



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



Canadian National Committee Comité national canadien

MINUTES OF THE 66th ANNUAL CNC/CIE MEETING

2021-November-19

The 66th annual meeting of the Canadian National Committee of the Commission Internationale de l'Éclairage (CNC/CIE) was held on Friday, November, 19, 2021 on the Zoom videoconferencing platform arranged and hosted by J.A. Veitch. The Division Reports had been presented on Wednesday, November 17, in an online joint session with the CIE-USNC, hosted by them. Division Members' reports from the Canadian Division Members appear at the end of the report, after the appendices.

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

CAG	Chair Advisory Group
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
NC	CIE National Committee
NRC	National Research Council of Canada
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

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

The 66th annual meeting of the CNC/CIE was called to order at 13:04 EST on Friday, November 19, 2021 by J. Hovis, President. J. Hovis proposed moving item 6.1 on the agenda, Student Support to the CIE midterm meeting, to follow approval of the Minutes of the 65th annual CNC/CIE meeting. The motion was passed unanimously.

2. Minutes of the 65th Annual CNC/CIE meeting:

The minutes of the 65th Annual Meeting had not been circulated to members for approval. J. Hovis stated that the minutes would be circulated to members for comment/approval by electronic ballot before the end of the year.

6.1 Student Support to the CIE midterm meeting

A. Nixon provided an overview of her experience attending the CIE midterm meeting. She detailed her participation in the talks that were held and commented on the valuable networking opportunity that the meeting provided. She also commented on how the meeting exposed her to a wide variety of lighting research and to topics she had not been exposed to prior to attending the meeting.

2.1 Action Items:

Action items (AI-1 to AI-4) from the 65th annual meeting minutes (see Appendix C of the Minutes of the 65th Annual Meeting) were discussed. AI-1 is still open, but S.M. McFadden noted that L. Asselin had assisted with reviewing and translating CIE documents into French and would continue to do so. AI-2 is still open. AI-3 and AI-4 are still open and J. Hovis reminded those in attendance to continue outreach efforts to recruit members/affiliates to the CNC-CIE (especially those from Western Canada).

3. President's Report:

J. Hovis presented his report with discussion and is attached as [Appendix D](#). Highlighted in the report was the CNC/CIE contributions to the successful CIE midterm meeting hosted by the Malaysian National Committee and the significant amount of presentations presented by the CNC/CIE members at the Joint CIE/CORM meeting.

ACTION ITEM (2021-AI-1): A. Ghaemi will draft a congratulatory letter for J. Hovis to send to the Malaysian National Committee for their organization of the CIE midterm meeting.

4. Vice-President's Report:

J.A. Veitch presented her report with discussion and is attached as Appendix E. She highlighted the co-ordination and administration of CNC/CIE as an outreach activity within NRC Metrology.

5. Secretary's Report

A. Ghaemi presented his report with discussion and is attached as Appendix F. He noted that there was a transition in Secretariat duties in October from the previous Secretariat A. Rasoulof who served December 2020 – October 2021.

6. Financial Report:

S. Coyle presented her report with discussion and is attached as Appendix G. S.M. McFadden noted that there should have been an expense for the annual Zoom license in the report. S. Coyle agreed to resubmit the Treasurer's report with the Zoom license fee included. J.A. Veitch asked S. Coyle if the signing authority had been transferred from the previous Secretariat Bill Neil and S. Coyle that it had been but that A. Rasoulof's departure would mean that the signing authority would have to be updated again.

7. Membership and Elections

7.1 Membership and Elections Subcommittees

M. Mossman presented her report with discussion and is attached as Appendix I. She noted that there is an option to recruit 4 additional Members at Large for the Board of Administration and that this could be used to increase the geographical diversity of the Board of Administration. M. Mossman also noted that the term expiry dates are not well staggered – 10 of the 12 Board of Administration member's terms expire in 2023. J.A. Veitch stated that the reason why so many of the terms expire at the same time is because the terms are tied to the CIE Quadrennial sessions. J.A. Veitch stated that for the Division Members it might make sense to continue to tie the terms to the Quadrennial session while for Members at Large it might make more sense to stagger the terms. It was noted that the previous Secretary A. Rasoulof left his position in October and that a replacement would be determined by NRC Metrology staffing decisions.

7.2 M & E Subcommittee Membership:

There was no discussion about Membership & Election Subcommittee membership.

8. NRC Annual Performance Review of the CNC/CIE

The only concern raised during the NRC annual performance review of the CNC/CIE related to the lack of geographical balance of the CNC/CIE membership (no members from Alberta, Saskatchewan or Manitoba).

9. Mirror Committee to ISO/TC 274

9.1 Chair's Report

J.A. Veitch mentioned that 16 ballots and/or comments were cast on behalf of the committee, following discussions by e-mail with committee members through the SCC hub. All

ballots were responded to and three ballots are currently open with due dates in November and December 2021. J.A. Veitch stated that T. Lau attended the ISO/TC 274 plenary meeting on behalf of the CNC-CIE for this year. The ISO/TC 274 plenary meeting for next year is scheduled to be held in Oxford, U.K. during the month of June but is not yet known whether or not it will be held in person or virtually. There needs to be a decision made on who will represent Canada as Head of Delegation at the 2021 plenary meeting. The Head of Delegation makes the commitment to attend and participate in the ISO/TC 274 plenary meeting and is responsible for casting Canada's vote at the meeting. J.A. Veitch mentioned that T. Lau had served as Head of Delegation in the past and proposed a motion to appoint T. Lau as head of delegation for the 2022 plenary meeting of ISO/TC 274 subject to his willingness to serve. J. Zwinkels seconded the motion and the motion was carried unanimously.

9.2 ISO TC 274 Business

9.2.1 Chair Advisory Group

J.A. Veitch noted that S.M. McFadden had retired from the CAG in spring 2021. J.A. Veitch thanked her for her contributions to this work. T. Lau is leading a project for writing a document for ISO/TC 274. J.A. Veitch mentioned that C. Sampson has resumed his post as Liaison representative from ISO/TC 274 to ISO TC 205/WG 7 and is also the Liaison representative from CIE Division 3 to that same working group.

9.2.2 JWG 1 (Energy Requirements for Lighting in Buildings)

There was no discussion regarding JWG 1 (Energy Requirements for Lighting in Buildings).

9.2.3 WG 2 (Commissioning)

ISO/TC 274 has decided to start a new project (ISO/AWI TR 5911) for developing an ISO Technical Report to supplement ISO/TS 21274.

9.2.4 JWG 4 (Integrative Lighting)

ISO/CIE TR 21783 *Light and lighting – Integrative lighting – Non-visual effects* was revised and re-balloted in 2021. The ballot was successful and the document is approved. Final comments will be resolved and then it will be published.

9.2.5 JWG 5 (Lighting of Workplaces)

The PWI to revise ISO/CIE 8995-1 was approved. The joint ISO-CIE group is meeting monthly with task groups working independently in-between, to complete a first draft by May 2022.

9.2.6 Liaison Representatives

9.2.6.1 ISO/TC 163 to ISO/TC 274

There was no discussion regarding 9.2.6.1 ISO/TC 163 to ISO/TC 274.

9.2.6.2 ISO/TC 274 to ISO/TC205/WG7

C. Sampson has returned to serve as liaison representative between ISO/TC 274 to TC205/WG7 and is contributing to a document on daylighting design.

9.2.7 Outstanding ballots/comments needing discussion

9.3 SCC Matters

9.3.1.1 MC Administration

There was no discussion regarding MC Administration.

9.3.1.2 MC Accreditation & Financial Assistance

There was no discussion regarding MC Accreditation & Financial Assistance.

9.3.1.3 MC Membership & Balance

J.A. Veitch noted the need to maintain balance for mirror committees. SCC determines the balance of mirror committees by looking at the proportion of members in academia vs. industry instead of examining the geographic and language distribution of members. J.A. Veitch noted that V. Venkataramanan's change in affiliation from the University of Toronto to private industry may affect the balance of ISO-TC-274 and require the recruitment of additional members to maintain balance. J.A. Veitch noted that CNC-CIE members that are willing to take on the responsibilities of participating in the mirror committee would be the best place to recruit potential new members.

10. Ad hoc Subcommittees

10.1 Website Subcommittee:

S.M. McFadden noted that the Website Subcommittee consists of her, V. Venkataramanan, S. Qutob and J.A. Veitch. S.M. McFadden stated that the software used to run the website was recently updated and upgrading the site to use the newest version of this software would cost up to \$1000.

Moved (S.M. McFadden/ S. Qutob): The CNC/CIE will set aside \$1000 to upgrade the website.

10.2 Events Subcommittee (AIC 2022 Liaison):

V. Venktaramanan stated that he has been meeting with the organizers of the AIC 2022 conference about once a month concerning the CNC-CIE's participation. At the most recent meeting there was a suggestion about putting a panel discussion for novel lights. The AIC is seeking papers to be submitted for the conference and travel/accommodation support for speakers and is willing to waive the registration fee for speakers. J.A. Veitch asked those in attendance if the CNC-CIE should offer a studentship for the event like it did for the CIE-midterm.

Moved (L. Whitehead/ J.A. Veitch): The CNC/CIE will set aside \$500 to provide support to a student to attend the AIC 2022 conference in Toronto. Passed unanimously.

ACTION ITEM (2021-AI-2): A. Ghaemi will circulate a ballot to members for the recruitment of a student to attend the AIC 2022 meeting using a template previously used by J.A. Veitch.

10.3 Light Course Update

J. Hovis stated that meetings with those involved in setting up the Light Course modules will take place over the next 3-4 weeks. There is a desire to have a professional editor go over the module design and there is 2 ways for this to happen; (1) have the editor go over all of the presentations after they are put together (\$9000 - \$10000 estimated cost) or (2) have the editor provide specific templates that could be used as the slides for the course (\$1000 or \$100/template, for 10 templates total). After discussion between those involved in developing the Light Course (J. Hovis, L. Whitehead and D. Gottesman) and J.A. Veitch and S.M. McFadden it was decided that there would be a commitment to fund the template creation and that down the line there would be a discussion about approving the final editing once a more detailed estimate is provided. S.M. McFadden noted that the Light Course module could be delivered as a workshop with fees for those interested in participating and this would offset some of the costs for the course and also allow for valuable user feedback. V. Venktaramanan agreed with S.M. McFadden's idea of hosting a workshop for the course and using that as an opportunity to apply for some outreach grants (i.e. NSERC) that would offset some of the costs and then eventually have the workshop be publically available for free. J.A. Veitch noted that participants in CIE tutorials can watch content on their own time and then participate in a Q&A session with the expert presenting the content and that this approach could be used for this Light course module workshop. V. Venktaramanan stated that NSERC and NRC could provide outreach grants for the workshop.

Moved (J.A. Veitch/ D. Gottesman): The CNC/CIE will commit \$1000 for the use of a professional editor to develop templates for the lighting course. Further discussion about professional editing of the course materials are to take place after receiving a detailed quotation from the editor. Passed unanimously.

11. Other Business:

J. Hovis noted that Division 2 member J. Zwinkels will be stepping down from her position at the end of 2023. J. Hovis stated that there is a need to recruit more Division associates and asked those who are not Division members to consider becoming Division associates. Division associates are recognized by the CIE and can participate in Division activities by attend meetings, reading/editing documents but cannot cast ballots for their country. J.A. Veitch noted that the CNC-CIE CoP is in need of revision and proposed forming a subcommittee to go through and review/revise the CoP over the next year. After discussion, V. Venkataramanan, S.M. McFadden, M. Mossman and S. Coyle agreed to form the subcommittee.

ACTION ITEM (2021-AI-3): V. Venktaramanan, S.M. McFadden, M. Mossman and S. Coyle will form a subcommittee to go through and review/revise the CoP over the next year.

J.A. Veitch noted that the International Day of Light is on Monday May 16th 2022 and stated that registering the AIC 2022 meeting on the International Day of Light website might be a good way to boost its visibility. V. Venktaramanan agreed to register the AIC 2022 conference on the International Day of Light website.

J. Hovis noted that last year the CIE provided a list of publications that were voted on by members of NCs with the most voted publication being provided to NC members for free, and stated that this distribution of a noteworthy CIE publication voted on by NCs would be happening again this year.

11.1 Correspondence

There was no correspondence to report of.

11.2 Date and Place for next year's meeting

There was discussion about hosting next year's meeting as an online-only or as a hybrid online/in person meeting. J.A. Veitch noted that because of ongoing concerns with the COVID-19 pandemic it is likely that next year's meeting will be online-only. J. Hovis stated that the joint USNC-CNC CIE meeting will take place in 2023 and is expected to be an in-person meeting out West (Vancouver or Calgary). The decision for where next year's meeting will take place and its format will be left to the CNC-BA to decide in a future meeting.

12. Any other business

12.1 Adjournment

J Hovis adjourned the meeting at 15:24.



Ali Ghaemi

Administrator, Canadian National Committee of the CIE

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

CNC/CIE 66th Annual General Meeting

Proposed Agenda

DATE: Friday, Nov. 19, 2021

TIME: 13:00-16:00 EST [10:00 – 13:00 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/>

PROPOSED AGENDA: (see next page)

N.B. Division reports were presented jointly with the USNC/CIE in a separate Zoom session run by CORM on Wednesday, Nov. 17.



Ali Ghaemi

Administrator, Canadian National Committee of the CIE

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

LIST OF APPENDICES

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Division Member Reports



CNC/CIE 66th Annual Meeting

2021-Nov-19

Agenda

- | | |
|---|--------------------------|
| 1. Call to Order and Approval of Agenda | J. Hovis |
| 6.1 Student Support to the CIE Midterm Meeting | A. Nixon |
| 2. Minutes of the 65th Annual CNC/CIE meeting | J. Hovis |
| 2.1. Action items | |
| 3. President's report | J. Hovis |
| 4. Vice-President's report | J. A. Veitch |
| 5. Secretary's report | Ali Ghaemi/ J. A. Veitch |
| 6. Financial Report | S. Coyle |
| 7. Membership and Elections | |
| 7.1. Membership and Elections Subcommittees | M. Mossman |
| 7.2. M & E Subcommittee Membership | M. Mossman |
| 8. NRC Annual Performance Review of the CNC/CIE | J. Hovis |
| 9. Mirror Committee to ISO/TC 274 | J. A. Veitch |
| 9.1. Chair's report | J.A. Veitch |
| 9.2. ISO TC 274 Business | |
| 9.2.1. Chair Advisory Group | T. Lau |
| 9.2.2. JWG 1 (Energy Requirements for Lighting in Buildings) | T. Lau |
| 9.2.3. WG 2 (Commissioning) | T. Lau |
| 9.2.4. JWG 4 (Integrative Lighting) | J. A. Veitch |
| 9.2.5. JWG 5 (Lighting of Workplaces) | J. A. Veitch |
| 9.2.6. Liaison Representatives | |
| 9.2.6.1. ISO/TC 163 to ISO/TC 274 | T. Lau |
| 9.2.6.2. ISO/TC 274 to ISO/TC205/WG7 | C. Sampson |
| 9.2.7. Outstanding ballots/comments needing discussion | |
| 9.3. SCC Matters | J. A. Veitch |
| 9.3.1.1. MC Administration | |
| 9.3.1.2. MC Accreditation & Financial Assistance | |
| 9.3.1.3. MC Membership & Balance | |
| 10. Ad hoc Subcommittees | |
| 10.1. Website Subcommittee | S. McFadden |
| 10.2. Events Subcommittee (AIC 20220 liaison) | V. Venkataramanan |
| 10.3. Lighting Course Update | J. Hovis |
| 11. Other Business | J. Hovis |
| 11.1. Correspondence | |
| 11.2. Date and Place for next year's meeting | |
| 12. Any other business | |
| 12.1. Adjournment | J. Hovis |

APPENDIX B
CNC/CIE 66th 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
Joanne Zwinkels	Board of Administration, Division 2 Rep.	NRC-MSS
Lynn Asselin	Affiliate	Holophane (Acuity Controls)
Shirley Coyle	Board of Administration, Treasurer	Cree Lighting
Arnold Gaertner	Board of Administration	NRC-MSS
Ashley Nixon	Student, Attended CIE Midterm Meeting	University of Ottawa
Deborah Gottesman	Member	Independent Consultant
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.
Keith Niall	Member	-
Lorne Whitehead	Board of Administration	U of British Columbia
Sami Qutob	Board of Administration, Division 6 Rep.	Health Canada
Don McLean	Affiliate	DMD and Associates
Pierre Gallant	Member	Natural Resources Canada
Prem Kumar	Affiliate	Hubbell Canada LP
Jamal Carrington	Affiliate	Axis Lighting

APPENDIX C

Action Items from the 66th Annual Meeting of the CNC/CIE

Action Item	Responsible	Action	Status
2020-AI-1	All	Recruit a bilingual candidate for the Website Subcommittee	OPEN
2020-AI-2	J.A. Veitch	Develop a system for disseminating a call for experts and press releases to relevant groups that are interested in the activity of the CNC-CIE.	OPEN
2020-AI-3	All	Recruit Canadian organizations and individuals involved in the light and lighting community for the purposes of expanding the affiliates list and the outreach of CNC-CIE activity.	OPEN
2020-AI-4	V. Venktaramanan and C. Suvagau	V. Venktaramanan and C. Suvagau will get in touch with contacts in Western Canada about joining the CIE with the intention of improving geographic representation.	OPEN
2021-AI-1	A. Ghaemi	A. Ghaemi will draft a congratulatory letter for J. Hovis to send to the Malaysian National Committee for their organization of the CIE midterm meeting.	OPEN
2021-AI-2	A. Ghaemi	A. Ghaemi will circulate a ballot to members for the recruitment of a student to attend the AIC 2022 meeting using a template previously used by J.A. Veitch.	OPEN

APPENDIX D

CNC/CIE President's Report

November 19, 2021

Jeff Hovis

jhovis@uwaterloo.ca

I was hoping to be back to a relatively normal situation by this time, but it looks like the transition to the new normal will be slower than anticipated. The good news is that we have become much more proficient with the various online meeting platforms, and I suspect that many of us now have a time zone converter on our browser's favorite list.

In early April, I had a web conference with Dr. Terrie Romano from International Relations at the National Research Council regarding our annual performance review. No concerns were expressed; however, we were reminded that along with gender and race diversity, geographic diversity is also an important consideration in our membership.

The midterm general assembly was held online on September 24, 2021. Some highlights :

- The Central Board of Administration is continuing to work on improving relationships with NC and other organizations

- Procedures, statutes, and the code of ethics are being revised.

- The treasury is in good shape. There are a few additional expenditures expected over the next couple of years

 - Digitizing the archive, improving the website, moving to a digital format for publications, creating video announcements/overviews of technical reports, creating toolboxes and data sets

 - Income from the sale of publications - USA, Germany, and Japan are the major sources, but Canada is in the top 10

- Updating Research Strategies (every 4 yrs)

- A reminder that the CIE will write Support of Research letters for projects that align with the research strategies

- As many of you are aware, Dr. Veitch was elected to the President-Elect Position and will assume the President's Position at the 30th Quadrennial Session of the CIE, September 15-23, 2023.

One of the year's highlights was the CIE Midterm meeting hosted by the Malaysian National Committee. The entire program was online, and it went very smoothly. There were 5 invited presentations, 132 oral and poster presentations, and 8 workshops. Drs. Whitehead and Veitch presented or were co-authors on 2 oral presentations and 1 poster. Dr. Whitehead also hosted a workshop on a Roadmap for cone-based colorimetry. Dr. Veitch co-hosted one of the networking programs, "Fledgling Professionals," chaired the International Scientific Committee, and was a member of the International Organization Committee. Dr. Zwinkles also help with organizing the conference as a member of the International Scientific Committee and Review Panel.

Another highlight is the joint virtual meeting with USNC and CORM. As of this writing, it has not been held, but our members are authors or co-authors on 20% of the presentations.

The Board of Administration met about every 8 weeks this past year. We will try to continue this practice for the upcoming year. If an issue comes up that you think needs to be discussed by the Board, bring it to one of the board member's attention or email CNC-CIE-Secretariat and we will add it to the agenda for the next meeting.

In 2020, the Central Bureau offered a free copy of a "best of the CIE" publication to be distributed to National Committee members. The selected publication was "CIE 227:2017 Lighting for older people and people with visual impairment in buildings." We distributed 8 copies. The program is continuing this year. We will have more information later in the meeting.

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



APPENDIX E

CNC/CIE Vice-President's Report November 2021

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 four 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. In October, I assisted with the transition from our Secretary, Dr. Amin Rasoulof, to our Administrator, Ali Ghaemi.
2. I assisted as needed to support the President, Secretary, and Treasurer in the ongoing work of CNC/CIE business. This includes monitoring the CNC/CIE mailbox and confirming that our procedures (e.g., for ballots) follow our Code of Procedure.
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.

APPENDIX F

CNC/CIE Secretary's Report November 2021

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

This year the CNC/CIE Secretariat duties were split between Amin Rasoulof (December 2020 – October 2021) and Ali Ghaemi (October 2021 – present). Some of the tasks that were completed during that time are listed below:

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 2020/21 were
 - i. LB NC2004 Ballot on the CIE Consolidated Budget FY 2021: Approved
 - ii. LB NC2005 Selection of a CIE publication for distribution by NCs and ANCs in 2021: CIE 227:2017 *Lighting for older people with visual impairment in buildings* was selected and made available to 37 members, 8 members requested a copy of the publication.
 - iii. LB NC2101 Selection and approval of the date for the Midterm Meeting of the General Assembly: Approved
 - iv. LB NC2102 Ballot on the Approval of Dr. Jennifer Veitch as CIE President-Elect: Approved
 - v. LB NC2103 Ballot on 2nd DIS ISO/CIE 11664-2: Approved with comments

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

4- Requests for Funding: None received. However, at a meeting of the CNC/CIE-BA on March 26, 2021, we decided to sponsor a Canadian student to attend the virtual CIE 2021 conference. A call was sent, with a deadline of June 30 for applications. The selected student was Ms Ashley Nixon, a PhD candidate in Psychology from the

University of Ottawa. She will give a brief verbal report on her experience at the meeting on Nov. 19, 2021.

- 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 (77), Board of Administration (12) and All (110). 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 66th Annual Meeting

19 November 2021

The financial statement for the period 1 October 2020 to 29 September 2021 is presented below.

Financial Report 1 October 2020 – 29 September 2021 (rev1)

Balance (1 October 2020)	\$26,314.36
Income:	
Payment from CIE for publication sales:	\$1634.65
Total Income:	\$1634.65
Expenses:	
Zoom fee reimbursement (2020 AGM)	\$135.60
Website hosting and domain name renewal:	\$203.00
Student Scholarship CIE-Malaysia fee reimbursement	\$326.23
Total Expenses:	\$664.83
Net Income (Loss):	\$969.82
Balance (29 September 2021)	\$27284.18

Respectfully submitted,

Shirley Coyle
Treasurer, CNC/CIE
Scoyle6889@gmail.com

APPENDIX H

CNC/CIE Web Site Report November 2021

Sharon McFadden and Jennifer Veitch

1 Domain

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

2 Usage

Usage declined slightly again this past year. During the last 12 months we averaged 210 unique visits and 274 visits per month as compared to 290 unique visits and 425 visits in 2020. About 13% of the visits or 36 per month lasted longer than 30 seconds. On average, 4 pages were viewed per visit. Canadians were the most frequent visitors with Americans a close second. Hungary was third.

Nineteen 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. We have been using the members-only area website to transfer large documents for review, which provides a reason for people to engage with the site and avoids large e-mail attachments.

3 Content

- Sharon continues to upload press releases for new publications and provide direct access to free CIE publications on the website.
- As well as providing information on CIE events, Sharon posts notices about relevant national and international lighting events. Members are encouraged to send information on lighting events to have them put on the website.

Two additional members have joined the website committee - Venkat Venkataramanan and Sami Qutob. Their role is to ensure that the website content remains relevant and current. As well, Lynn Asselin has reviewed many of the French pages 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.

4 Maintenance

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



APPENDIX I

CNC/CIE Membership Subcommittee – Chair's Report November 2021

Prepared by: Michele Mossman

Current CNC/CIE Membership

The current membership includes:

- 12 Members of the CNC/CIE Board of Administration
- 33 Members (includes the 12 Members of the Board of Administration)
- 77 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
Shirley Coyle	Treasurer	2023
Joanne Zwinkels	Division 2 member	2023
Cristian Suvagau	Division 4 member	2023
Sami Qutob	Division 6 member	2023
Tara Akhavan	Division 8 member	2022
Arnold Gaertner	Member at Large	2023
Michele Mossman	Member at Large	2024
Venkat Venkataramanan	Member at Large	2023
Lorne Whitehead	ex-officio, CIE Vice President	2023

Geographic representation: The CIE/CNC aims to have as diverse geographic representation as possible. Currently, the geographic representation of the 33 CNC/CIE Members is: British Columbia (7), Newfoundland (1), Ontario (20), Prince Edward Island (1), and Quebec (4).

Changes to membership

Three individuals have recently retired and have chosen to step down from their role as CNC Members: Joseph Bastianpillai, Andre Laperriere, and Mankajee Shrestha. (Andre was also a Member at Large on the CNC Board of Administration.) On behalf of the CNC/CIE, the Executive committee would like to express their great appreciation to Joseph, Andre, and Mankajee for the many valuable contributions they have made to the CIE during their tenure as CNC/CIE members.

Four Affiliates were removed from the list during 2021, either because of relocation or because we were no longer able to reach them at their contact email address, and two individuals joined as new Affiliates.

Membership nominations for 2021:

Members:

- Chantal Arsenault is willing to renew for another 4-year term as Member.
- Vince Cimino is willing to renew for another 4-year term as Member.

Possible membership activities for consideration in 2022:

- We have the option to recruit up to 4 additional Members at Large for the Board of Administration. This is not essential, but is an opportunity to increase diversity on the Board, including geographic representation.
- The term expiry dates for the current members of the Board of Administration are not well staggered – 10 of the 12 BA member terms expire in 2023. We may want to consider if it is appropriate to adjust these term expiry dates to ensure continuity and stability.

Brief biographies for 2021 CNC member renewal nominees:

Chantal Arsenault

With a Bachelor's degree in physics, Ms. Arsenault has been working at the National Research Council Canada as a Technical Officer since 1997. With experience in photometry and radiometry metrology, she is focused on the spectral characterization of light sources, used in studies of lighting and its effects on occupant satisfaction and well-being. She has also developed expertise in the design and implementation of data acquisition systems and managing laboratories within the Lighting and Ventilation Quality Group.

Vince Cimino

- Graduated as a Technologist in 1966 from Hamilton Institute of Technology in Control System (now called Mohawk College)
- Graduated from University of Windsor in 1973 – Electrical Engineering
- Worked for Public Works Canada in Ottawa, 1973-1975 – Building Electrical Design
- Worked for Transport Canada, 1975-1979 – Design of Airports
- Worked for MTO 1979-2001- Development Engineer for Highway Lighting and Traffic Signals
- Worked at ARCO Engineering Inc. 2001 to Present – Design of Lighting Systems for Highway, Inspections of Highway Lighting Systems. Owner of ARCO Engineering Inc.
- Member of Illuminating Institute of North America (IENSA) for over 25 years.
- Member of CNC/CIE

**MC-ISO-TC 274 Chair's Report
November 5, 2021**

Jennifer A. Veitch, Ph.D.

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

A. Membership

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

In the past year, Andre Laperrrière has retired and withdrawn from his professional affiliations.

The SCC has announced that it will begin a review of the balance of mirror committees in the coming months. This might result in a need to recruit additional members. Any Canadian is welcome to join, but especially anyone already affiliated with the CNC/CIE. It does require a separate application to the SCC, which can be done here:

<https://www.scc.ca/en/standards/committees/iso-tc-274-light-and-lighting>.

B. Activities

1. Ballots

I have cast 16 ballots and/or comments on behalf of the committee (see Annex for the full report), following discussions by e-mail with committee members or through the SCC Hub. We responded to all ballots. Three ballots are currently open with due dates in November and December 2021. The number of ballots was steady (16 total in 2021 and in 2020).

I thank the committee members for their participation, particularly through the new SCC Hub and despite its poor functionality. 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 again held online. Toby Lau served again as our Head of Delegation. His report to SCC about the meeting is shown in Annex B.

If the 2022 plenary meeting takes place in person, it will be in Oxford, UK. However, that is subject to the ISO directives and the state of the pandemic. (As of this writing, in-person meetings are suspended until 2022-01-31.)

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

3. Contributions to ISO/TC 274

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

<i>Current Activities</i>			<i>Comment</i>
ISO/TC 274 CAG	Chair Advisory Group	T. Lau	Sharon McFadden retired from the CAG in spring 2021. We thank her for her contributions to this work.
ISO/TC 274-JWG 1 [CIE JTC 6 (CIE-ISO)]	Energy performance of lighting in buildings	T. Lau	In addition to the project on the line below, this group also is working on ISO/CIE AWI 10916, <i>Calculation of the impact of daylight utilization on the net and final energy demand for lighting</i>
	ISO/CIE AWI TR 3092 <i>Light and lighting – Energy performance of lighting in buildings – Explanation and justification of ISO/CIE 20086</i>	T. Lau – Project leader	Currently in preparation, stage 10.99
ISO/TC 274 WG 2	Commissioning process of lighting systems	T. Lau	ISO/TC 274 has decided to start a new project (ISO/AWI TR 5911) for developing an ISO Technical Report to supplement ISO/TS 21274 .
ISO/TC 274 JWG 4 [CIE JTC 14 (CIE-ISO)]	Integrative lighting	J. Veitch	ISO/CIE TR 21783 <i>Light and lighting - Integrative lighting - Non-visual effects</i> was revised and re-balloted in 2021. The ballot was successful and the document is approved. Final comments will be resolved and then it will be published.
ISO/TC 274 JWG 5 [CIE JTC 15 (CIE-ISO)]	Lighting for workplaces	J. Veitch	The PWI to revise ISO/CIE 8995-1 was approved. The joint ISO-CIE group is meeting monthly with task groups working independently in-between, to complete a first draft by May 2021.
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	Conor resumed his post as this liaison representative in February 2021.

C. Relations between the CNC/CIE and SCC:

1. Mirror committee accreditation and funding

In January 2021, on our behalf, I completed our annual Application for Committee Accreditation [Annex C] and Financial Assistance for the fiscal year 2021-22. We were successful [Annex D], receiving a score of 74.25 out of a possible 105, which put us in the rank of 65 out of 241. This is in part thanks to our renewed external stakeholder support from BC Hydro and CSA. SCC decided not to invoice external stakeholders because of the suspension of in-person meetings, and returned funds that had been received for 2020-21.

I believe that SCC does not want a new activity report from MC-ISO-TC274 this year. They have said that they will use the prior scores by default except for committees that have undergone significant change. I will verify this with SCC prior to the meeting.

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

Members of many mirror committees continue to provide negative feedback to the SCC concerning the Standards Hub platform. It takes considerable effort to find ballots requiring attention, not least because of duplicate entries and problems with the automated titles of entries. No changes to the platform have been evident, and this wastes the time of all MC members.

Annex A – Record of MC-ISO-TC274 Voting between 2020-11-26 and 2021-11-05

Item #	Title	Circulated	SCC due date	Questions	Vote	Date ballot cast
N641	Draft Resolution 115/2020 (Appointment of ISO/TC 274/JWG 1 Co-Convenor) ISO/TC 274 agrees to the appoint Dr. Laura Bellia as Co-Convenor for ISO/TC 274 /JWG 1 "Energy performance of lighting in buildings (joint working group with CIE-JTC 6)" from CI...	2020-11-24	2020-12-06	No. Questions Possible Answers 1 Do you agree with Draft Resolution 115/2020 to appoint Dr Laura Bellia as ISO/TC 274/JWG 1 Co-Convenor? Yes No (comment required) * Abstention	1. Yes 2. Yes	2020-12-04
N642	Draft Resolution 116/2020 (Reappointment of ISO/TC 274/JWG 4 Convenor) ISO/TC 274 agrees to reappoint Mr Peter Dehoff as Convenor for ISO/TC 274 /JWG 4 "Integrative lighting (joint working group with CIE-JTC 14)" for one year starting 2021-01-01. Draft...	2020-11-24	2021-02-02	No. Questions Possible Answers 1 Do you agree with Draft Resolution 116/2020 to reappoint Mr Peter Dehoff as ISO/TC 274/JWG 4 Convenor? Yes No (comment required) * Abstention 2 Do you agree with Draft Resolution 117/2020 to reappoint Dr John O'Hagan as ISO/TC 274/JWG 4 Co-Convenor? Yes No (comment required) * Abstention (*) A Comment is required for this answer value.	1. Yes 2. Yes	2020-12-04
	Collaboration with ISO/TC 205 concerning the work on PWI 20734 "Daylighting design procedure for indoor visual environment" in ISO/TC 205/WG 7	2021-01-22	2021-02-07	The secretariat kindly asks you for your feedback on the draft proposal on the cooperation with ISO/Tc 205 on PWI 20734 "Daylighting design procedure for indoor visual environment" circulated with document N 653 by answering the questions below. No. Questions Possible Answers 1 Do you have comments on the draft proposal presented in N 653 on the participation in PWI 20734? Yes * No 2 If a JWG as proposed would be established for the joint development of PWI 20734, do	1. Yes (CA supports proposal). 2. Conor Sampson nominated as an expert member. 3. Conor Sampson nominated as LR to ISO.TC 205.WG7.	2021-02-12

Item #	Title	Circulated	SCC due date	Questions	Vote	Date ballot cast
				you propose an expert or co-project leader for development of that project? Would you propose a co-convenor for a JWG? Yes (name(s) and proposed role(s): expert, co-project leader, co-convenor) * No		
N651	Enquiry to collect input for potential topics for future standardization work in ISO/TC 274	2021-01-18	2021-03-07	Do you want to provide a potential topic for future standardisation work in ISO/TC 274? Yes * No (*) A Comment is required for this answer value.	No	2021-03-08
	<p>Draft Resolution 118/2021</p> <p>ISO/TC 274 decides to establish a liaison to ISO/TC 159/SC 5 “Ergonomics of the physical environment” and appoints Mrs. Nathalie Coursière as liaison representative.</p> <p>Draft Resolution 119/2021</p> <p>ISO/TC 274 appoints Mrs. Nathalie Coursière as liaison representative to ISO/TC 159/SC 5/WG 7 “Dynamic signs and signals in physical environments”.</p>	2021-02-24	2021-03-24	<p>1 Do you agree with Resolution 118/2021 (Liaison to ISO/TC 159/SC 5 and appointment of Mrs. Nathalie Coursière as liaison representative)? Yes No Abstention</p> <p>2 Do you have a different nomination for a liaison representative to ISO/TC 159/SC 5? Yes No Abstention</p> <p>3 Do you agree with Resolution 119/2021 (appointment of Mrs. Coursière as liaison representative to ISO/TC 159/SC 5/WG 7)? Yes No Abstention</p> <p>4 Do you have a different nomination for a liaison representative to ISO/TC 159/SC 5/WG 7? Yes No (*) A Comment is required for this answer value.</p>	<p>1. Yes 2. No 3. Yes 4. No</p>	2021-03-24

Item #	Title	Circulated	SCC due date	Questions	Vote	Date ballot cast
N671	Proposal of Co-Convenor for the proposed – ISO/TC 274 Joint Working Group/ Liaisons	2021-03-31	2021-04-22	No. Questions Possible Answers 1 1. Do you approve Draft Resolution 120 regarding the appointment of Mr. Connor Sampson as Co-Convenor for the proposed ISO/TC 205 – ISO/TC 274 Joint Working Group? Yes No * Abstention 2 2. Do you approve Draft Resolution 121 regarding re-appoint Mr. Conor Sampson as liaison representative until a Joint Working Group with ISO/TC 205/WG 7 is established? Yes No * Abstention (*) A Comment is required for this answer value.	1. Yes 2. Yes	2021-04-23
N 673	Second Call for Project Leader /Experts “Life cycle Cost”	2021-04-12	2021-04-26	No. Questions Possible Answers 1 Do you wish to nominate an expert as candidate for a project leader for a potential project on “Life cycle cost”? (see N 673) Yes (Please provide contact details and CV) * No 2 Do you wish to nominate (further) expert(s) to work on a potential project on “Life cycle cost”? (see N 673) Yes (and we nominate experts below) * No (*) A Comment is required for this answer value.	1 No 2 No	2021-04-23
N659 - N661	representative to ISO/TC 205/WG 7 “Indoor visual environment”	2021-02-24	2021-05-06	No. Question Possible options 1 1a. Do you approve, disapprove or abstain on this NWIP? Approval Disapprove* Abstain 2 Please also select from one of the following options (note that if no option is selected, the default will be the first option):1 Draft document will be registered as new project	1a. Approve Stage 20.20 NA, we approve 1b Yes 2 No attachments 3 No additional comments 4. No nominations. Our experts are committed to other projects; however, experts	2021-05-07

Item #	Title	Circulated	SCC due date	Questions	Vote	Date ballot cast
				<p>in the committee's work programme (stage 20.00)</p> <p>Draft document can be registered as a Working Draft (WD - stage 20.20)</p> <p>Draft document can be registered as a Committee Draft (CD - stage 30.00)</p> <p>Draft document can be registered as a Draft International Standard (DIS - stage 40.00)</p> <p>3 In case of disapproval, do you believe that further study and consultations are needed first among committee members on this proposal as a preliminary work item before this proposal can be formally accepted? 2 Yes No</p> <p>4 1b. Did you consult with the range of relevant stakeholders identified in the proposal in the development of this voting position and related comments? Yes No</p> <p>5 2. Standard(s), regulation(s), and other relevant documentation existing in our country, with any remarks concerning their application if necessary and consequences for global relevance, as well as copyright information on these documents, are attached: Yes (references provided below) * No</p> <p>6 3. Do you wish to add any additional comments? Yes * No</p> <p>7 4. We are committed to participating actively in the development of the project, at least by commenting on working drafts (P-members voting "Disapprove" in Qu. 1a may nevertheless nominate experts): Yes (and we nominate an expert below) * No</p>	already active in JWG1 will monitor progress.	

Item #	Title	Circulated	SCC due date	Questions	Vote	Date ballot cast
				(*) A Comment is required for this answer value. Justification statement as per National Body (NB) perspective (short) * (1) This question does not appear if the answer to question 1 is "Disapprove" (2) This questions only appears if the answer to question 1 is "Disapprove"		
N704	Call_for_Comments_on_ISO/FDIS_23456-1_from_ISOTC_159SC_5	2021-07-07	2021-07-17	Do you have any comments on ISO/FDIS 23456-1?	posted 2021-07-19: Abstain There was no opportunity to engage relevant Canadian experts in the 10 day time frame provided. Corrected 2021-07-20: -YES-WITH COMMENTS	2021-07-19 2021-07-20
N720	Comment on ISO/TC130 proposal Proposal for TR on colour and translucency measurement ISO/TC 130 - proposal for TR on colour and translucency measurements for 3D printed matter	2021-08-10	2021-08-16	Summary of questions: Do you have any comments on the proposal by ISO/TC 130 (N 720) Yes * No Abstain	Do you have any comments on the proposal by ISO/TC 130 (N 720) Yes	2021-08-16
N718	Call for Comments on ISO/DTR 9241-610 Draft for 2nd DTR ballot - update (ISO/TC 159/SC 4)	2021-07-28	2021-08-19	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.	Disapproval	2021-08-18

Item #	Title	Circulated	SCC due date	Questions	Vote	Date ballot cast
PWI 8995-1	Lighting of work places — Part 1: Indoor	2021-06-10	2021-08-22	<p>Lighting of work places — Part 1: Indoor</p> <p>ADD</p> <p>Expected action: VOTE Circulation date: 2021-06-13 SCC due date: 2021-08-22</p> <p>Document type: 0601NPBALLOT Project(s): ISO/CIE NP 8995-1 Note: No. Question Possible options 1 1a. Do you approve, disapprove or abstain on this NWIP? Approval Disapprove* Abstain 2 Please also select from one of the following options (note that if no option is selected, the default will be the first option):1 Draft document will be registered as new project in the committee's work programme (stage 20.00) Draft document can be registered as a Working Draft (WD - stage 20.20) Draft document can be registered as a Committee Draft (CD - stage 30.00) Draft document can be registered as a Draft International Standard (DIS - stage 40.00) 3 In case of disapproval, do you believe that further study and consultations are needed first among committee members on this proposal as a preliminary work item before this proposal can be formally accepted?2 Yes No 4 1b. Did you consult with the range of relevant stakeholders identified in the proposal in the development of this voting position and related comments? Yes No</p>	<p>No. Question Possible options 1 1a. Do you approve, disapprove or abstain on this NWIP? Approval</p> <p>2 Please also select from one of the following options (note that if no option is selected, the default will be the first option):1 Draft document will be registered as new project in the committee's work programme (stage 20.00) Draft document can be registered as a Working Draft (WD - stage 20.20)</p> <p>3 In case of disapproval, do you believe that further study and consultations are needed first among committee members on this proposal as a preliminary work item before this proposal can be formally accepted? NA 4 1b. Did you consult with the range of relevant stakeholders identified in the proposal in the development of this voting position and related comments? Yes 5 2. Standard(s), regulation(s), and other relevant documentation existing in our country, with any remarks concerning their application if necessary and consequences for global relevance, as well as copyright information on these documents, are attached:</p>	2021-08-08

Item #	Title	Circulated	SCC due date	Questions	Vote	Date ballot cast
				<p>5 2. Standard(s), regulation(s), and other relevant documentation existing in our country, with any remarks concerning their application if necessary and consequences for global relevance, as well as copyright information on these documents, are attached: Yes (references provided below) *</p> <p>No</p> <p>6 3. Do you wish to add any additional comments? Yes *</p> <p>No</p> <p>7 4. We are committed to participating actively in the development of the project, at least by commenting on working drafts (P-members voting "Disapprove" in Qu. 1a may nevertheless nominate experts): Yes (and we nominate an expert below) *</p> <p>No</p> <p>(*) A Comment is required for this answer value. Justification statement as per National Body (NB) perspective (short) *</p> <p>(1) This question does not appear if the answer to question 1 is "Disapprove"</p> <p>(2) This questions only appears if the answer to question 1 is "Disapprove"</p>	<p>No</p> <p>6 3. Do you wish to add any additional comments? No</p> <p>7 4. We are committed to participating actively in the development of the project, at least by commenting on working drafts (P-members voting "Disapprove" in Qu. 1a may nevertheless nominate experts): Yes -- Jennifer Veitch</p> <p>(*) A Comment is required for this answer value. Justification statement as per National Body (NB) perspective (short) *</p> <p>(1) This question does not appear if the answer to question 1 is "Disapprove"</p> <p>(2) This questions only appears if the answer to question 1 is "Disapprove"</p>	
N707	Calculation of the impact of daylight utilization on the net and final energy demand for lighting	2021-07-13	2021-08-30	<p>No. Question Possible options</p> <p>1 Do you approve the circulation of the draft as a DIS? Approval</p> <p>Approval with comments*</p> <p>Disapproval*</p> <p>Abstention</p> <p>(*) A Comment is required for this position.</p>	Approval with comments	2021-08-30

Item #	Title	Circulated	SCC due date	Questions	Vote	Date ballot cast
N715	Liaison to ISO/TC286/SC 1 Smart community infrastructure	2021-07-20	2021-09-01	1 Do you want to nominate another candidate as liaison representative to ISO/TC 268/SC 1 Smart community infrastructures? Yes * No 2 Do you approve the appointment of Mr Xu Hao as liaison representative to ISO/TC 268/SC 1 Smart community infrastructures? Yes No * Abstain(*) A Comment is required for this answer value.	1 Do you want to nominate another candidate as liaison representative to ISO/TC 268/SC 1 Smart community infrastructures? No 2 Do you approve the appointment of Mr Xu Hao as liaison representative to ISO/TC 268/SC 1 Smart community infrastructures? Yes	2021-08-18
N721	ISO/CIE DTR 21783.2 (JTC 14)	2021-08-15	2021-09-30	. 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 with comments*	2021-09-29
N723	res 134 and 135 to appoint Peter Thorns as Convenor ISO/TC 274 and of the CAG	2021-08-24	2021-10-05	No. Questions Possible Answers 1 Do you agree to the appointment of Mr. Peter Thorns as new convenor of ISO/TC 274/CAG and to the draft resolution 134? Yes 2 Do you agree to the appointment of Mr. Peter Thorns as new convenor of ISO/TC 274/JAG and to the draft resolution 135? Yes	Yes Yes	2021-10-06



Standards Council of Canada Meeting Summary Report

1. Meeting information

Committee or meeting reference (e.g. ISO/TC 127/SC 2)	ISO/TC 274 Plenary
Meeting location (city and country)	Virtual Meeting
Meeting start date (YYYY-MM-DD)	2021-05-25
Meeting end date (YYYY-MM-DD)	2021-05-27
Report completed by	Toby Lau

2. Summary, outcomes, and action items

Summary and key outcomes <i>Describe the key activities and outcomes of the meeting. Include information such as items of importance to Canada/Canadian priorities, changes to Canadian national position, and instances where Canadian positions were not successful.</i>
At the virtual ISO/TC274 'Light and Lighting' Plenary session from May 25th to 28 th , 11 resolutions were approved. These are detailed in the document <ISO-TC274_N699_Resolutions_taken_at_9th_plenary_meeting_of_ISOTC_274_-_Approved_on_2021-05-27.pdf>, which is inserted into this PDF report. The resolutions that are relevant to Canadian priorities are #126 and #131..



Canadian action items <i>Provide all actions that must be completed by Canadians.</i>		
Item for action	Responsible for completion <i>(person and/or organization)</i>	Due date <i>(Date that the action must be completed by)</i>
<p><u>Resolution 126</u> <u>Next steps of ISO/CIE TR 3092</u></p> <p>ISO/TC 274 notes the result of ISO/TC 274/JWG 1 on the ISO/TR 3092 "Light and lighting –Energy performance of lighting in buildings –Explanation and justification of ISO/CIE 20086" and decides to submit the document for balloting as DTR within ISO/TC 274.</p> <p>This is a Canada led project by Toby Lau. It will be his responsibility to shepherd the work to completion after the receipt of comments on the DTR.</p>	Toby Lau	To be confirmed



<p>Resolution 131 <u>Cooperation with ISO/TC 205</u></p> <p>One of the action items in Resolution 131 is that the ISO/TC 274 asks its secretariat to send a request for advice and a decision from ISO/TMB to transfer ISO/TC 205/WG 7 into a new joint working group (JWG) between ISO/TC 205 and ISO/TC 274 in the case that a positive decision by ISO/TC 205 is absent by the end of November 2021.</p> <p>Mr. Conor Sampson of Canada was nominated by the TC274 as a Co-convenor of the proposed JWG representing ISO/TC274.</p>	Conor Sampson	On-going
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RESOLUTIONS (Approved)**9th Plenary meeting of ISO/TC 274**

Drafting committee: ISO/TC 274 secretariat, Nathalie Coursière, Peter Thorns

	English	Français
Resolution 122	<p><u>Future of a possible project "Life Cycle Costs"</u> ISO/TC 274 decides, noting the result of the second call for Project Leader and Experts for a possible future project "Life Cycle Cost" (ISO/TC 274 N 690) and ISA's willingness to provide a project leader, to invite ISA and Mr. Jiajie Fan to prepare an initial draft to be proposed to ISO/TC 274 CAG for further discussion.</p>	<p><u>Eventuel futur projet "Coût du cycle de vie"</u> Prenant note du résultat du deuxième appel à chef de projet et à experts pour un éventuel futur projet "Coût du cycle de vie" (ISO/TC 274 N 690) et de la volonté de l'ISA de fournir un chef de projet, l'ISO/TC 274 décide d'inviter l'ISA et M. Jiajie Fan à préparer un projet initial qui sera proposé au CAG de l'ISO/TC 274 pour une discussion plus approfondie.</p>
Resolution 123	<p><u>Future change of Chair of ISO/TC 274</u> ISO/TC 274 thanks Ad de Visser for his work as Chair in the past years noting his decision to not extend his term as Chair after 2021, and acknowledges the important and excellent work he has performed. Peter Thorns candidacy is appreciated noting that voting will be done by ISO/TMB.</p>	<p><u>Futur changement à la présidence de l'ISO/TC 274</u> L'ISO/TC 274 remercie Ad de Visser pour son travail en tant que président au cours des dernières années, notant sa décision de ne pas prolonger son mandat de président après 2021, et salue l'important et excellent travail qu'il a accompli. La candidature de Peter Thorns est bien accueillie sachant que le vote sera effectué par l'ISO/TMB.</p>
Resolution 124	<p><u>Future of workshops</u> ISO/TC 274 notes the recommendation of ISO/TC 274/CAG and decides to continue with workshops/webinars in even years and asks the CAG in cooperation with the JAG to proceed with further planning.</p>	<p><u>Avenir des ateliers</u> L'ISO/TC 274 prend note de la recommandation du CAG de l'ISO/TC 274, décide de poursuivre les ateliers/webinaires les années paires et demande au CAG, en coopération avec le JAG, d'en poursuivre la planification.</p>

	English	Français
Resolution 125	<u>Liaison representative to ISO/TC 268/SC 1</u> ISO/TC 274 decides to start a ballot to appoint Mr Xu Hao as liaison representative to ISO/TC 268/SC 1, noting his willingness, if no other nomination is received.	<u>Représentant de liaison auprès du SC1 de l'ISO/TC 268</u> L'ISO/TC 274 décide de lancer un vote pour nommer M. Xu Hao comme représentant de liaison auprès de l'ISO/TC 268/SC 1, considérant sa volonté, si aucune autre nomination n'est reçue.
Resolution 126	<u>Next steps of ISO/CIE TR 3092</u> ISO/TC 274 notes the result of ISO/TC 274/JWG 1 on the ISO/TR 3092 "Light and lighting – Energy performance of lighting in buildings – Explanation and justification of ISO/CIE 20086" and decides to submit the document for balloting as DTR within ISO/TC 274.	<u>Prochaines étapes de l'ISO/CIE TR 3092</u> L'ISO/TC 274 prend note du résultat du JWG 1 de l'ISO/TC 274 sur le " Lumière et éclairage — Performance énergétique de l'éclairage des bâtiments – Explication et justification de ISO/CIE 20086" de l'ISO/TR 3092 et décide de soumettre le document au vote en tant que DTR au sein de l'ISO/TC 274.
Resolution 127	<u>Future of ISO/CIE DTR 21783</u> ISO/TC 274 notes the necessary discussions on ISO/CIE DTR 21783 <i>Light and lighting - Integrative lighting - Non-visual effects</i> with ISO/TC 159/SC 4/WG 3 and its ISO/TR 9241-610, <i>Ergonomics of human-system interaction — Part 610: Impact of light and lighting on humans</i> resulting in foreseeable technical changes. ISO/TC 274 therefore asks the Secretariat to adjust the project plan accordingly and start a new parallel ballot with CIE once the updated document is available.	<u>Avenir de l'ISO/CIE DTR 21783</u> L'ISO/TC 274 prend note des discussions nécessaires sur l'ISO/CIE DTR 21783 <i>Lumière et éclairage - Éclairage intégratif - Effets non visuels</i> avec l'ISO/TC 159/SC 4/WG 3 et son ISO/TR 9241-610, <i>Ergonomie de l'interaction homme-système - Partie 610 : Impact de la lumière et de l'éclairage sur les humains</i> entraînant des changements techniques à prévoir. L'ISO/TC 274 demande donc au Secrétariat de revoir le plan du projet en conséquence et de lancer un nouveau vote parallèlement à celui de la CIE dès que le document mis à jour sera disponible.
Resolution 128	<u>Convenor of IWG 5 2022-2024</u> ISO/TC 274 decides to re-appoint Peter Dehoff as Convenor of IWG 5 for a period of 3 years starting 2022-01-01.	<u>Animateur du IWG 5 2022-2024</u> L'ISO/TC 274 décide de reconduire Peter Dehoff dans ses fonctions d'animateur du IWG 5 pour une période de 3 ans à compter du 2022-01-01.

	English	Français
Resolution 129	<u>Activation of revision of ISO/CIE 8995-1</u> ISO/TC 274 agrees to start the revision of ISO 8995-1 with the ISO 3-month new work ballot with the Form 4 and Outline provided by JWG 5 with the 36 months development track.	<u>Activation de la révision de l'ISO/CIE 8995-1</u> L'ISO/TC 274 accepte de commencer la révision de l'ISO 8995-1 par le vote ISO de 3 mois sur les nouveaux travaux avec le formulaire 4 et le résumé fournis par le JWG 5 et la procédure de développement de 36 mois.
Resolution 130	<u>Cooperation with ISO/TC 159/SC 4</u> ISO/TC 274 supports the initiative for a CIE Research Forum on augmented reality and lighting interference, in relation to ISO/TC 159/SC 4.	<u>Coopération avec le SC 4 de l'ISO/TC 159</u> L'ISO/TC 274 soutient l'initiative d'un forum de recherche de la CIE sur la réalité augmentée et les interférences lumineuses, en relation avec le SC 4 de l'ISO/TC 159.
Resolution 131	<u>Cooperation with ISO/TC 205</u> see below	<u>Coopération avec l'ISO/TC 205</u> voir ci-dessous
Resolution 132	<u>Cancellation of liaison with ISO/TC 163/SC 2</u> ISO/TC 274 agrees to end the liaison relationship to ISO/TC 163/SC 2. There is currently no overlap in the scope of both committees. If necessary, the liaison should be re-established.	<u>Annulation de la liaison avec le SC2 de l'ISO/TC 163</u> L'ISO/TC 274 accepte de mettre fin à la relation de liaison avec le SC2 de l'ISO/TC 163. Il n'y a actuellement aucun chevauchement dans le domaine d'activité des deux comités. Si nécessaire, la liaison sera rétablie.
Resolution 133	<u>Requirements concerning 10th meeting (2022)</u> ISO/TC 274 notes with appreciation the possibility of the British Standards Institution (BSI) to host the 10 th meeting of ISO/TC 274. It is preferred that the meeting will take place in UK (London) from 13 th to 17 th June 2022 in conjunction with (J)WG-meetings. A decision on the date and format (in person/virtual) will be taken by the end of 2021 once the meeting possibilities are clarified and an invitation is received.	<u>Information concernant la 10^{ème} réunion (2021)</u> L'ISO/TC 274 accepte avec plaisir l'invitation du British Standards Institution (BSI) d'accueillir la 10 ^{ème} réunion de l'ISO/TC 274. Les dates à privilégier pour la réunion au Royaume-Uni (Londres) sont du 13 au 17 juin 2022, en même temps que les réunions des (J)WGs. Une décision sur la date et le format (en personne/virtuel) sera prise d'ici la fin 2021, une fois que les possibilités de réunion auront été clarifiées et qu'une invitation aura été reçue.

Resolution 131**English**Cooperation with ISO/TC 205

ISO/TC 274 members support the efforts made by their chair and secretariat on the topic of "indoor visual environment", on which both ISO/TC 274 and ISO/TC 205 share the same interests.

ISO/TC 274 asks its secretariat to:

1. Inform the ISO/TC 205 secretariat, that the fact that ISO/TC 205 will not decide to establish a JWG in the field of *indoor visual environment* before September 2022 is disappointing. ISO/TC 274 considers this an unnecessary delay and a response not "in a timely manner";
2. Request the ISO/TC 205 secretariat to circulate the ISO/TC 274 documents, also known as **N 619** and **N 666**, unaltered to the members of ISO/TC 205 well in advance of their plenary meeting in September 2021;
3. Send a request for advice and a decision from ISO/TMB to transfer ISO/TC 205/WG 7 into a new joint working group between ISO/TC 205 and ISO/TC 274 in the case that a positive decision by ISO/TC 205 is absent by the end of November 2021;
4. To request ISO/CS not to register activation of the PWI 20734 until potential collaboration with ISO/TC 274 in a new JWG is clarified;

noting the following:

5. The discussions of the leadership of ISO/TC 274 with the leadership of ISO/TC 205 from the year 2014 until 2016 and since 2019, in particular concerning ISO/TC 205/WG 7, to improve collaboration between both committees, as expressed in the business plans of both committees.
6. That very little progress was made since November 2019 when the ISO/TMB secretariat was informed about this; reference document ISO/TC 274 **N 653**.
7. The different rights and obligations of liaison representatives and experts of a working group, leading to the request to form a JWG in the area of "indoor visual environment".
8. That ISO/TC 274 is the internal ISO mirror committee to the CIE, with which ISO has a PSDO agreement to avoid duplication of work, to achieve the best possible input to the work and to express a concerted view to third parties, resulting in coordinating/advising activities in the field of light and lighting.
9. That PWI 20734 "Daylighting design procedure for indoor visual environment" (registered since 2020-05-11 for max three years) is in the interest of ISO/TC 274, as were all previous projects of ISO/TC 205/WG 7
 - a. That an interior building environment is visible only by means of lighting and that therefore both ISO/TC 205 and ISO/TC 274 have an interest in the "indoor visual environment"
 - b. That a JWG is appropriate to create a win-win situation for both committees in serving the global community
 - c. A draft proposal document ISO/TC 274 **N 619** for transferring ISO/TC 205/WG 7 into a new JWG "Indoor visual environment – design processes and design methods" with ISO/TC 274, submitted to the ISO/TC 205 secretariat for comments in July 2020, with the request to reply by November 2020
 - d. A formal proposal ISO/TC 274 **N 666**, sent to the ISO/TC 205 secretariat in March 2021, for approval by ISO/TC 205 by May 10th 2021
 - e. That the ISO/TC 205 secretariat ISO/TC 205 replied with the intention not to circulate this proposal for approval by ISO/TC 205 before September 2022
 - f. That activation of the PWI before a decision on the JWG is considered inappropriate
10. The existence of ISO/TC 43/SC 2/WG 27, Joint ISO/TC 205 - ISO/TC 43/SC 2 WG "Indoor acoustic environment" demonstrates the practicality of this collaboration.

Français

Coopération avec l'ISO/TC 205

Les membres de l'ISO/TC 274 approuvent les efforts déployés par leur président et leur secrétariat sur le thème de "l'environnement visuel intérieur" pour lequel l'ISO/TC 274 et l'ISO/TC 205 partagent les mêmes intérêts.

L'ISO/TC 274 demande à son secrétariat de :

1. Informer le secrétariat de l'ISO/TC 205 que le fait que l'ISO/TC 205 ne décidera pas d'établir avant septembre 2022 un JWG dans le domaine de l'environnement visuel intérieur est décevant. L'ISO/TC 274 considère qu'il s'agit d'un retard inutile et une réponse qui n'est pas " en temps opportun " ;
2. Demander au secrétariat de l'ISO/TC 205 de diffuser, sans modification, les documents de l'ISO/TC 274, également connus sous les numéros N 619 et N 666, aux membres de l'ISO/TC 205 bien avant leur réunion plénière de septembre 2021 ;
3. Envoyer une demande de conseil et de décision à l'ISO/TMB pour transférer le WG 7 de l'ISO/TC 205 dans un nouveau groupe de travail conjoint entre l'ISO/TC 205 et l'ISO/TC 274 dans le cas où une décision positive de l'ISO/TC 205 n'est pas prise avant la fin de novembre 2021 ;
4. Demander à l'ISO/CS de ne pas enregistrer l'activation du PWI 20734 jusqu'à ce que l'éventuelle collaboration avec l'ISO/TC 274 dans un nouveau JWG soit clarifiée.

constatant ce qui suit :

5. Les discussions, de 2014 à 2016 et depuis 2019, entre les directions de l'ISO/TC 274 et de l'ISO/TC 205, concernant en particulier le WG 7 de l'ISO/TC 205, afin d'améliorer la collaboration entre les deux comités, comme exprimé dans les plans stratégiques d'activité des deux comités ;
6. Que très peu de progrès ont été réalisés depuis novembre 2019, date à laquelle le secrétariat de l'ISO/TMB en a été informé, document de référence ISO/TC 274 N 553 ;
7. Les différents droits et obligations des représentants de liaison et des experts d'un groupe de travail, ce qui a conduit à la demande de former un JWG dans le domaine de "l'environnement visuel intérieur" ;
8. L'ISO/TC 274 est le comité miroir interne de l'ISO auprès de la CIE, avec laquelle l'ISO a conclu un accord PSDO afin d'éviter la duplication des travaux, d'obtenir la meilleure contribution possible aux travaux et d'exprimer un point de vue concerté à des tiers, ce qui se traduit par des activités de coordination/conseil dans le domaine de la lumière et de l'éclairage ;
9. Que le PWI 20734 " Méthode de conception de l'éclairage naturel pour l'environnement visuel intérieur" (enregistré depuis le 11/05/2020 pour un maximum de trois ans) présente un intérêt pour l'ISO/TC 274, comme tous les projets précédents du WG 7 de l'ISO/TC 205 ;
 - a. L'environnement intérieur d'un bâtiment n'est visible qu'au moyen de l'éclairage et, par conséquent, l'ISO/TC 205 et l'ISO/TC 274 sont tous deux parties prenantes dans l'"environnement visuel intérieur" ;
 - b. Qu'un JWG est approprié pour créer une situation gagnant-gagnant pour les deux comités au service de la communauté mondiale ;
 - c. Une proposition de projet (ISO/TC 274 N 619) pour le transfert du WG 7 de l'ISO/TC 205 à un nouveau JWG "Environnement visuel intérieur - processus de conception et méthodes de conception" avec l'ISO/TC 274, soumise au secrétariat de l'ISO/TC 205 pour commentaires en juillet 2020, avec la demande de réponse pour novembre 2020 ;
 - d. Une proposition formelle (ISO/TC 274 N 666), envoyée au secrétariat de l'ISO/TC 205 en mars 2021, pour approbation par l'ISO/TC 205 avant le 10 mai 2021 ;
 - e. Que le secrétariat de l'ISO/TC 205 a répondu avec l'intention de ne pas faire circuler cette proposition pour approbation par l'ISO/TC 205 avant septembre 2022 ;
 - f. L'activation du PWI avant une décision sur le JWG est considérée comme inappropriée.
10. L'existence du WG 27 du SC2 de l'ISO/TC 43, Groupe de travail conjoint ISO/TC 205 - ISO/TC 43/SC 2 "Environnement acoustique intérieur", démontre le côté pratique de cette collaboration.



Standards Council of Canada Mirror Committee Activity Report

1. General information

Each SCC mirror committee is required to submit an activity report on an annual basis. This activity report is designed to provide SCC with information about the activity of the committee over the period of the preceding year. The report assists SCC in articulating and quantifying the value of participation in committee activity to Canada.

When completing this report, please keep the following items in mind to ensure that the report is accurately evaluated:

- Sources should be cited where they are available;
- Overly technical language should be avoided; and
- When referring to legislation or regulation, give the short title or regulation reference, and be sure to include the jurisdiction.

When evaluating this report, SCC will augment the information provided with additional information (i.e. section 7). A complete explanation of the evaluation criteria can be found in the International Standards Development Program Overview. The points allotted for each section are identified below.

Guidance has been provided in blue and is designed to provide suggestions or further information to assist the mirror committee in responding to the questions. You do not need to directly respond to all items in the guidance; they are there for your consideration and to help frame your response. Responses should be limited to no more than 300 words.

2. Process

1. This report should be completed by the SCC mirror committee chair or another designated person in consultation with the other members of the committee and is due January 15th of every year. Work on the report can be started prior to the end of the calendar year.
2. Complete this form and send it, along with any supporting documentation to the Standards Council of Canada (isd-eni@scc.ca).
3. Committees should be prepared to provide additional clarifying or supporting information if required.
4. SCC assesses and scores all activity reports and informs SCC mirror committees of their results. For SCC mirror committees requesting financial assistance, the SCC determines allocations based on scores and the SCC budget.
5. Mirror committees may receive upon request a breakdown of the scoring applied by SCC. If the mirror committee believes that there was an error in scoring, it may request a



re-assessment of the relevant section(s). The request must be made in writing to SCC, and the mirror committee must indicate the relevant section(s) and describe the nature of the error. Any appeals must be submitted 4 weeks after the results are sent.

3. SCC mirror committee

Committee reference (e.g. ISO/TC 127/SC 2)	ISO/TC 274
Participation status	Participating
Activity report year	2020

4. Value to Canada

Trade benefits (5 points)

Describe how the committee's work activities are addressing any trade related issues (interprovincially, regionally, and/or internationally), and how the work activities help align standards to reduce trade barriers and increase investment opportunities for Canadian industries.

Guidance for responding to trade benefits

The following points should be considered in the response:

- Are the standards developed by the committee used in interprovincial, regional, or international trade? How?
- What is the volume of trade of products or services associated with the standards developed by the committee?
- Are standards developed by the committee used in international supply chains? Where? How?
- Are there real or perceived technical barriers to trade impacted by the work activity of the committee? What? Where? How?

To answer this question you may use data collected by relevant industry associations or the Harmonized System (HS) codes for classifying imported and exported commodities and products. By identifying all the products your technical committee impacts, you can aggregate the value of imports and exports using the [Trade Data Online](#) database. We recognize the product categories in the HS classification system are broader than what the committee may deem relevant.

Where possible, include links, references, and cite examples to support the response. The information provided should be clearly presented and easy to verify.

Suggested Resource links

- [Canadian Legal Information Institute](#) – to determine use of standards in Canadian regulation
- [World Legal Information Institute](#) – to determine use of standards in regulation worldwide



- [Trade Data Online](#) – to determine the trade value of products associated with the technical committee. Please list the Harmonized System (HS) code and year of reference used to evaluate the trade value.

Among the standards developed by ISO/TC 274 are several that form the basis of requirements for light, lighting, and colour that apply to nearly every consumer product. For example, the Colorimetry series CIE/ISO 11664 provides the basis for colour measurement referenced within innumerable international standards for products and used without reference in product specifications for everything from cosmetics to signage. One specific example relevant to the Canadian economy is the use of these standards to establish the basis for judging the whiteness and fluorescence properties of paper. Meeting these standards is a requirement for entry to the international market for the pulp and paper industry. In 2019, the export value of pulp, paperboard, and articles made from these materials (HS 48) was \$9.7B; over the past five years (2013-2017) it totals ~\$48.7B.

Standards for photometric measurement (ISO/CIE 19476) (and for the equipment used for photometry, ISO/CIE 23539) are part of the system for establishing the performance of all products that use light, including optical and medical imaging products, which fall into HS 90. The export value of these products in 2019 was \$9.6B, a value that has risen steadily from \$6B in 2013. The export value of Spectrometers, Spectrophotometers and Spectrographs Using Optical Radiations (UV, Visible, IR) [HS 902730] in 2019 was \$123 M, a figure that has risen from \$65M in 2013.

These standards also apply to lighting products. The lighting industry requires extensive performance testing of new energy-efficient lighting products, particularly solid-state lighting, to ensure their entry into the marketplace both domestically and internationally. These performance criteria establish the performance equivalence of new products compared to those they are intended to replace. To estimate the export value of all lighting-related products from the Trade Data Online database, we summed HS 701110, 940510, 940540, 940550, 940591, 940592, and 940599, which include wall and table lamps and components thereof. In 2019 the export value from Canada was \$1.2B, a value that has more than doubled since 2013.

Advancement of the national economy (5 points)

Describe how the committee's work activities support Canada's economic health, market relevance, and employment. Where possible, provide relevant market data related to the committee's work activities and cite sources.

Guidance for responding to advancement of the national economy:

The following should be considered in the response:

- *How many Canadian companies within the sector are using or impacted by standards developed by the committee?*
- *Can the MC provide real examples of increased income, employment, or cost savings achieved through implementation of standards developed by the committee?*
- *What is the total number of national adoptions of the committee's International Standards?*



Where possible, include links, references, and cite examples to support the response. The information provided should be clearly presented and easy to verify.

Suggested Resource links:

- [*North American Industry Classification System*](#) – to find the industry associated with the mirror committee's work.
- [*Statistics Canada, "Gross domestic product \(GDP\) at basic prices, by industry \(x 1,000,000\)" Table: 36-10-0401-01 \(formerly CANSIM 379-0029\)*](#) – to find out the GDP associated with the industry relevant to the TC – Please clearly identify the NAICS code you associate with the relevant industry.
- [*Statistics Canada, "Labour force characteristics by industry, annual \(x 1,000\)" Table: 14-10-0023-01 \(formerly CANSIM 282-0008\)*](#) – to find out employment associated with the industry relevant to the TC – Please clearly identify the NAICS code you associate with the relevant industry.
- [*SCC website standards search*](#) – To determine the number of national adoptions

New technologies for lighting and its control have led to an abundance of new lighting manufacturers in Canada, most of which find that their greatest success comes in accessing international markets (e.g., Axis Lighting of Montreal reports that 90% of its revenues come from outside Canada). Participation in ISO/TC 274 ensures that they have a role in developing standards to which they will need to conform in the markets they wish to reach. Electric Lighting Equipment Manufacturing (NAICS code 3351) has doubled its export value over the past five years, from \$552M to \$1.1B. This category currently includes 395 companies, over 90% of which have fewer than 100 employees, but deliver \$306M in salaries and wages to their employees (2016 data).

Lighting standards also influence other industries of national importance: For example, ISO(TC274)/CIE colorimetry standards (ISO 11664/CIE S014, parts 1 and 2) are key to ISO TC6 optical standards (e.g. whiteness, brightness, colour) for the pulp and paper industry. With Canadian pulp and paper being increasingly sold world-wide, compliance to these ISO standards is critical for market access and growth. In 2017, paper manufacturing exports from Canada totalled \$17.9B (NAICS code 322). Industry Canada tracks 782 companies in this subsector, which in 2016 provided a total of \$3.4B in salaries and wages to their employees.

The work of ISO/TC 274 also underpins success in a wide variety of Canadian industries, providing the basis for product conformity assessment using measurements of colour, surface appearance, optical performance; see also below.



Assisting consumers (5 points)

Describe how the committee's work activities address consumer issues, and ensure that products are fit for purpose; and in the case of services, ensure legal certainty.

Guidance on assisting consumers:

The following should be considered in the response:

- How do standards developed by the committee ensure that its products or services meet the expectations and needs of consumers, or address consumer issues?
- How do consumers benefit from standards developed by the committee?

Where possible, include links, references, and cite examples to support the response. The information provided should be clearly presented and easy to verify.

Suggested Resource links:

- Office of Consumer affairs (OCA), ISED- [Consumer Policy Research Database](#) – to identify policy positions and implications on various consumer interests
- [Consumer Council of Canada](#) – to identify pertinent consumer issues and links to resources.
- [Transport Canada](#) – to access government reports in the areas of transportation
- Statistics Canada – to access data on [health](#) and the [environment](#).

The photometric measurement standards developed by ISO/TC 274 together with the CIE are the basis for performance standards for lighting products. Manufacturers must produce reports for their new products and must label their products with certain values: for example, the total luminous flux (lumen output) of lamps. These requirements permit consumers to determine how new energy-efficient products (e.g., LED replacement lamps) will perform compared to those they replace (e.g., Will the replacement lamp deliver as much light as the incandescent lamp that was phased out as a result of energy efficiency regulations).

The measurements are used to determine product eligibility for energy ratings (e.g., ENERGY STAR) and utility incentive programs designed to speed market acceptance and reduce electricity use. These programs help to improve the affordability of new lighting technologies.

Another use of the standards developed by ISO/TC 274 together with the CIE is to ensure the visual appearance (colour, gloss, translucency, surface texture) quality of products, many of which are tested using light-based assessments. Colorimetry is important for colour management, formulation and quality control in a wide range of industries (automotive, printing, plastics, apparel, furniture, paints/inks, paper, carpet, appliances, etc.). For example, it is the basis by which fabric lots are assessed so that the bolts of cloth used in the garment industry produce clothing of a uniform colour. The spatial distribution of light having specific spectral properties is the basis for checking the gloss, texture, and smoothness of automotive paint as a final step in automobile production. Colour is also the basis upon which the purity of gold is assessed. In the USA, the losses in shipments in these colour-intensive industries due to unacceptable appearance is estimated to be \$700B (Annual Survey of Manufacturers, US Census Bureau, 2001).



Benefiting the health, safety, and welfare of workers and the public (5 points)

Describe how the committee's work activities address, protect or benefit the health, safety, and welfare of workers and the public.

Guidance on Benefiting the health, safety, and welfare of workers and the public:

The following should be considered in the response:

- How do standards developed by the committee address safety equipment and personal protective equipment?
- How do standards developed by the committee mitigate hazards, control safety risks, or decrease/prevent damage and injury due to misuse to workers and the public?
- How is safety of workers or the public improved by use of the standards developed by the committee?
- Do the standards address dangerous emissions such as noise, ionizing radiation, electromagnetic radiation, chemicals, etc.?
- Use and compatibility of standards developed by the committee with occupational health and safety systems (both voluntary and mandatory).

Where possible, include links, references, and cite examples to support the response. The information provided should be clearly presented and easy to verify.

Suggested Resource links:

- [Government of Canada Labour Program – information about government policies, reports, and regulations related to the labour market](#)
- [Transport Canada – to access government reports in the areas of transportation](#)
- [Parachute Canada – to find information and research about injury prevention in Canada](#)
- [The Association of Workers' Compensation Boards of Canada \(AWCBC\) – to find data and reports about injuries and fatalities in the workplace that are covered by the workers compensation boards](#)
- [Statistics Canada – to access data on health, injuries at work, and the environment.](#)
[Canadian Institute for Health Information – to access data on health related areas \(e.g. mental health and addictions, hospital care, quality and safety, health workforce\).](#)



Standards written by ISO/TC 274 establish the specifications used by industry for everyday lighting products, including for traffic lights and signal lights (ISO 16508) (thereby ensuring safety on roads), and the measurement of the colour properties of emergency signage (ISO 11664 series referenced in ISO 3864-1, among others). ISO 28077 - Photocarcinogenesis action spectrum (non-melanoma skin cancers) and ISO 17166:1999- Erythema reference action spectrum and standard erythema dose underlie the calculation of the UV index, information that is routinely provided to assist people in determining their risks associated with sun exposure. These also underpin the Radiation Emitting Devices Regulations (C.R.C. c. 1370) for tanning equipment and mercury vapour lamps. These regulations are important tools in the prevention of skin cancers, particularly melanoma. Although the rate of melanoma and other skin cancers remain the most common cancers to affect Canadians, the rate of increase has stabilized lately at approximately 83,000 new case per year. The stabilization is likely related to multiple factors and providing Canadians with accurate information about their UV exposure was likely one.

ISO 8995-1 – Lighting of indoor workplaces, currently under revision in ISO/TC 274/JWG 5 (and to which Canada is contributing), establishes recommendations for safe and effective work environments; ISO 8995-3 applies to exterior workplaces. These are voluntary standards but may be mandatory in some jurisdictions in which Canadian companies operate. The recommendations also provide source material for lighting energy calculations (ISO 20086), which require assumptions about the light levels to be provided to ensure that energy savings do not occur at the expense of functionality. ISO/CIE AWI TR 3092 *Light and lighting – Energy performance of lighting in buildings – Explanation and justification of ISO/CIE 20086* will facilitate the uptake of ISO/CIE 20086, making it more widely useful to its stakeholder community. Mr. Toby Lau, a member of MC-ISO-TC274, is the leader of this project.



Supporting sustainable development (5 points)

Describe how the committee's work activities address sustainable development, manage product life-cycles, reduce waste, or increase efficiency.

Guidance on sustainable development:

The following should be considered in the response:

- How do standards developed by the committee reduce waste and consumption of resources, and encourage re-use/refurbishment?
- How do standards developed by the committee address corporate social responsibility (social, economic, and environmental benefits for all stakeholders)?
- How do standards developed by the committee prevent or address environmental contamination?
- How has climate change been considered in standards developed by the committee?
- How are standards developed by the committee addressing consumption of energy and greenhouse gas emissions by encouraging efficiency, or through measurement/quantification?

Where possible, include links, references, and cite examples to support the response. The information provided should be clearly presented and easy to verify.

Suggested Resource links:

- Environment and Climate Change Canada ([ECCC](#)) – to identify latest reports and trends.
- Statistics Canada – to access data on the [environment](#)
- World Bank Development Indicators ([Canada](#)) – to access data on the environment and potentially link to global trends.
- [Open SDG Data Hub](#), UN sustainable Development Goals – to access data on the environment and identify potential links to global trends.



The first activity undertaken by ISO/TC 274 was the writing of a standard for the calculation of the energy performance of lighting in buildings (ISO 20086), which underpins energy regulations aimed at reducing energy consumption and associated greenhouse gas emissions and preparing for the future of net-zero-energy or net-zero-carbon buildings. Its second activity was creating a working group to address the commissioning of lighting systems, which is a critical element in ensuring that predicted energy savings are achieved. ISO/TC 274/JWG 3 addresses the maintenance of lighting systems, also a critical part of achieving energy-efficient performance.

Canada could consider the ISO 20086 standard for potential adoption in the Lighting Part of the National Energy Code of Canada for Buildings (NECCB) as an alternate trade-off path for code compliance demonstration in a future edition of the NECCB, perhaps in 2025. Ties between MC-ISO-TC 274 and the NECCB are strong and expected to facilitate this adoption.

ISO/TC 274 recently acquired responsibility for maintaining ISO 10916 – Calculation of the impact of daylight utilization on the net and final energy demand for lighting. Proper use of daylighting is one means to achieve reductions in lighting energy use while maintaining a high-quality indoor environment.

ISO/TC 274 also maintains liaison status with other ISO committees with a shared interest in lighting and building energy-efficiency, particularly ISO/TC 205/WG7 and ISO/TC 163. A Canadian, Conor Sampson, served as the liaison representative from ISO/TC 274 to ISO/TC 205/WG7 – Indoor Visual Environment until May 2020. This working group is responsible for standards involving lighting and daylighting related to building environmental design, which is an important element in achieving sustainable spaces for people to inhabit. Mr. Toby Lau serves as a second liaison representative from ISO/TC 274 to ISO/TC 205, Building environment design and has been appointed in 2020 as the liaison representative to ISO/TC205/WG 10, Commissioning. .



Support to government (5 points)

Describe how the committee's work activities would support public policy (i.e. international agreements such as COP 21 Paris, etc.), regulatory compliance, or addressing government department objectives.

Guidance on support to government:

The following should be considered in the response:

- How do standards developed by the committee align to the objectives of federal, provincial, or territorial departments?
- Do any international agreements (e.g. Montreal Convention on civil aviation) benefit from standards developed by the mirror committee?
- What government initiatives, actions, and objectives (in fields such as social, economic, trade, public safety, agriculture, health, etc.) are impacted by the work of the committee?
- Do standards developed by the committee aid regulatory compliance/alignment?
- Are standards developed by the mirror committee, that are not referenced in regulation, used by government (Federal, provincial/territorial, municipal)?

Where possible, include links, references, and cite examples to support the response. The information provided should be clearly presented and easy to verify.

Suggested Resource links:

- [2018 Budget](#), Government of Canada – to identify government initiatives.
- Innovation, Science and Economic Development Canada ([ISED](#)) – to identify government initiatives, recent reports, policy positions and trends.
- Global Affairs Canada ([GAC](#)) – to identify government initiatives, recent reports, policy positions and trends.
- Health Canada ([HC](#)) – to identify government initiatives, recent reports, policy positions and trends.
- Environment and Climate Change Canada ([ECCC](#)) – to identify government initiatives, recent reports, policy positions and trends.
- Public Service and Procurement Canada ([PSPC](#)) – to identify government initiatives, recent reports, policy positions and trends.



ISO/TC 274/JWG 1 (Energy performance) and /WG 2 (Commissioning) both address topics relevant to the achievement of Canada's COP 21 commitments to reduce greenhouse gas emissions through the reduction of building energy use, and our involvement in these groups contributes to the harmonization of ISO standards with the National Energy Code of Canada for Buildings and related CSA standards (C22.2).

Standards developed by both ISO/TC 274/JWG1 and WG2 could be used to support the development of more stringent lighting energy consumption targets in future energy step codes for new NECCB Part 3 and Part 9 (non-residential) buildings as well as a new commissioning standard as mandatory requirements in energy code to enhance code compliance levels respectively.

ISO 23539 – The CIE system of physical photometry supplements the SI definition of the candela to guide the national metrology institutes (NMIs), such as Canada's NMI, the NRC Metrology Research Centre, on how the candela and related units in photometry and radiometry can be practically realized.



Standards in Canadian legislation or regulation (5 points)

Guidance on standards in Canadian legislation or regulation

The table below has been completed with a number of examples on how standards in Canadian legislation, regulation or codes should be referenced in the activity report. Information should be provided so that the reference can be easily verified. You may provide a hyperlink to the reference (see example below).

A maximum of one point per standard will be awarded. References to a standard in multiple jurisdictions may be used as evidence of interprovincial alignment under section 4 – Value to Canada, trade benefits.

Include adoptions of international standards only if the adoption is referenced in legislation, regulation or codes.

Resource links:

- Canadian legislation and regulation can be found in [CanLII](#)

Examples:

International Standard <i>(State the number)</i>	Legislation, regulation or regulatory document <i>(State the title and reference and provide a link, if available)</i>	Jurisdiction <i>(State the national, provincial, or territorial authority and the responsible government body)</i>
ISO 14000	NB Reg 2006-3, Pipeline Filing Regulation	New Brunswick
ISO 14000	NS Reg 66/98, Pipeline Regulations	Nova Scotia
IEC 60533	SOR/2005-134, Navigation Safety Regulations	Federal
IEC 60034-1	B.C. Reg. 14/2015, Energy Efficiency Standards Regulation	British Columbia
ISO 5356-1:2015	Health Canada List of Recognized Standards for Medical Devices	Federal
CAN/CSA-C22.2 No. 60079-0-15 (IEC 60079-0)	Canadian Electrical Code, Part 1	Federal



International Standard (State the number)	Legislation, regulation or regulatory document (State the title and reference and provide a link, if available)	Jurisdiction (State the national, provincial, or territorial authority and the responsible government body)
ISO 11664 series	CAN/CGSB 98.1, 98.2 and 98.3 (National Flag of Canada: outdoor use, indoor use and one-event-only-use, resp.) http://publications.gc.ca/collections/collection_2018/ongc-cgsb/P29-098-001-2018-eng.pdf http://publications.gc.ca/collections/collection_2018/ongc-cgsb/P29-098-002-2018-eng.pdf http://publications.gc.ca/collections/collection_2018/ongc-cgsb/P29-098-003-2018-eng.pdf	Federal
ISO 11664 series	Ref in ISO 3864-1 and ISO 7010, which are ref'd in National Building Code (NBC) and others	Federal + provinces adopting the NBC
ISO 19476	CSA C22.2 No 141-10, ref'd in NBC & Nat'l Fire Code	Federal + provinces adopting the NBC, NFC
ISO 17166:1999	Radiation Emitting Devices Regulations, CRC, c 1370	Federal
ISO 23539	Used without reference in lighting certification programs (e.g., Energy Star)	Federal + provincial utilities
CIE 13.3, CIE 15 ()	Energy Efficiency Regulations, SOR/94-651	Federal
ISO 23539 and 11664 series	Used without reference in National Master Specification, s. 265000	Federal
	Radiation Emitting Devices Regulations (C.R.C., c. 1370)	Federal



5. Innovation

Responsive to Canadian innovation (5 points)

Describe how the committee's work contributes to or is impacted by evolving and emerging technologies, and commercial advancements.

Guidance on Canadian innovation

For the purpose of this document, innovation is defined as:

- An invention, new technology or new process that is not currently available in the marketplace.
- Significant modifications to existing technologies/process that are applied in a new setting or condition.
- Improvements to an existing technology/process that represent a significant improvement in functionality, cost or performance that are considered state-of-the art or the current industry best practice.

The following should be considered in the response

- How will future standards developed by the committee address market needs and standardization gaps?
- Do standards developed by the committee accelerate adoption or commercialization of innovative products, platforms, processes and/or services?
- Do work activities of the committee have the potential for producing sustained economic benefit to Canada?

Where possible, include links, references, and cite examples to support the response. The information provided should be clearly presented and easy to verify.

Suggested Resources:

Use the following charts to identify the market challenges, barriers, and resolutions to assist the MC in responding to the question on how the committee is responsive to innovation.



As a result of the committee's work, which market challenges were resolved in the past year?

	Not applicable	Resolved through standards	In Progress	Not resolved	Resolved through other means	Unsure
Cannot commercialize	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cannot certify product /service to access market	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accessing international markets	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of harmonization of requirements internationally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of harmonization of requirements between U.S. and Canada	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of harmonization of requirements in Canada	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Performance differentiation	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Systems interoperability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Resolution of health and safety issues	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Resolution of environmental issues	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (e.g. regulatory, product/personnel certification, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What are the market challenges and barriers the committee is planning to address through standardization in the upcoming year?

	Not applicable	Minor challenge or barriers	Significant challenge or barriers	Major challenge or barriers
Cannot commercialize	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cannot certify product /service to access market	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accessing international markets	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of harmonization of requirements internationally	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of harmonization of requirements between U.S. and Canada	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of harmonization of requirements in Canada	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Performance differentiation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Systems interoperability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Resolution of health and safety issues	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Resolution of environmental issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (e.g. regulatory, product/personnel certification, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



The solid-state lighting revolution, particularly LEDs, is replacing established technologies (incandescent and fluorescent systems) with new products and systems that promise to reduce lighting energy use everywhere that electric lighting occurs dramatically. ISO/TC 274 supports this transition by ensuring product quality and addressing application issues to ensure that the new products provide visual conditions at least as good, and possibly better than those they replace. The addition of new control systems will further reduce lighting energy use, but only to the extent that they are correctly installed and commissioned.

Furthermore, these lighting systems might serve as platforms for other services, such as data transmission by Visible Light Communication (LiFi). This exciting possibility uses the very high-speed modulation of LEDs to transmit data securely within a room; however, questions remain regarding how to integrate this technology with the original purpose of the room lighting installation, and potential health and safety effects.

ISO/TC 274 has identified the following important social, health and environmental dimensions, which echo the concerns of the Canadian lighting community, from consumers, through designers, manufacturers, and regulators:

- adaptive lighting (smart lighting),
- ageing population,
- energy performance,
- integrative lighting.

Under these general areas, the following have been identified by ISO/TC 274 as the highest priority topics and are under action now:

- Maintenance Factor (JWG3): Updated methodologies for calculating maintenance factor that are appropriate for new lighting technologies should lead to reduced maintenance requirements, speeding market transformation by further reducing system costs.
- Integrative lighting (JWG4): The introduction of tunable light sources makes it theoretically possible to design light sources that deliver variable spectrum and light intensity. This capability is thought to confer benefits to health and well-being, which is an incentive for manufacturers to adopt the new technology. However, the science in this area is recent and incomplete. Standardization is important to ensure that the products and applications are safe and provide the benefits claimed.



Horizontal issues (10 points)

Describe how the committee's work is impacted by and deals with the horizontal issues listed below.

Guidance on horizontal issues

The following should be considered in the response

- How the committee's work is impacted by horizontal issues;
- What work the committee is doing to address horizontal issues (e.g. addressing energy efficiency in product standards);
- Does the committee's work impact other technical committees through horizontal issues?

Where possible, include links, references, and cite examples to support the response. The information provided should be clearly presented and easy to verify.

Resource links

- [NRCan Energy Efficiency](#)– to identify government priorities, recent reports, policy positions and trends.
- [Environment and Climate Change Canada \(ECCC\)](#) – to identify government priorities, recent reports, policy positions and trends.
- [Canadian Centre for Occupational Health and Safety](#)– to identify government priorities, recent reports, policy positions and trends.
- [Public Safety Canada](#)– to identify government priorities, recent reports, policy positions and trends.
- [Office of the Privacy Commissioner of Canada](#)– to identify government priorities, recent reports, policy positions and trends.

Issue (Check if applicable)	Description (Give a brief description of how the issue is applicable)
Energy efficiency <input checked="" type="checkbox"/>	As discussed above, work in this committee is directly relevant to the NECCB. The Canadian expert on ISO/TC 274/JWG1 and /WG2/ is a leader in both the NECCB Working Group and Task Group on Lighting and Electrical Power, contributing to harmonization and consistency. The Canadian National Committee of the CIE (CNC/CIE) maintains networks with relevant departments, including the NRCan Office of Energy Efficiency.



Environmental aspects	<input checked="" type="checkbox"/>	Improved energy performance of lighting contributes to greenhouse gas reduction, and the change away from fluorescent lighting also reduces the risk of mercury pollution from discarded lamps. Standards that speed market transformation and support SSL adoption benefit these national goals. Although exterior applications are not currently a focus of ISO/TC 274, environmental, ecological, and health effects of light exposure at night (the latter being part of integrative lighting recommendations) are likely to lead to new work concerning standards for limiting obtrusive light for urban areas.
Safety	<input checked="" type="checkbox"/>	ISO/TC 314 Ageing Society is a new TC to which ISO/TC 274 seeks to send a liaison. Canada organized a workshop for the ISO/TC 274 plenary meeting in Toronto in June 2018 concerning lighting for an ageing society, which was well received and which led to our making acquaintance of relevant Canadian experts, whose contributions we will seek as this work carries on.
Security	<input type="checkbox"/>	Click here to enter text.
Privacy	<input type="checkbox"/>	Click here to enter text.



Canadian new work item proposals (10 points)

List new work item proposals initiated, authored and submitted by Canada or co-authored by Canada and another country in the past calendar year.

Guidance on Canadian new work item proposals:

The table below has been completed with a number of examples on how Canadian new work item proposals should be referenced in the activity report. Information should be provided so that the reference can be easily verified.

The proposal must be authored by Canada, or co-authored by Canada and another national body, and submitted by Canada through the SCC in the past calendar year (January to December). The information must be verifiable by SCC using the Form NP (IEC) or Form 4 (ISO).

A maximum of five points per new work item proposal will be awarded to a maximum of ten points. New work item proposals that have progressed beyond stage 40 of the [International Harmonized Stage Codes](#) will not be considered.

Do not include proposals that have not been submitted to the international committee through SCC.

Resource links:

- [International Harmonized Stage Codes](#)

Examples:

Canadian new work item proposals (5 points)

List new work item proposals initiated, authored and submitted by Canada or co-authored by Canada and another country in the past calendar year.

International Standard (State the number)	Development stage (stage development code)	Leadership positions (state if Canada is leading the NWIP, and in what capacity)
IEC 79922-1	00 - Preliminary	Project leader
ISO 61825	20 - Preparatory	Convenor
IEC 79562	30 - Committee	None

International Standard (State the number)	Development stage (stage development code)	Leadership positions (state if Canada is leading the NWIP, and in what capacity)
ISO/CIE AWI TR 3092	10 - Proposal	Project leader
Click here to enter text.	Choose an item.	Click here to enter text.
Click here to enter text.	Choose an item.	Click here to enter text.
Click here to enter text.	Choose an item.	Click here to enter text.
Click here to enter text.	Choose an item.	Click here to enter text.



The proposal for AWI TR 3092 was submitted in person by the HoD at the plenary meeting in Stockholm and decided there (resolution 92 in document N524).

6. International leadership

Canadian international leaders (15 points)

List international leadership positions held by SCC mirror committee members. Leadership positions are: International Chair, International Secretary, International Working Group Convenor, and Project Leader. For committee members holding multiple leadership positions, list each position separately.

Guidance on Canadian international leaders:

The table below has been completed with a number of examples on how Canadian international leaders should be referenced in the activity report. Information should be provided so that the reference can be easily verified by SCC.

Canadian international leaders must be nominated/approved by SCC and must be recorded in Global Directory (ISO) or the Expert Management System (IEC).

When completing the activity report, only list Canadian international leaders directly associated with the committee completing the activity report. For example, for technical committees, do not include Canadian international leaders associated with any subcommittees and vice-versa.

Mirror committee positions such as mirror committee chairs, mirror committee vice-chairs, working group experts, or heads of delegation are not considered to be international leadership positions.

Examples:

Name (State the name of the committee member)	Committee reference (Specify the ISO or IEC committee or working group designation)	Leadership position
Johnathan Doe	ISO/TC 22	International Chair
Bethany Doe	ISO/TC 22	International Secretary
Johnathan Doe	IEC/TC 57/WG 17	International Convenor
Pierre Doe	IEC/TC 57/MT 4	Project Leader/Project Editor
Jane Doe	ISO/TC 22/WG 23	Working Group Secretary
Name (State the name of the committee member)	Committee reference (Specify the ISO or IEC committee or working group designation)	Leadership position



Toby Lau	ISO/TC 274/CAG	Chair Advisory Group member
Sharon McFadden	ISO/TC 274/CAG	Chair Advisory Group member
Toby Lau	ISO/TC 163	Liaison Representative to ISO/TC 274
Conor Sampson	ISO/TC 205/WG7	ISO/TC 274 Liaison Representative to ISO/TC 205/WG7 until May 2020
Toby Lau	ISO/TC 205	2 nd Liaison Representative from ISO/TC 274 to ISO/TC 205
Toby Lau	ISO/TC 274/JWG 1	Project leader for ISO/CIE AWI TR 3092
Toby Lau	ISO/TC 205/WG10	Liaison Representative from ISO/TC 274 to ISO/TC 205/WG10

7. Committee performance

SCC will evaluate the following parameters using internal data.

- Participation by subject matter experts;
- Number of mirror committee members;
- Mirror committee balance;
- Meeting attendance; and
- Voting records.

8. Financial support

Guidance on financial support:

For mirror committees seeking financial assistance, this section must be completed. No points are awarded in the activity report for this section.

Requests for financial assistance will be considered by SCC following the evaluation of the activity report. SCC allocates financial assistance to mirror committees based on the score received in the activity report, starting with the highest scoring committees. A mirror committee's request for financial assistance does not guarantee SCC financial assistance.

Any external financial contributions provided must be accompanied by a completed external contribution commitment form (Form B). A form must be provided for each organization providing external contributions.



SCC will not consider external contributions, where the total of all external contributions is less than \$1000, however organizations may provide less than \$1000 as long as the total of all external contributions for the mirror committee equals \$1000 or more.

If the mirror committee's application for financial assistance is approved, and the mirror committee has external contributions, the contributing organizations will be invoiced by SCC for the designated amounts.

Resource links:

- [Form B – External Contribution Commitment](#)

Financial support (0 points)

Is the SCC mirror committee requesting financial assistance?

Yes

External contribution (0 points)

Is the SCC mirror committee providing external financial contributions that will be invoiced and administered by SCC?

Yes

External contribution amount (0 points)

State the amount of external financial contributions that will be invoiced and administered by SCC (minimum \$1000 required). Attach one external contribution commitment form for each organization providing external contributions and submit with the MC activity report.

BC Hydro: \$3000
CSA Group: \$1000

2021-04-20

Mirror committee members

ISO/TC274

To the members of the mirror committee,

Thank you for submitting your mirror committee activity report in accordance with the SCC Requirements and Guidance – Participation in International Standardization. This report assists us in assessing and supporting international standardization activities that align with Canadian national initiatives such as supporting innovation, international trade and protecting the health, safety, and welfare of workers and the public.

SCC has completed the assessments of activity reports and assigned scores to each mirror committee based on the information provided. An explanation of the scoring criteria can be found in the SCC International Standards Development Program Overview.

The mirror committee to ISO/TC274 received a score of 74.25 out of a possible 105 points. This score places you at 65 out of 241 applications for financial assistance. Should you have any questions related to your score, I invite you to contact your Project Manager.

However, due to the ongoing uncertainty about the resumption of international travel, SCC has decided to postpone the allocation of financial assistance and the issuance of invoices for external contributions until such time that face to face meetings and its associated travel is approved by SCC, ISO and IEC. Once a decision has been made to resume travel, SCC will assess the need for financial assistance based on a number of factors including but not limited to: time remaining within the fiscal year, the scheduled ISO or IEC international meetings and whether they are going to be held virtually or in-person; travel restrictions for Canada and elsewhere; and SCC insurance coverage for delegates.

The health and safety of our members remains a high priority. We understand these are unusual circumstances and thank you for your patience and cooperation.

Sincerely,



Bruce Farquhar
Director, Global Standards

2021-04-20

Aux membres du comité parallèle
ISO/TC274

Bonjour,

Merci d'avoir soumis le rapport sur les activités du comité conformément aux Exigences et lignes directrices – Participation à la normalisation internationale du CCN. Ce rapport permet au CCN d'évaluer et de soutenir les activités de normalisation internationale qui répondent aux priorités du Canada (dynamiser l'innovation et le commerce international, favoriser la santé, la sûreté et le bien-être des travailleurs et du public).

Le CCN a évalué les rapports et attribué une note à chaque comité parallèle d'après les informations soumises. L'on trouvera le barème de notation dans le document Élaboration des normes internationales – Aperçu du programme du CCN.

Le comité parallèle ISO/TC274 a obtenu 74.25 points sur un maximum de 105. Cette note se traduit par un classement au 65^e rang parmi les 241 demandes de financement. Pour toute question sur votre note, s'adresser au chargé de projet.

Cependant, vu les incertitudes autour de la reprise des déplacements internationaux, l'allocation du financement et la transmission de factures pour les contributions externes seront suspendues jusqu'à ce que les réunions présentiels soient de nouveau approuvées par le CCN, l'ISO et l'IEC. Dès la reprise des déplacements, le CCN évaluera les demandes de financement. Plusieurs facteurs seront soupesés, dont le délai avant la fin de l'exercice, le calendrier et les formules des réunions de l'ISO ou de l'IEC, la restriction des déplacements au Canada ou ailleurs ainsi que l'assurance des délégués payée par le CCN.

La santé des membres demeure notre grande priorité. Nous sommes conscients de l'aspect inédit des circonstances actuelles et vous remercions de votre patience et de votre collaboration.

Cordialement,



Bruce Farquhar
Directeur, Normes nationales et internationales

CNC/CIE 66th AGM -- reports for minutes related to item 9.2

Agenda item 9.2.1 – Toby Lau

ISO/TC 274 Chair Advisory Group (CAG):

Since last spring, the CAG met 3 times in June, September and with the 3rd meeting on Nov 16th, 2021. The CAG continues to work on updating the ISO/TC274 Strategic Business Plan (SBP).

At the request of Ad de Visser, chair of the ISO/TC274, Jennifer Veitch and I provided input to the SBP update on the subject of 'Climate change as regulatory driver' by citing recent lighting energy efficiency regulations implemented by Canada and the various provinces as examples for North America. The input was accepted by Ad de Visser.

Agenda item 9.2.2 – Toby Lau

ISO/TC274 JWG1 (Energy Requirements for Lighting in Buildings)

The Canadian led project in the development of a user's guide - Technical Report (TR) 3092 'Light and lighting – Energy performance of lighting in buildings – Explanation and justification of ISO/CIE 20086' has reached a key milestone that a draft of the TR is ready for voting subject to final vetting by CIE. It is anticipated that the TR will be submitted to the ISO/TC 274 and CIE for ballot in the next 2 months or so.

Agenda item 9.2.3 – Toby Lau

ISO/TC274 WG2 (Commissioning)

The ISO/TS 21274 'Lighting and lighting – Commissioning of lighting systems in buildings' was published in 2020. A working draft of the technical report ISO AWI TR 5911 'Light and lighting – Commissioning of lighting systems in building– Explanation and justification of ISO TS 21274' was developed and is currently being worked on to be finalized by the WG2.

Agenda item 9.2.6.1 ISO/TC 163 to ISO/TC 274 –Toby Lau

Liaison Representatives Report: ISO/TC163 to ISO/TC274

A liaison report was submitted to ISO/TC163 at their Plenary session on September 24, 2021. The Liaison report is available on request.

Agenda item 9.2.6.2 ISO/TC 163 to ISO/TC 205/WG7 –Conor Sampson

The last WG7 meeting was held virtually on September 7th, 2021

Current projects are:

- ISO 20734 "Building Environment Design -- Daylighting design procedure for indoor visual environment". The project is at NP stage; a draft outline was produced for review and discussion. An October 3rd, 2022 date is targeted for activation of a PWI. The purpose of the document is to provide the design team members (architects and engineers), as well as building owners, tenants, contractors, government officials, and academic staff, with design principles that lead to high end users' satisfaction, required visual comfort, health and wellbeing. In addition, there is a pronounced interest in including quality view evaluation criteria and providing a comparative overview of daylight metrics.

Varia

- Presentation was made by IESNA (Brien Liebel) of IESNA online reference library (integrated standards library, available by subscription). This includes and supplants the IES Handbook and various RPs (Recommended Practices).
- Significant attendance at this working group (21 people), with representation from IESNA / ANSI (USA)
- Discussion of whether to form JWG with ISO TC274; issue was elevated to plenary level and subsequently balloted and elevated to the ISO Technical Management Board for resolution.

General TC205 plenary took place 21st September 2021

Next meeting of WG7 is February 9-10th, 2022

Division 1: Vision and Colour

Report to CNC/CIE 66th Annual Meeting
National Research Council of Canada
1200 Montreal Road, Ottawa, Ontario K1A 0R6 Canada
Zoom Web Conference
Friday, Nov. 19, 2021
1:00 PM to 3:00 PM EST

Jeff Hovis
Email: jhovis@uwaterloo.ca

• Introduction

The annual Division 1 meeting was held Thursday 26th August 2021 on the Webex virtual meeting platform. Fifty-four people from 21 countries attended. Canada was represented by Jeff Hovis. The minutes can be found at the Members Section of the CNC-CIE website.

• Highlights

○ New Technical Committees and Reporterships

Melanopsin contribution to visual perception. S. Tsujimura (JP)
Terms of Reference: to study a contribution of melanopsin cells to visual perception
Currently voting are whether to approve.

○ Division publications

CIE S 017/E:2020 ILV: International Lighting Vocabulary, 2nd Edition – joint publication of all Divisions (published at the end of 2020)

○ 'Top 20' list of best CIE conference articles

Goal: Identifying Top 20 CIE conference papers (1921-2003) of interest, which will be posted on CIE website. D1 selected 24. All the titles are in the D1 minutes on our Web site. One was by a Canadian author; W. Adrian and R. Topalova. Transient adaptation process - A model to predict its effects on vision

○ Future meetings

The 2022 Division 1 meeting will be held online via Webex video conferencing
30th CIE Session, Sept 15-23, 2023 in Ljubljana, Slovenia

• 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	Sharon McFadden, Co-Chair Joanne Zwinkels Member
Liaison Associates		Joanne Zwinkels Sharon McFadden Jennifer Veitch

- **Highlights of Division Work Programme**

- **Overview of the status of TCs and Reporterships**

- **Current Technical Committees**

TC1-83 Visual aspects of time-modulated lighting. Malgorzata Perz (NL); Chair

Enquiry Draft
No CA members

TC1-84 Definition of visual field for conspicuity. Nana Itoh (JP); Chair

Pre-Working Draft – currently voting on whether to approve a year's extension
No CA members

TC1-91 New method for evaluating the colour quality of white-light sources. Yandan Lin (CN); Chair

Committee Draft
No CA members

TC1-92 Skin Colour database. Kaida Xiao (GB); Chair

Pre-Working Draft - currently voting on whether to approve a year's extension
No CA members

TC1-95 Validity of the CIE Whiteness and Tint Equations. Minchen Wei (HK); Chair

Pre-Working Draft - currently voting on whether to approve a year's extension
No CA members

TC1-96 A comprehensive model of colour vision. Ronnier Luo (GB); Chair

Working Draft
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 set-up of CIE website Version 1.0 released on GitHub

A road map forward basing CIE colorimetry on cone fundamentals. Lorne Whitehead (CA); Chair

Pre-Working Draft

TC1-99 Modelling two-dimensional colour appearance scales. Ronnier Luo (GB); Chair

Pre-Working Draft
No CA member

▪ Current Joint Technical Committees

JTC 1 (D1/D2/D4/D5): Implementation of CIE 191:2010 Mesopic Photometry in Outdoor Lighting. **Stuart Mucklejohn (GB); Chair**

No CA member

JTC 8 (D1/D2/D3/D4/D6/D8) Terminology in Light and Lighting , JTC Chair: Peter Zwick (DE), M Pointer (GB) and S McFadden(CA); Co-Chairs

Looking for someone to replace Sharon McFadden

Joanne Zwinkels, Member

Continual updating and harmonizing with other dictionaries

JTC 10 (D8/D1) A new colour appearance model for colour management systems: CIECAM16 Changun Li (CN); Chair

Approval Draft : disapproved

No CA member

JTC 12 (D2/D1/D8) The measurement of sparkle and graininess. Alejandro Ferrero (ES); Chair

Pre-Working Draft

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

Pre-Working Draft

No CA member

▪ Current Reportships

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

Continuing literature review. Potential conflict with ISO/TC 256's work

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

Results available from Kokka et al. Metrologia 2018 Vol. 55 Pages 526-534. Dr. Jost is currently on medical leave

R1.63 Tristimulus Integration – Reporter: Changjun Li (CN)

Expects to finish comparing the different methods within 12 months

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

Research work towards defining surface colour gamut in terms of reflectance has been completed

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

Draft Final Report has been submitted

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

Working on the journal paper proposing the warm-cool based CCT. Reportership report will be submitted after the journal paper in preparation is published

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

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

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

Collecting Data

- **Dissolution of and changes to TCs and Reporterships**

TC1-76 Unique hue data. Sophie Wuerger (GB)

Closed 2021 – data and drafts are archived

• Other Division News

Review & Update of CIE Research Strategy:

Received opinions from 5 countries; Reviewed, draw up a list up of D1 topics & submit to Central Bureau for discussion

Workshop for D1 TCCs will be held in the near future (be led by Kaida Xiao)

• Thank you to the 2021 Reviewers

I want to thank the following individuals for taking their time to review the numerous technical report drafts. Their thoughts, suggestions and comments were greatly appreciated.

Bill Cowan

Chad Greene

Pierre Gallant

Keith Niall

Thomy Nilsson

Sharon McFadden

Andrew Silbiger

Division 2: Physical Measurement of Light and Radiation

Report to 13th Biennial Meeting of CNC/CIE and CIE-USNC
Virtual, November 17, 2021

Dr. Joanne Zwinkels

Email: joanne.zwinkels@nrc-cnrc.gc.ca

• Introduction

The 2021 annual meeting of CIE Division 2 (D2) took place virtually in two parts. The first part was held on Thursday, September 2, 2021 and the second part was held on Thursday, September 30, 2021. As in the case of the 2020 virtual meetings, the first part was largely an informative (retrospective) reporting meeting and the second part was a forward-looking, decision-making meeting where balloting took place. I attended both parts of this meeting, as the voting Country D2 member for Canada.

• Highlights

○ New Technical Committees and Reporterships

Proposals for Three (3) new TCs

TC Proposal:	Revision of CIE 130:1998 Practical methods for the measurement of reflectance and transmittance
Proposed Chair:	Catherine Cooksey (US)
Background:	This was proposed by Reportership DR2-84 (J.Zwinkels)
TC Proposal:	Revision of CIE S025/E:2015 Test method for LED lamps, LED luminaires and LED modules
Proposed Chair:	Anders Thorseth (DK)
Background:	This was proposed from review of CIE D2 publications in photometry
TC Proposal:	Reference Spectra for Validation of Software
Proposed Chair:	Thorsten Gerloff (DE)
Background:	This was proposed by Reportership DR2-90 (P.Blattner)

Since the 2020 CIE Division 2 meeting, five new Reporterships were approved:

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

After the 2020 meeting, this reportership is: DR 2-87

Reportership:	Temperature quantities used in colour appearance properties of light sources
Reporter:	Richard Young (UK)

After the 2020 meeting, this reportership is: DR 2-88

Reportership:	Complementary spectral mismatch index
Reporter:	Anders Thorseth (DK)

After the 2020 meeting, this reportership is: DR 2-89

Reportership:	Reference spectra and metrics for software validation
Reporter:	Peter Blattner (CH)

After the 2020 meeting, this reportership is: DR 2-90

Reportership:

Reporter:

Appropriate calibration and use of UV radiometers

Tony Bergen (AU)

After the 2020 meeting, this reportership is: DR 2-91

Since the 2021 CIE Division 2 meeting, one new Reportership was proposed:

Background: This was proposed at a recent meeting of TC 2-77 on the discussion topic of getting rid of K_m and defining luminous quantities in terms of K_{cd} only
Title: TBD
Proposed Reporter: Tobias Schneider (DE)

○ **Division publications**

There have been four D2 publications since the 2020 D2 meeting:

CIE 244:2021 Characterization of Imaging Luminance Measurement Devices (ILMDs)

CIE TN 012:2021 Guidance on the Measurement of Temporal Light Modulation of Light Sources and Lighting Systems

CIE 242:2020 Photometry of Curved and Flexible OLED and LED Sources

CIE 241:2020 Recommended Reference Solar Spectra for Industrial Applications

D2 was also very active in producing **CIE S017/E:2020** ILV: International Lighting Vocabulary, 2nd ed.

○ **Future meetings**

- **D2 2022 meetings** in Athens, Greece , Date (TBD). Proposal to include tutorial and workshop day and possibly partnered with annual meetings of other Divisions depending upon presentation topic (e.g. UV sources – with D6; TLM – with D3, BRDF/BTDF – with D1) and TC meetings.
- **CIE 2023, 30th Quadrennial Session**, Slovenia, September 2023

○ **Other D2 activities since D1 2020 virtual meetings:**

- **D2 discussion on Measurement Uncertainty (MU) in support of CIE S025 (June 2021). The focus was on Monte Carlo simulation**
- **CIE 2021 midterm meeting** – 13 D2 oral presentations, 20 D2 posters, two D2 Workshops: 1) Sampling interval in photometry and radiometry; 2) Revision of CIE S025 and ISO/CIE 19476
- **Thirteen D2 ballots**
- **Four urgent D2 TCs:** TC 2-86, TC 2-89, TC 2-90 and TC 2-96:
 - TC 2-86 had a change in TCC from Chen to Weinold
 - TC 2-89 published a TN in 2020 and had a change in TCC from Schakel to Q.(Cherry) Li
 - TC 2-90 is under CB control
 - TC 2-96 has started work; concern expressed that TCC and D2M mentor are the same person (Sperling); it was recommended at meeting to assign a new mentor for this TC

- Also, TC 2-68 has had a change in TCC to H. Shitomi and reduced Terms of Reference

- **Current Canadian participation in Division 2 activities**

Activity	Title	Canadian Member
<i>Nine TCs/JTCs:</i>		
TC 2-77	Fundamental Concepts	J. Zwinkels (member)
TC 2-80	Spectroradiometric measurement of light sources	J. Zwinkels (member)
TC 2-82	Revision of CIE S014-2	J. Zwinkels (member)
TC 2-90	LED reference spectrum for photometer calibration	J. Zwinkels (member)
TC 2-92	International standard format for the electronic transfer of luminaire optical data	I. Ashdown (TCC)
TC 2-93	Revision of ISO 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)
JTC-08	Terminology in light and lighting	J. Zwinkels (member)
JTC-01	Implementation of mesopic photometry in outdoor lighting	J. Zwinkels (member)
<i>One Reporter:</i>		
DR 2-84	CIE D2 Strategy on Spectrophotometry	J. Zwinkels (Reporter)
<i>One Liaison:</i>		
L2-3	ISO TC6: Paper, Pulp and Board	J. Zwinkels (member)
<i>One Officer:</i>		
Division 2	Associate Director	J. Zwinkels

- **Highlights of Division 2 Work Programme**

- **Overview of the status of D2 TCs and Reporterships**

The active D2 TCs, JTCs and Reporterships are listed below. The most recent Minutes are attached.

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

- **JTC19 (D6/D2)** Terms and definitions of horticultural lighting (D2TCC: Dekker)

- **JTC-17 (D1/D2/D8)** Gloss measurement and gloss perception: A framework for the definition and standardization of visual cues to gloss (D2TCC: Obein)

- **JTC-12 (D1/D2/D8)** The measurement of sparkle and graininess (D2TCC: Ferrero)

- JTC-08 (D1/D2/D3/D4/D6/D8)** Terminology (D2TCC: Blattner)
- JTC-01 (D4/D1/D2)** Implementation of mesopic photometry in outdoor lighting (D2TCC: Goodman)
- 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 2-93** Revision of ISO 23539:2005/(E)CIE S010/E:2004 Photometry – The CIE system of physical photometry (Thorseth)
- TC 2-92** International standard format for the electronic transfer of luminaire optical data (Ashdown)
- TC 2-91** Optical measurement methods of LED packages and LED arrays (Schneider)
- TC 2-90** LED reference spectrum for photometer calibration (Poikonen)
- TC 2-89** Measurement of Temporal Light Modulation of Light Sources and Lighting Systems (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 (Pope)
- TC 2-82** Revision of CIE S014-2 (Csuti)
- TC 2-81** Update of CIE 065:1985 (Absolute Radiometers); (Smid)
- TC 2-80**: Spectroradiometric measurement of light sources (Schneider)
- TC 2-79**: Integrating sphere photometry and spectroradiometry (D.H.Lee)
- TC 2-78**: The Goniophotometry of Lamps and Luminaires (Bergen)
- TC 2-77**: Fundamental Concepts (Bergen)
- TC 2-68**: 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 (Krüger)

4.1.2 Reporterships DR2-xx: (Reporter) Title

- DR2-64** (Edwin Mofokeng) TN on Errors of Measurement in Spectrophotometry
- DR2-69** (Johannes Ledig) TN on the validation of a near-field goniophotometer
- DR2-75** (Tony Bergen) TN on the use of “Accuracy” and related terms in the specifications of testing and measurement equipment
- DR2-76** (Udo Krüger) TN on measurement uncertainties for testing of LED Lamps, Luminaires and Modules
- DR2-77**(Tongsheng Mou) Measurement of Quantities Relating to Photobiological Safety of Lighting Products
- DR2-78** (Annette Koo) Investigation of the need for documentary guidance relating to 0°:d (d:0°) reflectance instrument
- DR 2-80** (Anders Thorseth) Metrology of laser-based lighting
- DR 2-81** (Dennis Couzin) Flash effective intensity calculation

DR 2-82 (Tony Bergen) TN on clarification of the difference between adjustment, calibration and verification

DR 2-83 (Quian (Cherry) Li) Characterization and measurement of horticultural lighting products

DR 2-84 (Joanne Zwinkels) CIE D2 Strategy on Spectrophotometry

DR 2-85 (F. Stuker) Quality indices for light dosimeters including visual and non-visual effects

DR 2-86 (Alejandro Ferrero) Definitions for bidirectional scattering surface reflectance distribution (BSSCRDF)

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

DR 2-88 (Richard Young) Temperature quantities used in colour appearance properties of light sources

DR 2-89 (Anders Thorseth) Complementary spectral mismatch index

DR 2-90 (Peter Blattner) Reference spectra and metrics for software validation

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

○ **Dissolution of and changes to TCs and Reporterships**

4.2.1 The following Four Reporterships were recommended to be closed because their Reporters have submitted final reports for 2021 D2 meeting,

DR 2-83

DR 2-84 – recommended creation of a new TC to Revise CIE 130:1998

DR 2-85

DR 2-86

• **Other Division News**

5.1 Work in Progress/ Recently Completed

CIE LB D02-2111 Ballot on 2nd DIS ISO/CIE 11664-2; Deadline: 2021-11-15

CIE LB D02-2110 D2 commenting on second ED/TR of TC 6-52; Deadline: 2021-09-03

CIE LB D02-2109 D2 annual meeting to be held in Athens, Greece; Deadline: 2021-07-25

CIE LB D02-2108 D2 voting on AD/TR of TC 2-59; Deadline: 2021-04-23

CIE LB D02-2107 D2 voting on Creation of a new Liaison Officer between CIE D2 and EURAMET project 20NRM01 on TLM, Liaison Officer: D.H. Lee (KR); Deadline: 2021-04-14

CIE LB D02-2106 D2 voting on Creation of a new Reportership on appropriate calibration and use of UV radiometers, Reporter: T. Bergen (AU); Deadline: 2021-04-14

CIE LB D02-2105 D2 voting on Creation of a new Reportership on reference spectra and metrics for software validation, Reporter: P. Blattner (CH); Deadline: 2021-04-14

CIE LB D02-2104 D2 voting on Creation of a new Reportership on complementary spectral mismatch index, Reporter: A. Thorseth (DK); Deadline: 2021-04-14

CIE LB D02-2103 D2 voting on Change of date of D2 2021 annual meeting; Deadline: 2021-04-14

CIE LB D02-2102 D2 voting on Change of TCC for TC 2-68 (from Y. Yamauchi to H. Shitomi); Deadline: 2021-02-22

CIE LB D02-2101 D2 commenting on ED/TR of TC 2-59; Deadline: 2021-03-05

CIE LB D02-2015 D2 voting on AD/TN of TC 2-89; Deadline: 2021-01-14

CIE LB D02-2014 D2 voting on Change of TCC for TC 2-89 (from M. Schakel to Q.(Cherry) Li; Deadline: 2021-01-14

CIE LB D02-2013 D2 voting on Approval of TC on measurement of obtrusive light and sky glow; Deadline: 2021-01-26

CIE LB D02-2012 D2 voting on Approval of TC on Revision of CIE S023; Deadline: 2021-01-14

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

5.2 Call for Experts for CIE D2 TCs:

TC 2-95 Measurement of obtrusive light and sky glow

The purpose of this TC is to provide guidelines and examples for metrics, measurement methods and corresponding instrument specifications for the measurement of obtrusive light and sky glow including the estimation of measurement uncertainty contributions for the measurement, necessary to validate assessment criteria of its effects on the environment. The proposed guidelines and examples can be used as a common base with reliable and traceable techniques for various disciplines that are dealing with obtrusive light and sky glow measurements, light pollution assessment and research.

Chair: Constantinos Bouroussis (GR)

TC 2-96 Revision of ISO/TCIE 19476:2014 Characterization of the performance of illuminance meters and luminance meters

The purpose of this TC is to revise the Standard ISO/CIE 19476:2014 and CIE S 023/E:2013 respectively, taking into account the feedback received in the systematic review held in 2019.

Chair: Armin Sperling (DE)

5.3 Technical Discussions at CIE D2 meeting (2021)

5.3.1 CIE Research Strategy

D2D led discussion on review of D2 priorities for updated CIE research strategy. Current CIE strategy includes two D2-based topics: 1) New calibration sources and illuminants for photometry, colorimetry and radiometry; and 2) Metrology for advanced photometric and radiometric devices. There were several other proposals, including:

- Horticultural lighting (typical LED standards for calibration and metrics for quantifying new types of displays)
- Measurement of luminance distribution based on an RGB camera
- Use of machine learning, deep neural networks, deep learning and other mathematical tools (need for traceability and validation)
- Implementation of the SI-digital framework concept proposed by the CIPM (need for worldwide agreement on meta data format for all measurement data)

Action item: D2D will prepare a summary of these suggested topics for an updated CIE research strategy for comments and prioritization by D2 members before the next DD meeting.

5.3.2 CIE D2 Standardization Strategy

The D2D asked the D2 members if there were any recommendations for new Standards or D2 technical reports to be converted to Standards. There were no suggestions at this time.

Division 3: Interior Environment and Lighting Design

Report to CNC/CIE 66th Annual Meeting
Online, 2021-Nov-19

Jennifer A. Veitch, Ph.D.
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• Introduction

The 2021 meeting of Division 3 was held via Webex on June 29, 2021. Normally, of course, it would have been held in conjunction with the CIE Midterm meeting, but the meetings were separated from the conference because of the online format. The minutes are available to CNC/CIE Members on the Members area of the website.

• Highlights

○ New Technical Committees, Reporterships, and Other Activities

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

Number	Title	TCC
TC 3-59	The integration of daylight and electric lighting – photometric, colorimetric and radiometric requirements for the spectral design of indoor lighting	Xue Peng (CN)
TC 3-60	Spectral daylight characteristics	Martine Knoop (DE)

○ Division publications

Since the last CNC/CIE report in December 2020, D3 has completed no publications. (TN 011:2020, announced at the last CNC/CIE meeting, was published around the date of that meeting.)

○ Future meetings

2022: WebEx

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

• 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	D. McLean (co-chair)
ITC 14	Integrative Lighting	J. Veitch (Member; D3 Chair)
ITC 15	Lighting of Indoor Workplaces	J. Veitch (Member)
TC 3-57	Generic Discomfort Glare Sensation Model	D. McLean
TC 3-59	The integration of daylight and electric lighting – photometric, colorimetric and radiometric requirements for the spectral design of indoor lighting	D. Gottesman
RF-02	Matters Relating to Temporal Light Modulation	J. Veitch (Convenor)

In addition, Canadians are active in D3-related activities through the Canadian mirror committee to ISO TC 274. Although these are not, strictly speaking, CIE activities, they are indicative of Canadian participation in the broader work of recommendations and standards for light and lighting.

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

• Highlights of Division Work Programme

Several TCs experienced delays in 2020-2021 because of the pandemic, but the Division Management Team is working with these committees to re-engage.

○ Overview of the status of TCs and Reporterships

D3 has adopted a standard template for reporting TC status. Reports on each TC are available as part of the meeting minutes available to CNC/CIE Members at www.cnc-cie.ca.

Activity	Title	Chairman	Status
JTC 6 (CIE-ISO)	Energy Performance of Lighting in Buildings	L. Bellia [IT]	ISO/CIE CD 10916 <i>Calculation of the impact of daylight utilization on the net and final energy demand for lighting</i> has been balloted once and comments are being resolved. Toby Lau leads a project group developing ISO/CIE WD TR 3092 <i>Light and lighting – Energy performance of lighting in buildings – Explanation and justification of ISO/CIE 20086</i> . There is a new task force to address building information modelling (BIM), ISO/NP TS 7127, BIM Properties for Lighting — Luminaires and Sensing devices
JTC 8 (all Ds)	Terminology	P. Zwick (CIE-TM); P. Thorns for D3.	The final publication of CIE S017:2020 was published just after the last CNC/CIE meeting. Terms are now being collected for a future edition.

<i>Activity</i>	<i>Title</i>	<i>Chairman</i>	<i>Status</i>
JTC 13 (D4/D3)	Depreciation and Maintenance of Lighting Systems	D. Gasparovsky (D4) Peng Zhuang (D3)	A working draft is in preparation; the TC met June 16, 2021 (just before the Division meeting).
ITC 14	Integrative Lighting	J. O'Hagan [UK] [D3, J. Veitch]	ISO/CIE TR 21783 has been successfully balloted again in both ISO/TC 274 and CIE. I expect publication to occur shortly, following a few editorial revisions.
ITC 15	Lighting of Indoor Workplaces	E. Mochizuki [JP]	The project has officially begun. Meetings are being held monthly with the goal of completing a draft by May 2022. Small task groups are each taking on specific clauses; I am in groups for temporal light modulation and adjustability/variability/control.
JTC 18 (D3/D4)	Lighting Education	D3: Piotr Praki [PL]	The pandemic interrupted work, but a draft is expected by year-end.
TC 3-54	Revision of CIE 16-1970: Daylight	Y. Sutter [FR]	Term was extended to 2024 because of the new TCC. Work is resuming after COVID-related delays.
TC 3-56	Assessment of Discomfort Glare from Daylight in Buildings	T. Iwata [JP]	The document is with CB and editorial changes are under way.
TC 3-57	Generic Discomfort Glare Sensation Model	G. Vissenberg (NL)	Work is progressing, having been split between three subgroups that will produce output by end of 2021.
TC 3-58	Visual ergonomics and digital display use	J. Long (AU)	Work progressing, subgroups having been assigned tasks.
TC 3-59	The integration of daylight and electric lighting – photometric, colorimetric and radiometric requirements for the spectral design of indoor lighting	Xue Peng (CN)	Work will commence soon.
TC 3-60	Spectral daylight characteristics	M. Knoop (DE)	Work will commence soon.
DR3-33	Guidelines for Post-Occupancy Evaluation of Lighting Installations	V. Garcia-Hansen [AU]	A draft report has been produced.
DR 3-35	Resilient Lighting	Yuki Akizuki [JP]	A final draft has been produced, which suggests the need for a TC on this topic.
DR 3-36	Luminance Measurement for UGR	Gilles Vissenberg [NL]	Progress was delayed by the pandemic, but a draft is expected in January 2022.
RF-02	Matters Relating to Temporal Light Modulation	J. Veitch [CA]	Ongoing

○ **Dissolution of and changes to TCs and Reporterships**

No activities have been closed in the past year.

<i>Activity</i>	<i>Title</i>	<i>Chair</i>	<i>Reason</i>

○ **Liaison representatives (LRs)**

D3 confirmed new LR with ISO/TC 159/SC4 and ISO/TC 205/WG7. LR are being asked to be more proactive in communicating to their liaisons about CIE interests, and to communicate back to the CIE any issues arising.

○ **Research strategy update**

At the Division meeting and by e-mail subsequently, D3 (and all Divisions) have been collecting input for the update of the CIE Research Strategy. Divisions are to provide input to the VPT by the end of November, 2021, for the development of an integrated set of research goals that are intended to support future CIE work items. That is to say, the research strategy is an outward-facing document intended to inspire researchers to conduct the investigations that will serve as the knowledge base for future CIE technical publications.

Among the suggestions made was the need for better integration of the topics; lighting-related themes are one possibility (e.g., evidence-based design; human factors; improved metrics...) and another has been to link topics to the United Nations Sustainable Development Goals.

• **Other Division News**

The Director of Division 3, Mr. Peter Thorns (UK), has been appointed Convenor of ISO/TC 274 as of Jan 1, 2022, for a three year term. It is unclear whether or not he will need to step down as Division Director, although at present it seems that he will hold both roles until at least the 2023 end of the quadrennium.

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 65th Annual Meeting
Webinar, November 17, 2021

Cristian Suvagau
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• Introduction

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

The Div. 4 officers for 2020-2022 are:

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

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

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

Last Division 4 meeting was hold online October 12 and 14, 2021.

More information can be found on the CIE website.

• Highlights

○ New Items

2.1.1 Research

Existing priority topics:

- Adaptive Lighting - update, develop and consult for merging inputs with Div.3
- Tailored Lighting – explore lighting for elderly and visual impaired

New priority topics:

An online meeting was hold on October 11, 2021 to discuss potential further research topics:

- Lighting calculations, measurements and metrics
- Obtrusive light
- Lighting of the urban environment – research needed to study the combined effects of safety, security and esthetics, also considering the sustainable urbanization
- Lighting for modern systems of transportation – including autonomous vehicles
- Depreciation of lighting systems

○ Division publications

Publications produced during the past year:

- CIE 243:2021 Discomfort Glare in Road Lighting and Vehicle Lighting

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

- 14 publications are marked as “current”
- 5 publications are prepared or suggested for revision
- 5 publications are proposed for archival / withdrawal
- 5 publications have pending reviews

○ **Future meetings**

- 2022 Prague (CZ)- following Lux Europa 2022, 23-24.09.2022
- 2023 Ljubljana (SI) - CIE Quadrennial Session - 15.-23.09.2023
- 2024 Shanghai (CN) - mid-term meeting - 09.-13.05.2024

• **Current Canadian participation in Division X activities**

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

Activity	Title	Canadian Members
Div. 4	CNC Division representative	Cristian Suvagau
TC4-58	TC member	Ian Ashdown
	CNC Member	Deborah Gottesman
	TC member	Lynn Asselin
	TC member	Andrew Silbiger

• **Highlights of Division Work Program**

○ **Overview of the status of TCs and Reporterships**

Currently the Division 4 incorporates 11 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: Due out in 2019 was delayed. Draft Technical Report approved in 2021

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

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

Chair: Steve E Jenkins (AU)

Status: Draft finished- Ballot in 2021 – Finalization of comments in Dec. 2021

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) replaces Haldun Demirdes (TR)

Status: Ballot for 2021.

TC 4-51 Optimization of Road Lighting

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

Chair: Per-Ole Wanvik (NO)

Status: TC works stopped in 2020. TC scope to be reevaluated

TC 4-53 Tunnel Lighting Evolution

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

Chair: Raoul Lorphevre (BE)

Status: asking for an extension for 1 yr

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)

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

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

Chair: Alan Smith (GB)

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

(new TC number as being moved from Div 5)

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

Chair: Steve Lau (CN)

TC 4-59 Guide for Lighting Urban Elements

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

Chair: Diana del Negro (PT)

TC 4-60 Road Traffic Lights – Photometric Properties of Roundel Signals

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

Chair: Ron Gibbons (US)

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 draft of TR is expected to be ready in begin of 2022

TC 4-62: Adaptive Road Lighting

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

Chair: Thomas Baenziger (CH)

Status: Workshop on Adaptive Road Lighting was held within CIE mid-term meeting 2021. Technical Note to be published in 2022

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 almost done and soon it will move to the ballots.

JTC 13 (D4/D3) Depreciation and Maintenance of Lighting Systems

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

Chair: Dionyz Gasparovsky (SK)

JTC 18 (D3/D4): Lighting Education

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

Chair: Piotr Pracki (PL)

4.1.2 Reporterships:

DR 4-36 CEN/TC169 Lighting Applications

Reporter: Axel Stockmar (GE)

DR 4-49 Flicker from Lighting on High Speed Road

Reporter: Chao-Hua Wen (CN)

DR 4-50 Document Status and Review

Reporter: Dionyz Gasparovsky (SK)

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

Reporter: Tsung-Xian Lee (CN)

DR-4-52 Visibility under Adverse Weather Conditions

Reporter: Chan-Su Lee (CN)

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

Reporter: Constantinos Bouroussis (GR)

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

Reporter: Jim Uttley (GB)

○ Dissolution of and changes to TCs and Reporterships

- TC 4-33 Discomfort Glare in Road Lighting
- TC 4-45 Performance Assessment Method for Vehicle Headlamps
- TC 4-52 Lighting for Pedestrians: New Empirical Data
- TC 4-56 Master planning Urban Lighting
- TC 5-28 Guide On Limitation Of The Effects Of Obtrusive Light
- R 4-41 Lighting For Elderly
- R 4-48 Intrusive Light
- R 5-16 Photometric Specification And Measurement Of Sports Lighting Installations
- R 5-18 Comparison Of Glare Assessment Methods

• Other Division News

Tutorials to be developed following the release of new CIE publications.

The Urban Lighting Masterplan is a suitable topic for tutorial in the near future.

Recent workshops:

- Adaptive Road Lighting - (within mid-term conference in Penang, Malaysia, September 26-October 2, 2021)
- Discomfort Glare - (within mid-term lighting in Penang, Malaysia, September 26-October 2, 2021)

Future Workshops:

- 2022 – Tutorial on Urban Lighting Masterplanning, tentatively autumn 2022
- 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.-13.05.2022

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

- **LO 4-3** IAU (International Astronomical Union) (Richard Wainscoat)
- **LO 4-4** PIARC (Jean-Claude Martin)
- **LO 4-5** GTB (The International Automotive Lighting and Light Signalling Expert Group - Groupe de Travail "Bruxelles 1952")
- **LO 4-6** LUCI (Lighting Urban Community International)
- **LO 4-7** IALA (International Association of Marine) (Alwyn Williams)
- **LO 4-8** CEN/TC 169/WG12 Road Lighting (Sermin Onaygil)



Division 6: Photobiology and Photochemistry

Report to CNC/CIE 66th Annual Meeting

HELD BY ZOOM ON 17th NOVEMBER 2021 AT Eastern Time (US and Canada). The second meeting is The 2021 Annual General Meeting of the CNC-CIE held on November 19th, starting at 1 PM EST.

Sami Qutob (Canadian representative for Division 6)
 Email: Sami.Qutob@hc-sc.gc.ca

• Introduction

Terms of Reference of Division 6: To study and evaluate the effects of optical radiation on biological and photochemical systems (exclusive of vision). The list of TCs, their terms of reference and current status is available on the Division web page: <https://cie.co.at/technical-work/divisions/division6>

DIVISION OFFICERS

Luc Schlangen (LS)	NL	Netherlands	DD6 (Division Director)
Eric Liggins (EL)	GB	United Kingdom	DE6 (Division Editor)
Luke Price (LP)	GB	United Kingdom	DS6 (Division Secretary)
Shu Takeshita (ST)	JP	Japan	ADD6 (Associate Director)
Karl Schulmeister (KS)	AT	Austria	ADD6
David H. Sliney (DHS)	US	United States	ADD6

Official Division 6 Members

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
Jens Christoffersen	DK	Denmark
David Baeza Moyano	ES	Spain
Helge Lemmetyinen	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
Mee-Ryoung Cho	KR	South Korea
Vineetha Kalavally	MY	Malaysia

Terje Christensen	NO	Norway
Chris Chitty	NZ	New Zealand
Urszula Blaszczyk	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
Natasha van der Walt	ZA	South Africa

• Highlights

Modifications were made to CIE CoP (Code of Procedures) Edition 06/2019 resulting into CoP Edition 07/2021. The main changes concern:

1. The Code of Ethics
2. The Collaboration Platform and circulation of documents
3. The Standardization Strategy and Policy
4. The policy on liaison with external organizations
5. Collaboration with external organizations
6. Division Members and Division Associates
7. Liaison Representatives and Division Correspondents
8. Interdivisional TCs (within CIE) and Joint TCs (with other organizations)
9. New role of Associate TC Chair introduced
10. Types of technical publications
11. Drafting and approval procedures of technical publications
12. The acknowledgement of main contributors to the preparation of International Standards
13. Planning schemes of events

For questions or comments on this CoP please contact ciecb@cie.co.at.

Division 6 has four new committee members: Banu Manav (BM) heads the NC (National Committee) for Turkey and represents it at D6. BM is a designer of interior lighting and has a number of academic roles, specialising in light and health, light and perception, interior lighting, user satisfaction and recently colour in relation to lighting. Ralf Zuber the new NC Rep for Germany and Andrea Testa the new DMA (Associated Division Member) for Italy. In addition, Guy Vandermeersch (GV) from Belgium who's experience includes photometry and standardisation for lamp and luminaire committees and as chair of CEN TC169.

○ New Technical Committees and Reporterships

One new TC was proposed at the Division meeting. It is: Photobiologically effective radiation, quantities, symbols and action spectra (Proposed by Peter Sperfeld (PS) DMA) which had received majority support with two commenters. PS speculated whether the initiative was too big for Division 6, and whether to engage ICNIRP to assist, and also noted concerns about his workload in respect of being able to manage this TC. Comments to be considered with DMT.

Terms of Reference: Provide a comprehensive and uniform framework for action spectra, radiometric quantities, symbols and calculations for various photochemical, photobiological and thermal effects of optical radiation.

The framework will:

- identify for which effects international standards already exist and reference those

- identify for which effects international standards do not exist while international consensus documents are available and reference those
- provide recommendations for which existing international consensus documents or standards an update merits to be considered
- consider national standards and authoritative equivalents, such as DIN 5031 – 10:2018-04, for inclusion in the framework where consensus can be achieved

○ Division publications

List publications produced during the past year.

CIE 245:2021 Optical Safety of Infrared Eye Trackers Applied for Extended Durations ISBN: 978-3-902842-14-5 DOI: 10.25039/TR.245.2021 (Division 6). <https://cie.co.at/publications/optical-safety-infrared-eye-trackers-applied-extended-durations>

CIE S 017/E:2020 ILV: International Lighting Vocabulary, 2nd Edition DOI: 10.25039/S017.2020 (Division 1 Division 2 Division 3 Division 4 Division 5 Division 6 Division 8 JTC). <https://cie.co.at/publications/ilv-international-lighting-vocabulary-2nd-edition-0>

○ Future meetings

The annual Division 6 meeting in 2022 will be held by Webex, and the intended date will be decided and circulated by DD and DMT.

LS proposed that in 2023, it is hoped the Division will meet in person at the quadrennial meeting Ljubljana (in Slovenia) 15-23 September 2023. It is usually either immediately before or after the conference dates (DS6: i.e. I expect that means the D6 meeting will be within the date range shown).

● Current Canadian participation in Division 6 activities

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

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

● Highlights of Division Work Programme

The following summaries of activities in the various TCs of Division 6 are based on the minutes from the 2021 Division 6 meeting. Additional information on some of the TCs can be found in the minutes as well as the Activity Report for 2021. These are available in PDF format on the IEC Collaboration Platform (<https://collaboration.iec.ch/>).

○ Overview of the status of TCs and Reporterships

The current set of minutes or Activity Report is available on Collaboration Platform.

List of active TCs and Reporterships:

TC 6-52 Proper Measurement of Passive UV Air Disinfection Sources, Richard Vincent.

<https://cie.co.at/technicalcommittees/proper-measurement-passive-uv-air-disinfection-sources>

TC 6-64 Optical Safety of Infrared Eye Trackers Applied for Extended-Durations, David Sliney.

<https://cie.co.at/publications/optical-safety-infrared-eye-trackers-applied-extended-durations>

JTC 05 (CIE-IEC) Review of IEC 62471/CIE S009, John O'Hagan.

<https://cie.co.at/technicalcommittees/review-iec-62471cie-s009>

JTC 14 (CIE-ISO) Integrative Lighting, John O'Hagan. <https://cie.co.at/technicalcommittees/integrative-lighting>

JTC19 (D6/D2) Terms and Definitions of Horticultural Lighting, Wei ZhangL 6-1 IEC/TC76/WG1&9L, David Sliney. <https://cie.co.at/technicalcommittees/terms-and-definitions-horticultural-lighting>

L 6-2 WHO, John O'Hagan

L 6-4 ICNIRP, Karl Schulmeister

L 6-6 ASP, David Sliney

L 6-7 WMO, Ann Webb

L 6-8 CEN TC169 WG8, John O'Hagan

L 6-10 IEC/TC 34/WG 6, John O'Hagan

DR 6-43 Illuminators for Treatment of Infant Hyperbilirubinemia, Michael Lynn

DR 6-45 Publication and maintenance of the CIE S026 Toolbox, Luke Price

DR 6-46 Second International Workshop on Circadian and Neurophysiological Photoreception, Luke Price

DR 6-47 The Role of Light and Lighting Conditions in the Prevention, Development and Mitigation of Myopia: a Literature Review, Coralie Barra

RF-02 Matters relating to temporal light modulation, Jennifer Veitch

4.1.1 Progress of TCs and Reporterships

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

RV thanked for those involved on the draft Technical Report (TR), and noted the pressing need to apply germicidal products to control COVID-19. Peter Zwick at CB and Tony Bergen at D2 had also been assisting.

Text adapted from the submitted activity report by DS6:

(Since the June 2020 activity report, the TC 6-52 working closely with experts from Division 2 have responded to comments received from various ballots. TC 6-52 Terms of Reference were updated and approved by the BA to align more closely with the evolving use of upper air UVGI Luminaires.

The 2nd Enquiry Draft Technical Report of TC 6-52 CIE Guide for the Gonioradiometric Measurement of Upper Air Ultraviolet Germicidal Irradiation Luminaires has just been approved by the Board of Administration and Division 6 (Notification 9//4/2021). However, 50 comments were submitted by BA, D6 and D2 members, which will need to be addressed by the committee.

We will work to address these comments by the end of September 2021. This work continues to be of high importance as the COVID-19 pandemic is impacting the global community.) Several comments from BA, D6 and D2 to be considered with CB.

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

In the absence of the chairs at the D6 meeting, EL said there was not really needing to add anything to his earlier summary in his editor's report. This was an example of D6 and CB working together.

LP noted he had looked at the comments from the ballot, and that the CB comments had be addressed and considered, which left only D6 comments which seemed to be editorial. LS noted CB has asked the chairs to resolve the comments and LS hopes it can proceed without a repeat ballot. Editorial comments from BA (accepted and considered) and D6 ballots.

JTC-5 Joint Technical Committee to Revise CIE S009/IEC 62471 (John O'Hagan)

JOH explained this had been a long process involving lots of people and diverse opinions. He was aiming to simplify the document to provide a clearer rational for the definition of the risk groups; and to improve the guidance on measurements working with Tony Bergen for Division 2, and try to get it approved and published. This next version would be shared after the next round of the JTC comments.

After 2019, there has been no specific technical activity within JTC 05, with further details available in JOH's report. The CIE Technical Manager has agreed to convert JTC 05 draft into the CIE template (from an old

IEC template). JTC 05 is now waiting to ballot on a WD/IS that he will distribute after he completes editing the current draft. Progress on comments would then include DE6.

When published, it was requested that CIE should run a Workshop or tutorial on it, and publicise with CIE before handed over to IEC.

JTC-8 International Lighting Vocabulary (Peter Zwick)

Progress achieved since May 2020 (the approval history of ILV 2nd Edition was also provided in the activity report available in D6 meetings>2021 on the collaboration platform). JOH was a member, and noted there was basically nothing to report on this JTC.

(DS6: excerpts of the report below provided by Peter Zwick:

2020-06 – 2020-12: Preparation of CIE S 017, 2nd Edition, final harmonization with IEC 60050-845

2020-07 – 2020-08: Translation of terms to German

2020-12 Publication of CIE S 017 ILV: International Lighting Vocabulary, 2nd Edition

2021-03 Start of translation of definitions to German

JTC-8 has a standing committee to undertake continuous work on the improvement of the ILV and harmonization with the IEV (IEC 60050-845), ISO 80000-7 and other international terminology standards.)

JTC-14 (CIE-ISO) Integrative Lighting (John O'Hagan)

This is a JTC with ISO under the new definition. The draft TR 21783 “Integrative lighting – Non-visual effects” was balloted within D6 (LB D06-2002), with a deadline of 2020-05-11. Comments were addressed.

Meanwhile ISO TC 159 SC 4 WG 3 (Ergonomics) also became aware of the document. In addition, JTC14/JWG 4 saw the draft TR ISO 9241-610 “Ergonomics of human-system interaction — Part 610: Impact of light and lighting on humans”. Both documents were commented by the other committee.

TC 274 discovered an overlap of the two documents. In a meeting between the two Convenors, TC 159, TC 274 and ISO Committee Manager Stephane Sauvage on 10th May 2021 it was agreed that the two Convenors will meet and react on the comments together. This meeting was amicable and it was agreed that the draft TR 21783 was ready for a further ballot – as ISO/TC 274 N721 and CIE LB D06-2015. These ballots will close on 2021-10-15 within ISO and 2021-10-11 in CIE.

It is planned to close the JTC after publication of the joint logo technical report: ISO/CIE TR 21783 “Integrative Lighting”. The JTC-14 report is resolved and out for comment, so the hope is for publication at the end of the year. The D6 ballot closed in October 2021.

(DS6: As with most activities, the full progress report is available on Collaboration Platform)

JTC-19 Terms and Definitions of Horticultural Lighting (Wei Zhang)

Work draft for JTC19 member commenting are already back on the outline draft, which is the achievement from the first 4 JTC meetings. The target of the second JTC meeting is to confirm the outline (the terms to be covered), after which, the full draft will be prepared. It is intended to make the WD for ballot available in Nov 2021. LS noted that this will be renamed as an ITC under the new nomenclature.

Progress reports from Reporters

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

As EL had explained that ML had submitted a first draft and addressing some comments. ML intended to send EL the next draft with reactions to his comments. He was happy to be able to include some further charts as the 10 page limit would not apply.

ML pointed out the important difference in regards to sensitivity curves of absorption and action and that it is very challenging to determine the actual action spectrum *in vivo* as it is difficult to conduct experiments on babies.

Absorption peaks at 460 nm vs 480 nm for the action spectrum, according to modelling by a few experts, and the latter is going to be the recommendation of ML's report. This has paralleled development of phototherapy for dermatological conditions in terms of the progress of the science and practice, as lighting technology has developed. Recently for Treatment of Infant Hyperbilirubinemia fluorescent illuminators with a peak output at

450 nm were used, but now with LEDs the spectrum can be optimised, so the recommendation is for narrowband tubes at 480 nm. In the last year clinical trials have supported this, and 8 units bought in Reading are in use, and these are working as expected.

LP congratulated ML that his recommendations in previous draft reports he had seen, were now being adopted in practice. TC agreed and was happy to see this report coming along.

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

LS noted that the report on Collaboration Platform was erroneously numbered DR6-47 and was corrected.

LP reported that the maintenance of this continues, and that feedback often indicated the features people would like, and the reportership thinking where appropriate. The current plan is to retain the current offering, and continue to promote its use.

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

LP presented a summary of the consensus recommendations from the Preprint undergoing peer-review and his presentation of the Second Manchester Workshop in 2019 at the CIE Workshop at the Midterm Session. He also noted the 2019 CIE position statement, which was based on the simplified recommendations from Manchester.

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

LS presented a progress report from CB. 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.

TC noted that he had attended a session commenting on positive effects of UV radiation, and had been surprised, as he thought it was a questions more about the visible part of the spectrum. LS responded it was known that time spent outdoors is important, perhaps through focusing at distance, perhaps the effect of light, but that he understood there are many hypotheses to be investigated before the leading mechanism(s) could be isolated.

• Progress reports from Liaison Officers

LP noted the Liaisons were organised in 2020, and **L6-3**, **L6-5** and **L6-9** were dissolved. The new CoP (Code of Procedures) implies the next review of D6 liaisons will be due in 2022, using the new role type DC (Division Correspondent). Some liaisons might not report at CIE level as LR (Liaison Representatives).

L6-1 IEC TC76 International Electrotechnical Commission: Optical radiation safety and laser equipment for WG1 Optical radiation safety & WG9 Non coherent sources (David Sliney)

David Sliney holds some liaisons, and there had been no response to requests for the liaison reports. There was no report, and no discussion on L6-1.

L6-2 WHO World Health Organization (John O'Hagan)

JOH submitted a paper to the Journal of Radiological Protection awaiting acceptance to the journal.

JOH then discussed the aim of getting CIE recognised as a collaborator by WHO. This would be for expertise on eye-health and myopia firstly, and secondly in terms of general photobiology. The challenge would be to detail what CIE would be doing to support WHO, and whether this is what CIE actually would like to do.

WHO is preparing Basic Safety Standards for Non-Ionising Radiation, including optical radiation. CIE is represented on the Core Group tasked with preparing the draft document by John O'Hagan.

A set of recommended criteria were presented to a joint meeting of INTERSUN and the EMF International Advisory Committee in Geneva on 28 May 2019. 43 criteria are proposed covering the three groups considered: public, worker and medical. It was recognised that recreational and occupational exposure to solar ultraviolet radiation was a particular concern for some countries.

It is planned to have a mature document for circulation and comment later in 2021. The scheduled meetings for June 2020 and June 2021 were cancelled, but online meetings continue to take place on the first Tuesday of each month.

CIE supported the WHO message about the risks of using UV-C sources to irradiate the skin to reduce the risk of SARS-CoV-2 transmission.

A longer-term aim is to try to get CIE recognised as a Non-Government Organisation in formal liaison with WHO.

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

LS noted KS had given his notice to resign as ADD and from L6-4. LP added KS was concentrating on a free ebook on optical radiation safety that he hoped would also be a resource for the Division 6 community.

LS said this meant there was a need to identify a new officer and liaison. JOH explained there were discussions with ICNIRP about making parts of the Workshop free online. ICNIRP also have an activity looking at blue light or low frequency light, essentially light and health. JOH agreed to accept the role of this liaison.

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

JOH is a member of ASP, and noted their conference is roughly concurrent with this meeting. The ASP's journal published a special issue (DS6: this is Photobiol. Photochem. 97(3)) on UVC with most of the content free to download.

TC asked if we should be liaising with other similar Societies, e.g. European Society of Photobiologists (ESP), noting he would retire soon, so perhaps another would be suitable to take up the proposed liaison.

LS asked JOH about the value of liaisons; he noted Liaisons are only of benefit if someone is prepared to be a very active liaison. TC also noted Ann Webb is also very active in ESP and JOH noted Anthony Young is too, and had suggested a DNA action spectrum.

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

LP had not received this year's report, noting last year there had been no activity.

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

CEN TC169 WG8 has had no activity in the last year.

L6-10 IEC TC34 Photobiological Safety (John O'Hagan)

Using wording from the submitted activity report:

JOH reported that, although the liaison is recorded on the CIE system as with TC34/WG6 "Photobiological Safety", on the IEC system it is to the top level of TC34, along with Peter Blattner and Kathy Nield.

The project IEC 62778 ED1 "Assessment of blue light hazard of light sources and luminaires" was cancelled during the year and TC34/WG6 was closed. The work was transferred to a new Joint Working Group (JWG) 21, which is joint between IEC TC34 "Lighting" and IEC TC76 "Optical radiation safety and laser equipment".

The title of JWG 21 is "Photobiological safety of light sources and luminaires emitting visible light". CIE does not have formal liaison to this JWG.

A Committee Draft is in preparation: IEC 62471-7 "Photobiological Safety of Lamps and Lamp Systems – Part 7: Light Sources and Luminaires Primarily Emitting Visible Radiation". This is expected to be circulated for comments before the end of 2021.

JOH thought this would become a LR at CIE level under the new CoP, and the he does look after CIE level interests in this liaison already.

4.2 Dissolution of and changes to TCs and Reporterships

This was a standing item, and no dissolutions were proposed.

• 5 Other Division News

Division Officers

This was a standing item, and there were often no changes to the Division Officers.

Karl Schulmeister had given his notice to resign as ADD, so there would be a post open, and it would help to have some expertise related to photobiological safety.

A CIE Division 6 Research Strategy was proposed and how it relates to D6. These are presented below from the summary at the previous Division 6 meeting:

1. What light and dark daily pattern (intensity, spectrum, timing, duration) best supports well-being (younger/older)? (related to JTC 14, DR 6-46 and ICNIRP's work on circadian rhythms)
2. JTC 5 Review of IEC 62471/CIE S009 "Photobiological Safety of Lamps and Lamp Systems"
3. Eye-mediated effects of light beyond circadian rhythms, e.g. myopia (related to DR 6-47)
4. Horticulture lighting: terms & definitions (JTC 19), action spectra
5. Daylight based on vision and colour. Should the definition be updated to include NV effects?
6. Medical uses of light to treat skin conditions and hyperbilirubinemia (e.g. DR 6-43)
7. UV disinfection (e.g. TC 6-52)

AJS noted the above strategy is not to be confused with the D6 action plan, but contains what we ask external people to investigate.

TC voiced support for the inclusion of the effects of artificial light at night (DS6: i.e. on the environment, flora and fauna).

ML raise a point on the practical management of radiation advice, as many voices are talking about effects of IRR (infrared radiation) (IRA, IRB & IRC) and in the far IRR there are claims but little scientific evidence.

PS spoke to the topic of UVGI and raised the concern about it promoting mutagenesis. It was agreed there were very few publications on this, but AJS noted there were experienced researchers saying this is not an issue. TC added that light and UVR being physical agents, the initiation of mutations are much lower than through antibacterial, antiviral substances, etc. PS opinion was there was a need to quantify the risk, even if low, as the impact may be very high.

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

DMV, DMA and DA Division Members and Division Associates

ICSU International Council for Science

IESNA Illuminating Engineering Society of North America

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)



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



Canadian National Committee Comité national canadien

JTC Joint CIE Technical Committee

LR and DC Liaison Representatives and Division Correspondents

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 Relations office

NRC-MSS NRC Measurement Science and Standards portfolio

NRC-CONST NRC Construction portfolio

NRCan Natural Resources Canada

SCC Standards Council of Canada

TC CIE Technical Committee

Types of technical publications e.g. DRR and PS