

1. Introduction

The 2023 meeting of Division 3 was held in Ljubljana, Slovenia, on Sept. 21, 2023. I represented Canada in person at this meeting. The minutes will be available to CNC/CIE Members on the Members area of the website. As of this writing they have not yet been circulated.

2. Highlights

2.1 New Technical Committees, Reporterships, and Other Activities

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

Number	Title	TCC
TC 3-62	Resilient Lighting	Yuki Akizuki (JP)
TC 3-63	Decision scheme to determine lighting requirements for indoor environments	Anna Pellegrino (IT)
DR 3-37	Use of VR for lighting research on indoor spaces	Kynthia Chamilothoni (NL)

2.2 Division publications

Since the last CNC/CIE report in November 2022, D3 has completed three publications:

[TN 014:2023 Example luminance measurement setup for UGR](#)

[ISO/CIE TR 3092:2023 Light and lighting- Energy performance of lighting in buildings - Explanation and justification of ISO/CIE 20086](#) . This project was led by members of MC/ISO TC 274/ from BC Hydro.

[ISO/CIE DIS 8995-1:2023 Light and lighting — Lighting of work places —Part 1: Indoor](#) is out for comment and approval as a Draft International Standard. The ballot closes in early January, and it is hoped that final publication will occur in mid-2024.

2.3 Future meetings

2024: Online

2025: July 4-12, Vienna, Austria

2026: Online

2027: July 9-17, Nanjing, China

3. 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 13	Depreciation and Maintenance of Lighting Systems	Don McLean (co-chair)
JTC 15	Lighting of Indoor Workplaces	Jennifer Veitch (Member), Lorne Whitehead (Member)
TC 3-57	Generic Discomfort Glare Sensation Model	Don McLean (Member)
TC 3-59	The integration of daylight and electric lighting – photometric, colorimetric and radiometric requirements for the spectral design of indoor lighting	Deborah Gottesman (Member)
TC 3-60	Spectral daylight characteristics	Lucas Wen Tang (Member) Alstan Jakubiec (Member)
TC 3-61	Resilient Lighting	Andrew Silbiger (Member)
RF-02	Matters Relating to Temporal Light Modulation	J. Veitch (Convenor), Patrick Gauthier, Sarah Morgan (Members)

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.

<i>ISO/TC 274-JWG 1</i>	<i>Energy performance of lighting in buildings</i>	<i>T. Lau</i>
<i>[CIE JTC 6] (CIE-ISO)</i>		
<i>ISO/CIE AWI TR 3092</i>	<i>Light and lighting – Energy performance of lighting in buildings – Explanation and justification of ISO/CIE 20086</i>	<i>T. Lau, project leader</i>
<i>ISO/TC 274 JWG 2</i>	<i>Commissioning process of lighting systems</i>	<i>T. Lau</i>
<i>ISO/TC 163</i>	<i>Liaison representative from ISO TC 163 to ISO TC 274</i>	<i>T. Lau</i>
<i>ISO/TC205</i>	<i>Alternate liaison representative from ISO/TC 274 to ISO/TC 205</i>	<i>T. Lau</i>
<i>ISO/TC 205/WG7</i>	<i>Liaison representative from ISO/TC 274 to IAO/TC 205/WG7</i> <i>** Co-Convenor of new ISO JWG on same topic</i>	<i>C. Sampson</i>
<i>ISO/TC205/WG10</i>	<i>Liaison representative from ISO TC 274 to ISO TC 205/WG10</i>	<i>T. Lau</i>

4. Highlights of Division Work Programme

Division 3 is making plans for an online tutorial on the Unified Glare Rating in 2024, dates to be announced.

TC 3-61 is conducting a global survey of daylighting regulations. Please send any information you have on local requirements by Dec. 15, 2023.

4.1 Overview of the status of TCs and Reporterships

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]	ISO/CIE CD 10916 <i>Calculation of the impact of daylight utilization on the net and final energy demand for lighting</i> has been completed, will be published shortly.



Activity	Title	Chairman	Status
			<p>Toby Lau led the project group that developed ISO/CIE WD TR 3092 <i>Light and lighting – Energy performance of lighting in buildings – Explanation and justification of ISO/CIE 20086</i>. It was published in September 2023.</p> <p>ISO/NP TS 7127, <i>BIM Properties for Lighting — Luminaires and Sensing devices</i> has been published. A new work item has been proposed: PWI: Building information modelling properties for lighting — Daylight louver systems</p> <p>ISO 17772-1 <i>Energy performance of buildings - Indoor environmental quality - Part 1: Indoor environmental input parameters for the design and assessment of energy performance of buildings</i> is expected to be split into parts with the lighting part to be under full responsibility of ISO/TC 274 (meaning that this JWG-JTC will undertake the work).</p>
JTC 8 (all Ds)	Terminology	P. Zwick (DE)	The membership of this committee will be refreshed in 2024.
JTC 13 (D4/D3)	Depreciation and Maintenance of Lighting Systems	D. Gasparovsky (D4) Don McLean (D3)	A working draft said to be in preparation, but no report was received at D3 for the 2023 meeting (same as in 2022).
JTC 15	Lighting of Indoor Workplaces	E. Mochizuki [JP]	The complete document is out for DIS ballot, ending early January 2024.
JTC 18 (D3/D4)	Lighting Education	D3:	The committee met in Ljubljana, but progress is slow. A new TCC from D3 is needed.
TC 3-54	Revision of CIE 16-1970: Daylight	Y. Sutter [FR]	This TC's term was extended to 2024 because of the new TCC. However, no new report was received in 2023.
TC 3-56	Assessment of Discomfort Glare from Daylight in Buildings	T. Iwata [JP]	The Enquiry Draft ballot in April 2023 resulted in several comments. An Approval Draft ballot is expected shortly.
TC 3-57	Generic Discomfort Glare Sensation Model	G. Vissenberg (NL)	Work is progressing, but the subgroups encountered difficulties and some revision to the work plan might be required.
TC 3-58	Visual ergonomics and digital display use	P. Thorns (UK)	The draft is with CB and is expected to progress to the Enquiry Draft stage shortly.
TC 3-59	The integration of daylight and electric lighting – photometric, colorimetric and radiometric	Xue Peng (CN)	Components have been published as scientific journal articles. Through discussion, the document plan has changed slightly. The plan is to have a



Activity	Title	Chairman	Status
	requirements for the spectral design of indoor lighting		complete draft by 2024-06-30.
TC 3-60	Spectral daylight characteristics	M. Knoop (DE)	The work is progressing on track.
TC 3-61	Review of regional daylight requirement to assess the feasibility of global harmonization	C. Amorim (BR)	The TC is conducting a global survey to pull together information about daylighting requirements around the world.
TC 3-62	Resilient Lighting	Yuki Akizuki (JP)	Meetings have been held online and in person in Ljubljana. The TCC presented some of the ideas in a workshop on "Lighting for Preparedness" in the CIE 2023 conference.
TC 3-63	Decision scheme to determine lighting requirements for indoor environments	Anna Pellegrino (IT)	This new TC will provide guidance on the use of ISO/CIE 8995-1:2023.
RF-02	Matters Relating to Temporal Light Modulation	J. Veitch [CA]	Ongoing. There was a Webex meeting in June 2023 and an in-person meeting in Ljubljana.

4.2 Dissolution of and changes to TCs and Reporterships

Activity	Title	Chair	Reason
DR3-33	Guidelines for Post-Occupancy Evaluation of Lighting Installations	V. Garcia-Hansen [AU]	The internal report has been shared with D3 members. A TC proposal is expected.
DR 3-36	Luminance Measurement for UGR	Gilles Vissenberg [NL]	Closed following publication of CIE TN 014:2023..

4.3 Liaison representatives (LRs)

Official liaisons (denoted L below) exist between committees in organizations for which there is a formal relationship between the CIE and the other organization. Division Correspondents (DC in the table below) are information relationships with organizations who share common interests.

Activity	Partner committee	Representative
L 3-02	ISO/TC 159/SC 4 Ergonomics of Human-System Interactions	Shahidul Islam
L 3-03	ISO/TC159/SC 5 Ergonomics of the Physical Environment	
L 3-04	ISO/TC 163/SC 2 Thermal Performance and Energy Use in the Built Environment / Calculation Methods (Daylight)	
L 3-05	ISO/TC 205/WG 7 Indoor Visual Environment	Michail Papanikolaou
L 3-09	CEN/TC169/WG2 Lighting of Work Places	Tapio Kallasjoki
L 3-10	CEN/TC169/WG11 Daylight	Jan Wienold
L 3-11	CEN/TC169/WG3 Emergency Lighting in Buildings	Peter Thorns
L 3-12	CEN/TC169/WG9 Energy Performance of Buildings	Peter Thorns
L 3-13	ISO/TC163/WG4 Joint ISO/TC 163 - ISO/TC 205 WG: Energy performance of buildings using holistic approach	Laura Bellia
L 3-14	ISO/TC160/Glass in buildings	Peng Xue
DC 3-01	Illuminating Engineering Institute of Japan	Yoshiki Nakamura
DC 3-02	International Dark-Sky Association	Terry K McGowan



4.4 Research strategy update

The [CIE Research Strategy 2023](#) was released on Sept. 17, 2023. It is a complete update, and links the research topics to 12 of the 17 United Nations Sustainable Development Goals. The CIE will provide support letters to researchers proposing investigations that show promise to provide information that will address the topics outlined in the Research Strategy.

5. Other Division News

New Division leaders entered their roles in September 2023:

Division Director: Prof. Nozomu Yoshizawa (JP)

Associate Director – Electric Lighting: Dr. Adrie de Vries (NL)

Associate Director – Daylighting: Prof. Anna Pellegrino (IT)

Division Secretary – Dr. Cláudia Naves David Amorim (BR)

Division Editor – Dr. Veronica Garcia-Hansen (AU)

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.



Division 4: Transportation and Exterior Applications

Report to CNC/CIE 68th Annual Meeting

Webinar, November 27, 2023

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.

There are 36 countries with Delegates to Division 4.

The Div. 4 officers for 2023-2027 are (reconfirmed):

- Division Director Dionyz Gasparovsky (SK)
- Division Secretary Steve Lau (CN)
- 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- Maurice Donners (NL) - Lighting & signaling for transport
- AD#3-Sermin Onaygil (TR) - Exterior applications

Last Division 4 meetings were held in person participation mode on 21-22.09.2023 following CIE Quadrennial Session in Ljubljana (SI)

2 Highlights

2.1 New Technical Committees and Reporterships

N/A

2.2 Division publications

Here is a summary of the 2021/2022 publications in the scope of Division 4:

- 5 new (less than five years from publication)
- 1 expired in 2023 (CIE 150- Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations)
- 4 due to review in 2024:
- CIE 236 - Lighting for Pedestrians: A Summary of Empirical Data (TC 4-52)
- CIE 234 - A Guide to Urban Lighting Masterplanning (TC 4-56)
- CIE 140 - Road Lighting Calculations, 2nd Edition (TC-15)- proposed to ISO
- CIE 83 - Guide for the Lighting of Sports Events for Colour Television and Film Systems,3rd Edition (TC 4-55)
- 10 expired before 2023 (date for systematic review elapsed), subject to review in 2023/24
- 14 currently handled by active TCs or reporterships (either directly as revisions or within the given scope and terms of reference)
- 2 recommended for confirmation (extension of their “current” status)
- 4 recommended for revision (as new work item)
- 4 recommended for archival
- 6 other items needing special approach



2.3 Future Div 4 meetings

- 2024 Shanghai (CN) - mid-term meeting - 09.-13.05.2024
- 2025 CIE mid-term meeting - TBD

2.4 Symposiums, workshops and other events for 2023 – 2025

- 2023 – Istanbul (TR) - Urban Lighting Masterplanning – 3-5.05.2023
- 2023 - Ljubljana (SI) - Workshop: Lighting Up the Cities (masterplan + urban/architectural elements) (within CIE Quadrennial) - 15.-23.09.2023
- 2024 - Shanghai (CN) – Symposium: New Directions in Research and Development of Road Lighting and Urban Lighting – within the mid-term meeting - 09.-13.05.2024
- 2025 Vienna (AT) CIE Mid-term Meeting (incl. workshops)
- 2026 Call for proposals
- 2027 Nanjing (CN) CIE Quadrennial Session

3 Current Canadian participation in Division 4 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
TC 4-58	TC member	Ian Ashdown (deceased 2023)
	CNC Member	Deborah Gottesman
	TC member	Lynn Asselin
	TC member	Andrew Silbiger
TC 4-57	TC member	Don McLean
TC 4-58	TC member	Martin Aube
	Interested	Barbara Kolesnik

4 Highlights of Division Work Program

4.1 Overview of the status of TCs and Reporterships

Currently the Division 4 incorporates 12 Technical Committees, 7 Reporterships, participates in 3 Joint Technical Committees and has 6 Liaison Officers with other organizations:

4.1.1 TC Reports

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: Published end of 2021, to be reviewed in 2026

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: Hugh Barton (GB)

Status: Draft finished-focus only on LED signaling, sent to publication

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.

Chair: Valerie Muzet (FR)

Status: CIE 144 -v.2 *Road surface and road marking reflection characteristics* and CIE 66 will be withdrawn and embedded into the new CIE 144 version 3. *Extension of the deadline accepted until end 2025.*

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: Jerome Dehon (BE)

Status: work is progressing well and an extension has been requested until Jan 2024 to allow achieving the revision work, and further decide on CIE 150

TC 4-57 Guide for Sports Lighting

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)

Status: Document is in final form and awaiting approval from all TC members.

TC 4-58 Obtrusive Light (light pollution) from Colourful and Dynamic Lighting and its Limitation

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)

Status: Applied for extension of the reference date both for the TR and the chair until 31st December 2025.

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 on 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)

Status: The TC has restarted in 2023 and under their workplan proposed the final document should be done by end of 2025.

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)

Status: Delivery of the draft standard is delaying; extension has been requested in ISO.

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)

Status: First two drafts of TR were done in 2022; to be finalized in 2023.

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: Paolo Di Lecce (IT) replaced Thomas Baenziger (CH)

Status: Technical Note to be published in 2023. Working on the final document and expected to complete by end of 2024.

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)

Status: Working draft is completed and moved to the ballot.

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: Dionyz Gasparovsky (SK) replaces Piotr Pracki (PL)

4.1.2 Reporterships:

DR 4-36 CEN/TC169 Lighting Applications

Reporter: Axel Stockmar (GE)

DR 4-50 Document Status and Review

Reporter: Dionyz Gasparovsky (SK)

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

Reporter: Constantinos Bouroussis (GR)

Participation into the UN-organized conference “Dark and Quiet Skies” . Work recommended for the update of limits and key tables of CIE 150:2017

DR-4-54 Lighting for Cycling – establishing the State of Knowledge

Reporter: Jim Uttley (GB)

A draft of annotated bibliography has been produced in 2022 and since it requires further work (to develop it and identify new relevant publications) will be presented as a Technical Note to Div. 4 members by the end of 2024.

4.2 Dissolution of and changes to TCs and Reporterships

Two TCs were closed:

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: Pal J.Larsen (NO)

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, pedals, etc.)

Chair: Maurice Donners (NL)

Three Reporterships were closed.

DR 4-49 Flicker from Lighting on High Speed Road

Reporter: Chao-Hua Wen (CN)

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)

4.3 Division Liaisons and interorganizational collaboration (Chair: Maurice Donners)

L 4-06 LUCI (Lighting Urban Community International) (Tuba Bostanci Baskan)

A presentation “Masterplanning the city lights and nightscapes: a LUCI perspective” was hold in Istanbul in May 2023. Furter LUCI events in 2023: Turin, November (Luci d’Artista Light Festival) and Lyon, December (Lyon Fete des Lumiers).

L 4-08 CEN/TC 169/WG12 Road Lighting (Sermin Onaygil)



WG12 was activated upon the necessity of updating the EN13201 standards, which emerged with the developing technology and especially the widespread use of LED light sources in road lighting.

L 4-09 ISO TC22 SC35 Road Lighting (Paola Iacomussi)

ISO TC22 SC 35 is devoted to Lighting and visibility: Visibility and Conspicuity; Lighting and light-signaling and safety glazing materials. Work contained in 3 Working Groups

DC 4-01 IAU (International Astronomical Union) (Richard Wainscoat)

The CIE and the IAU have been exploring ways for closer cooperation on quality outdoor lighting for many years. The recommended technical and policy frameworks for the reduction of Artificial/Anthropogenic Light at Night on a worldwide scale motivated the drafting of a Memorandum of Understanding between the two organizations. The current status of the MOU is that the IAU Executive Committee has approved a draft, based on a CIE template, and has submitted it to CIE, where it is under consideration.

DC 4-02 PIARC (Jean-Claude Martin retired)

DC 4-03 GTB (The International Automotive Lighting and Light Signalling Expert Group - Groupe de Travail "Bruxelles 1952") (Yandan Lin)

GTB is the global group of vehicle manufacturers, system suppliers, light source manufacturers, testing laboratories and academia working to assure regulation and safety of automotive lighting systems and their installation.

New events and activities:

- adopted in June 2022 the GTB proposal allowing Driver Assistance Projections on the road ahead of the vehicle, as part of the Adaptive Driving Beam (ADB).
- approved on May, 2023 the Position Paper on "Photobiological Impact of Automotive Lighting (today 's available typical high-brightness LED headlamps are below the stated emission levels according to Standard IEC 62471-7:2023

DC 4-04 IALA (International Association of Marine) (Alwyn Williams)

IALA had its quadrennial conference in Rio de Janeiro, Brazil in June 2023; was voted to change the status of the organisation from a Non-Governmental Organisation (NGO) to an Inter-Governmental Organization (IGO). This could mean that a more formal arrangement with CIE needs to be put in place. IALA is interested in cooperating with CIE on the topics of measurement uncertainty and maintenance factor.

4.4 Research Fora

- Proposed priority research topics:
 - Adaptive Lighting - update, develop and consult for merging inputs with Div.3
 - Obtrusive Lighting – guidelines for limitation of the effects from outdoor lighting, for minimizing urban sky glow near observatories
- Standardization Strategy and Priorities

5 Other Division News

- DR Proposal Underpinning and development of current road lighting recommendations (M. Donners)
- Research Forum Proposal: Toward a new CIE reference observer non-biological (Paola Iacomussi)

The development and market proliferation of vision-based systems in automotive will need a different metric from the current one based only on the human observer (driver is identified with the CIE standard photometric observer in a given reference geometry, namely observing the road with a viewing angle of 1°). The shift in vehicle control systems from a biological photometric response to a non-biological one would provide considerable opportunity for safer systems. Hence, it becomes crucial to undertake a CIE research initiative aimed at deriving an empirically deterministic non-biological observer. It would also require a collaboration with Div. 2 (TC5-67, TC2-86, TC2-89, TC2-93, DR2-90) and Div. 8 (TC8-16, TC8-17).

- Proposed Standard: Intrusive Light (D. Gasparovsky)



Division 6: Photobiology and Photochemistry

Report to CNC/CIE 68th Annual Meeting

Sami Qutob (Canadian representative for Division 6)

Email: Sami.Qutob@hc-sc.gc.ca

1. Introduction

The 2023 Annual General Meeting of the CNC-CIE held by zoom on November 27th, starting at 1 PM to 4 PM EST.

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: <https://cie.co.at/technical-work/divisions/division6>

DIVISION OFFICERS

Wei Zhang (WZ)	CN	China	DD6 (Division Director)
Eric Liggins (EL)	GB	United Kingdom	DE6 (Division Editor)
Luke Price (LP)	GB	United Kingdom	DS6 (Division Secretary, Departing)
Laura Bellia (LB)	IT	Italy	DS6 (Incoming Division Secretary)
David H. Sliney (DHS)	US	United States	ADD6 (Associate Division Director)
			LR 6 01 (Liaison Representative)
			DC 6-03 (Division Correspondent)
Shu TAKESHITA (ST, online)	JP		ADD6
			NC Rep

Official Division 6 Members

Karl Schulmeister	AT	Austria
Urbain de Plessis	AU	Australia
Guy Vandermeersch	BE	Belgium
Kamelia Nikolova	BG	Bulgaria
Isac Roizenblatt	BR	Brazil
Sami Qutob	CA	Canada
Beat Gerber	CH	Switzerland
Tongsheng Mou	CN	China
Ralf Zuber	DE	Germany
Anne Bay	DK	Denmark
David Baeza Moyano	ES	Spain
Timo Partonen	FI	Finland
Coralie Barrau	FR	France
John O'Hagan	GB	United Kingdom
TM Chung	HK	Hong Kong S.A.R., CN
Gabriella Csik	HU	Hungary
Gabriela Dorfman-Furman	IL	Israel
Laura Bellia	IT	Italy



Shu Takeshita	ST	Japan
Mee-Ryoung Cho	KR	South Korea
Vineetha Kalavally	MY	Malaysia
Luc Schlangen	NL	Netherlands
Terje Christensen	NO	Norway
Urszula Blaszcak	PL	Poland
Constantin Ion	RO	Romania
Zoran Ledinski	RS	Serbia
Roman Belyaev	RU	Russia
Thorbjörn Laike	SE	Sweden
Katja Malovrh Rebec	SI	Slovenia
Banu Manav	TR	Turkey
Chien-Yue Chen	TW	Chinese Taipei
George C Brainard	US	United States
Edwin Mofokeng	ZA	South Africa

2. Highlights

- Division 6 annual meeting was held in Ljubljana University, Slovenia on September 21, 2023 at 1:00 pm CEST. Jennifer Veitch (JV) (CA NC Rep) was nominated as Proxy for Sami Qutob (SQ) (CA NC Rep)
- new Research Forum on Implementation of Cone Fundamentals (RF-05, Convener TB).
- and a Tutorial on Urban Lighting Masterplanning that had been held in May 2023.
- CIE news from the past year included the election in March of the Governing Board and Division Directors, publications of the best papers from the CIE midterm meeting in a special edition of Lighting Research & Technology and the CIE Research Strategy aligned around the UN Sustainable Development Goals.
- The new CIE Governance structure was accepted by ballot a few days prior to the Conference and included changes replacing the Board of Administration and Division Directors Committee with a new Governing Board (GB) and Technical Management Board (TMB) which reports to the GB, and procedures for the maintenance and change proposals for the International Lighting Vocabulary (ILV).
- Division 6 welcomes a new Division Director Wei Zhang. Manuel Spitschan is the new D6 chair of JTC 20 on wearable alpha-opic dosimetry and light logging methods, limitations, device calibration and data schemes. Ray Najjar who is approved as Division 6 rapporteur DR6-48 A comprehensive checklist for reporting light characteristics in in-laboratory human studies using light as an intervention.

2.1 New Technical Committees and Reporterships

2.1.1 TC Reports and Committees (4)

JTC 05 (CIE-IEC): Joint Technical Committee to Revise CIE S009/IEC 62471

Scope: To update CIE S009; to take account of revised exposure limit guidelines from the International Commission on Non-Ionizing Radiation Protection; to provide a clearer rationale for the definition of the risk groups; and to improve the guidance on measurements in conjunction with Division 2. To work with IEC TC76 and IEC TC34 on the development of product-specific requirements of the revised standard. However, responsibility for the product-specific requirements will rest with IEC. To work with IEC to produce a dual-logo standard to replace CIE S009/IEC 62471.

Status: The fourth meeting of the JTC for 2022-2023 had been held in Slovenia on Thursday September 21, 2023. The text of the draft standard is now fairly mature and should now move quickly to JTC ballot.



Chair: John O'Hagan (GB)

Canadian Member: None

JTC 08 (D1/D2/D3/D4/D6/D8): International Lighting Vocabulary

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.

Status: There were no new activities of JTC 08 during the year. There is continuous work on the improvement of the ILV and harmonization with the International Electrotechnical Vocabulary (IEV) (IEC 60050-845), ISO 80000-7 and other international terminology standards. However, after CIE’s intensive discussion (with chair of JTC-08 involved), a maintenance procedure for ILV was finally drafted for inclusion in new Code of Procedure which has recently been approved. JTC 08 was therefore to be re-activated to work on several change requests (collected by JTC 08 chair).

Chair: Peter Zwick (DE)

Canadian Members: J. Zwinkels

JTC 14 (CIE-ISO): Integrative Lighting

Scope: To undertake an analysis of published scientific studies and review experience from published application studies on non-visual effects of light on humans, with the aim to provide guidance for safe and beneficial use in lighting applications beyond illumination for vision. The material to be analysed is existing material plus the outcome from studies that will become available during the period of this JTC. In particular, the work of the CIE on light as an input for all known photoreceptors in the human eye is included. The outcome of this JTC shall not cover subjects where no proper scientific validation is available and will concentrate on “low hanging fruit” or only provide the status of the different aspects of this topic.

Status: This JTC was dissolved after the publication of the Technical Report: ISO/CIE TR 21783:2022(E) Light and lighting — Integrative lighting — Non-visual effects.

Chair: John O'Hagan (GB)
Div.3)

Canadian Member: Jennifer Veitch (President-Elect CIE)

JTC 19 (D2/D6): Terms and Definitions for Horticultural Lighting

Scope: To write an international standard for terms and definitions in the field of horticultural lighting, taking into account terms from existing national or regional publications.

Status: The JTC19 DIS went to ballot in May and comments were received from BA, Divisions 2 and 6, IEC/TC 34 and some National Committees. Voting on the Supplement to the ILV failed at BA, due to two negative votes and two main comments, which the JTC is seeking to address. One major comment is the consistent use of the term “light”, such as using “luminaire”, when the product emits visible radiation and radiation outside of the visible range. The other major comment is regarding the type of deliverable, i.e., independent publication or supplement to ILV without the involvement of JTC 08. A 2nd DIS was prepared and provided to the CIE technical manager requiring that the CIE CB needs more time to review whether to integrate it into CIE S 017. Waiting for CIE CB decision for next steps.

Chair: Wei Zhang (CN)

Canadian Member: Ian Ashdown



(NEW) JTC 20 Wearable alpha-opic dosimetry and light logging methods, limitations, device calibration and data schemes

Scope: The technical report will review current state-of-the-art of wearable alpha-opic light dosimetry methods in the scientific literature and beyond. It will also define limitations of current CIE-recommended practices for wearable alpha-opic light dosimeters, propose a calibration protocol for wearable alpha-opic light dosimeters adding to current CIE-recommended practices, discuss limitations of wearable dosimeters vis-a-vis the physiologically relevant quantification of alpha-opic light exposure. Finally it will provide an inventory of needs and options for metadata and data schemes for alpha-opic dosimetry data collections.

Status: The following conceptual buildings blocks have been completed:

- Review and scoping of existing CIE documents (ISO/CIE 23539; CIE 2024, CIE 198, CIE 202, CIE S026, ISO/CIE 19476, ...)
- Development of a metadata matrix for capturing information about light loggers and dosimeters
- Development and execution of a manufacturer-/developer-facing survey to determine the start-of-the-art of commercial/research grade light loggers and dosimeters, and their availability.

The next steps will be:

- Discussion of handling diverse types of data generated by light loggers and dosimeters, including machine learning-based synthetic data
- Analysis of survey data to capture a state-of-the-art snapshot of current practices
- Summarizing existing CIE documents for the TR
- Developing a researcher guide

A researcher guide on metrological considerations could be applied as an appendix to the TR if specific devices were to be used in a study.

Chair: Manuel Spitschan

2.1.2 Division Reporterships (4)

R6-43 Illuminators for Treatment of Infant Hyperbilirubinemia

Scope: referencing of the progress of phototherapy for neonatal jaundice in the last sixty years, a section on photo-chemistry and a section on photo-physics with spectral analysis from different LED and tube-based units.

Status: ML explained the progress of the final report and together with Tony Bergen (TB) DD2, who is now collaborating with this DR, outlining the scientific background of measurement practices to the reportership. The plan was ML with TB would add a section to describe the physics of phototherapy along with the other sections on photo-chemistry, safety and optimisation of the spectrum for submitting a final draft in October. However, no new draft has been offered for DE6 review.

Reporter: Michael Lynn

R6-45 Publication and maintenance of the CIE S026 Toolbox

Scope: A Toolbox to support the use of the international standard CIE S 026:2018 CIE System for Metrology of Optical Radiation for ipRGC-Influenced Responses to Light has been developed. A beta version of the Toolbox was shared last year with attendees at the tutorial held on this new system of metrology. After further testing the Toolbox is now available to support the use of the standard. The S 026 Toolbox and S 026 User Guide are freely available on the CIE Website. <https://cie.co.at/news/launch-cie-s-026-toolbox-and-user-guide>



Status: No changes were required during the year, and the majority of queries related to where to find the Toolbox and User Guide. As at 22nd August, Google Scholar had already listed 197 articles with reference to the term “melanopic” in 2023 alone, including 17 review articles. Probably 75% to 90% of these articles relate to human studies.

Reporter: Luke Price

R6-46 Second International Workshop on Circadian and Neurophysiological Photoreception

Scope: In preliminary guidance on applying “proper light at the proper time,” and in the absence of a formal consensus, a CIE position statement (CIE Position Statement on Non-Visual Effects of Light: Recommending Proper Light at the Proper Time, 2nd ed. (2019)) recently recommended using melanopic equivalent daylight illuminance (EDI) as an interim approach to manipulate non-visual responses. Further guidance on this approach is awaited from the participants of the 2nd International Workshop on Circadian and Neurophysiological Photometry (held in Manchester, August 2019), and this is expected to take the form of a scientific publication with melanopic-EDI centered recommendations for healthy indoor light exposures.

Status: The final publication was now freely available as a CIE Technical Note, CIE TN 015:2023, and the DR will be automatically dissolved. LP noted the TN included the three recommended thresholds for melanopic EDI at the eye for healthy adults with day-active schedules:

- ≥ 250 lx during the day
- ≤ 10 lx in the evening, from 3 hours before the intended bedtime
- Darkness at night for sleeping and in any case < 1 lx

from the second Manchester Workshop, along with a summary of the Workshop proceedings, and melanopic quantities and metrics related to assessing lighting’s potential for eliciting non-visual responses.

Reporter: Luke Price

R6-47 The Role of Light and Lighting Conditions in the Prevention, Development and Mitigation of Myopia: a Literature Review

Scope: Myopia was the main cause of irreversible blindness and myopia prevalence is increasing rapidly. It is known that spending time outdoors during the day is protective against the progression of myopia, but more research is ongoing and needed to understand mechanisms and come up with preventative strategies. This report reviews the literature on the role light has on myopia

Status: The report is on track. A shareable activity report was offered but was not provided as activities were ongoing and a CIE myopia workshop was proposed.

Reporter: Coralie Barrau

2.1.3 Reports from Liaison Representatives and Division Correspondents (8)

L6-01 IEC/TC76/WG1&9L Optical radiation safety and laser equipment - Optical Radiation Safety and Non-Coherent Sources

WG 9 developed a quasi-horizontal standard on reasonable assessment distance for lamps, due to the high level of misunderstanding related to IEC 62471, where the 20 cm measurement distance from the 1990s



was thought to be the same as an assessment distance. The measurement distance is defined to obtain a good signal-to-noise ratio but is not the exposure assessment distance. DHS gave a detailed history related to UVR and studies employing film badges, to outline the basis *why an assessment distance was more likely to be at about 1 and 2 m*, as a conservative average exposure distance for a worst case scenario. A table of exposure distances for different situations was given in 62471-6.

Reporter: David Sliney (US)

L6-08 CEN TC169 WG8 Lighting Applications - Photobiology

No activity reported.

Reporter: John O'Hagan (GB)

L6-10 IEC/TC 34 Lighting

JWG 21 is joint WG between IEC/TC 34 and TC 76, with the leadership held by IEC/TC 34. The next JWG 21 meeting is to be held on 2023-12-01 to review the maintenance proposal to IEC 62471-7:2023 towards amendment. Proposals on safety and performance of the light sources for horticultural lighting are being kept on hold by WG 19 whilst monitoring the status of the corresponding projects for general lighting in IEC/SC 34A/WG 4.

Reporter: John O'Hagan (GB)

L6-11 ISO/TC142/WG2 Cleaning equipment for air and other gases - UV-C technology

An updated draft was provided, covering the whole UV-C range and consistency with both the ILV and IEC 62471-6. The WG might be the first introducing far UV-C and officially defining it.

Reporter: Ewan Eadie (GB)

DC6-01 WHO

WHO had been considering a guidance document for member states to produce their own regulations for optical radiation safety. The proposed publication was now with the editor, so it would be expected to come out in 2024.

Reporter: John O'Hagan (GB)

DC6-02 ICNIRP

Work on UV and UV-C exposure was chaired by Nigel Cridland, based at the UK Health Security Agency. Considering the health impact of being continuously exposed, there were no human data available, because people haven't been exposed continually. The group were having difficulty working through this.

Laser guidelines work is on hold whilst looking for a new chair. Spectral effectiveness of very short wavelengths work was also on hold.

Reporter: John O'Hagan (GB)

DC6-03 ASP

ASP is the American Society of Photobiology, and it is one of the larger organisations holding scientific meetings in photobiology, the other being the European Society of Photobiology, ESP. The two alternate years for their meetings, ESP will be meeting in 2023 and ASP again in 2024. ASP offers a monthly webinar on different subjects in photobiology.

Reporter: David Sliney (US)

DC6-04 World Meteorological Organisation (WMO)

There was essentially nothing to report.

Reporter: Ann Webb (US)

2.2 Division publications

1. CIE DIS 017-SP2:2023 ILV: International Lighting Vocabulary –Supplement 2: Terms and Definitions for Horticultural Lighting (JTC19)
2. ISO/CIE DIS 28077(E):2023 Photocarcinogenesis action spectrum (non-melanoma skin cancers)
3. ISO/CIE TR 21783:2022(E) Light and lighting — Integrative lighting — Non-visual effects (JTC14, now closed)

In preparation

ISO/CIE DIS 8995-1:2023(E) Lighting of work places - Part 1: Indoor

- (JTC 15) submission for enquiry by ISO/TC 274 expected by Sept 15th 2023

- includes normative section “ipRGC-influenced responses to light – Melanopic Equivalent Daylight Illuminance” & non-normative example recommendations for melanopic EDI

TN XX:2023 Second International Workshop on Circadian and Neurophysiological Photoreception (DR 6-46) - international consensus recommendations for light exposures for healthy daily variations in physiology, sleep, and alertness (expressed in melanopic EDI)

2.3 Future meetings

It was suggested that the 2024 meeting would be via Webex, 2025 in Vienna and possibly 2026 Webex again.

The IUPB International Union of Photobiology will be having a conference in Perth in Western Australia in 2024, so CIE will be having an exhibition table there, as a sponsor of the event. The conference was likely to have an interest in CIE work on TLM, and CIE S026. This was mostly intended as a promotion of CIE.

3. Current Canadian participation in Division 6 activities

Activity	Title	Canadian Members
TCx-xx		Name (position)
JTC-8	International Lighting Vocabulary	Sharon McFadden Joanne Zwinkels (Associate Director)
JTC-14	Integrative Lighting (ISO JWG 4)	Jennifer Veitch (President-Elect CIE)
JTC-19	Horticultural Lighting	Ian Ashdown



4. Highlights of Division Work Programme

The summaries of activities in the various TCs of Division 6 are based on the minutes from the 2023 Division 6 meeting. Additional information on some of the TCs can be found in the minutes as well as the Activity Report for 2023. These are available in PDF format on the IEC Collaboration Platform (<https://collaboration.iec.ch/>).

4.1 Dissolution of and changes to TCs and Reporterships

DR 6-46 had been automatically dissolved.

A request for the maintenance for “CIE 247:2021 Guide for the Gonioradiometric Measurement of Upper Air Ultraviolet Germicidal Irradiation Luminaires” to be transferred from D6 to D2. There were nine Yes votes in the room, two No votes online and two Abstentions counted. The ballot was passed to transfer to D2. If there are questions or issues about photobiological aspects, these would be addressed jointly with Division 6.

5. Other Division News

5.1 Proposals for TCs and Reporterships

Myopia workshop from CBa.

A TC had been proposed originally related to DR 6-48 on a comprehensive checklist for reporting light characteristics in in-laboratory human studies using light as an intervention - Ray Najjar.

A TC (JTC-20) was proposed on Wearable alpha-opic dosimetry and light logging methods, limitations, device calibration and data schemes - Manuel Spitschan.

A TC on blue light retinal aging from the sun was suggested, related to an ISO document from 2018. It was left to future correspondence with CBa who put this forward.

No new reportership topics were proposed.

5.2 Division Research Strategy

There are several D6 relevant topics.

Two overarching themes

- (1) Digital transformation of metrology, science, and industry
- (2) Towards inclusive, equitable lighting

Three topical themes/research domains, strongly related to D6:

- Integrative lighting for people
 - designing lighting for individual needs, light/dark patterns and better use of daylight to support health/wellbeing/vision
- Fundamentals of photobiology for agriculture and aquaculture
 - optimal optical radiation for plant and animal facilities
- Enabling the application of safe & beneficial optical radiation
 - proper light at proper time, myopia, effects of actinic and NIR radiation, tracking optical radiation for health/wellbeing

The members and experts of D6 are encouraged to research CIE RS, and consider these topics.



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

APR	Annual Progress Report
CIE	Commission Internationale de l'Éclairage
CIE-BA	CIE Board of Administration
CIE-CB	CIE Central Bureau
CIE-DD	CIE Division Director
CIE-USNC	US National Committee
CISET	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
CORM	Council for Optical Radiation Measurement
CoP	CNC/CIE Code of Procedure
CIE/USA	US National Committee of the CIE
DC	Division Correspondent
DIS	Draft International Standard
DMV, DMA and DA	Division Members and Division Associates
ICSU	International Council for Science
IESNA	Illuminating Engineering Society of North America
IEV	International Electrotechnical Vocabulary
IS	International Standard
ISO	International Organization for Standardization
IRO	International Relations Office of the NRC
ITC and JTC	Interdivisional TCs (within CIE) and Joint TCs (with other organizations)
JTC	Joint CIE Technical Committee
LB	Letter Ballot
LR	Liaison Representative
M/AM	Members and Advisory Members of the CNC/CIE
MC	Mirror Committee
NC	CIE National Committee
NRC	National Research Council of Canada
NRC-IRO	NRC Government and International Relation office
NRC-MSS	NRC Measurement Science and Standards portfolio
NRC-CONST	NRC Construction portfolio
NRCan	Natural Resources Canada
SCC	Standards Council of Canada
SP	Supplement
TC	CIE Technical Committee