



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

Canadian National Committee Comité National Canadien



CNC/CIE 70th Annual General Meeting

Proposed Agenda

DATE: Friday, Nov. 21, 2025

TIME: 11:30-14:30 EST [8:30 – 11:30 PST]

LOCATION: Online - Register for the meeting here: <https://forms.gle/z63dJHzvaH8uUASi7>

RSVP: Ali Ghaemi
Secretary, Canadian National Committee of the CIE
Email: CNC-CIE-Secretariat@nrc-cnrc.gc.ca

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

PROPOSED AGENDA: (see next page)



CNC/CIE 70th Annual Meeting 2025-Nov-21

Agenda

- | | |
|--|--------------|
| 1. Call to Order and Approval of Agenda | C. Suvagau |
| 2. Minutes of the 69th Annual CNC/CIE meeting | C. Suvagau |
| 2.1. Action items | |
| 2.2. Matters arising | |
| 3. President's report | C. Suvagau |
| 4. Vice-President's report | J. A. Veitch |
| 5. Secretary's report | A. Ghaemi |
| 6. Treasurer's Report | S. Coyle |
| 7. Reports from Division Members (short version) | |
| 7.1. Division 1: Vision and Colour | M. Brown |
| 7.2. Division 2: Physical Measurement of Light and Radiation | Li-Lin Tay |
| 7.3. Division 3: Interior Environment and Lighting Design | J.A. Veitch |
| 7.4. Division 4: Transportation and Exterior Applications | L. Asselin |
| 7.5. Division 6: Photobiology and Photochemistry | S. Qutob |
| 7.6. Division 8: Image Technology | R. Atkins |
| 8. CIE National Committee ballots for vote | |
| 8.1. Midterm 2029 location | |
| 8.2. New Governing Board member | |
| 8.3. CIE 2026 budget ballot | |
| 8.4. Free publication for 2026 | |
| 9. Membership and Elections | C. Suvagau |
| 9.1. Membership and Elections Subcommittees | J.A. Veitch |
| 9.2. M & E Subcommittee Membership | M. Mossman |
| 10.NRC Annual Performance Review of the CNC/CIE | M. Mossman |
| 11.Mirror committee to ISO/TC 274 | C. Suvagau |
| 11.1. Chair's report | J. A Veitch |
| 11.2. ISO/TC 274 Business | |
| 11.3. Membership | |
| 12.Ad hoc Subcommittees | |
| 12.1. Website Subcommittee | S. McFadden |
| 12.2. Code of Procedures Revision | M. Mossman |
| 12.3. Lighting Course Update | J. Hovis |
| 13.Other Business | C. Suvagau |
| 14.Next year's meeting | C. Suvagau/ |
| | J. A Veitch |
| 15.Adjournment | C. Suvagau |
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Action Items from the 69th Annual Meeting of the CNC/CIE

Action Item	Responsible	Action	Status	Comments
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	JAV: We already announce to Affiliates, but if Members know of other groups to whom we should send announcements, please inform me.
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	Ongoing
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	We could get a joint meeting with IES Vancouver
2022-AI-1	S. Coyle	S. Coyle will follow up with the CIE-CB about the missing wire transfer of funds from the CIE-CB account to the CNC/CIE account.	OPEN	Resolved. Funds (\$835.53 CAD) from CIE-CB deposited Dec 2023
2022-AI-3	S. Coyle	S. Coyle will contact TD Bank about the different products available (i.e., high interest savings account, GICs, etc.) to offset the cost of inflation.	OPEN	Ongoing
2023-AI-1	J.A. Veitch	By March 2024, select the Canadian Head of Delegation for the 2024 plenary meeting in Milan, Italy in late June.	OPEN	Done. Toby Lau represented Canada there.
2023-AI-2	J.A. Veitch	Meet the website developer by Dec, 8th, 2023, to discuss platform options	OPEN	Done. See Website subcommittee report.
2023-AI-3	J.A. Veitch	J. Hovis proposed to reflect on having the joint CORM-CNC/CIE-US/CIE meeting on even years, to avoid having it during the central CIE meetings. J.A. Veitch has an action item to discuss this idea with CORM and US/CIE partners.	OPEN	Jennifer has placed a call to US-CNC in Nov 2024. Nov. 26: They have responded. Now that we have an open line of communication with them, we can discuss this after Friday's AGM.



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CNC/CIE President's Report

Report to CNC/CIE 70th Annual Meeting
Online, November 21

Cristian Suvagau, Ph.D., P.Eng.

Email: cristian.suvagau@bchydro.com

1 Introduction

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

2 Highlights

2.1 NRC Annual Performance Review

In May, I had a web conference with Marta Farsang and Shannon Lynd from International Relations at the National Research Council regarding our annual performance review. No concerns were expressed.

2.2 Board of Administration activity

The CNC-CIE Board of Administration met 4 times in the past year online. We will try to continue this practice in the upcoming year. If an issue 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.

This year we have hold elections to fill board positions that were due:

- Ali Ghaemi replaces Livu Ivanescu as Secretary
- Li-Lin Tay replaces Livu Ivanescu as Division 2 member
- Anne-Marie Lemieux joins Lynn Asselin as Division 4 co-member

3 CIE Midterm Meeting (CIE 2025), in Vienna, Austria, July 4-12, 2025

3.1 Highlights

The CIE 2025 session was a resounding success:

- 4 - 5 July, 2025: CIE Statutory Bodies Meetings
- 6 July, 2025: CIE General Assembly
 - Jennifer Veitch has chaired the meeting
 - I represented CNC
- 7 - 9 July, 2025: CIE Scientific Conference
 - 430 persons from 40 countries attending the scientific conference
 - 87 oral presentations and 168 poster presentations
- 10 - 11 July, 2025: CIE Division & TC Meetings
 - 310 persons (of whom 240 were on-site) participating in the CIE's Division and TC Meetings program.

Technical – Dr. Tony Bergen, VP Technical noted that establishment of the Technical Management Board (in 2023) has led to a more cohesive interaction with Divisions and TCs leadership. However, CIE must continue to stay relevant by increasing interaction with external organization and better responding to important and emerging topics.

Publications - In 2025, publication prices were increased for the first time in many years. Regular price adjustments are an important strategy in managing a stable income from publication sales, relative to the CIE total income.

Education – Prof. Luoxi Hao, VP Education reported on the activity of the Standing Panel on Education (introduced in 2023). The SP Education is tasked with advancing global knowledge and expertise in light and lighting across academic professional and public sectors, promoting knowledge exchange, inclusive education and innovation through collaboration. It is effectively split into two distinct areas: academic education and professional education, each with separate aims. An academia survey will be distributed to better understand the needs of students and to plan targeted education initiatives.

Finances - The negative results of the years 2023 and 2024 have not shaken CIE's financial stability. CIE is aiming to increase its revenue streams and to stabilize the CIE income at a higher level (to reverse the deficits of 2023 and 2024) by promoting CIE publication sales income and visibility and strategic, long-time events planning). Also, GA approved to implement an index-based increase of the CIE's member dues (to account for inflation), starting in 2025. CIE will ask NC's to decide whether to finally cap the 2025 increase at 4% or whether to add another 1,32% (to be added to the 2026 invoices).

Governing Board and Central Bureau highlights

- Tony Bergen was officially nominated as President-Elect of CIE and is replacing the Past President, Peter Blater on the Governing Board.
- There were a few staff changes at the CIE Central Bureau. While Diana Wernisch continues as Secretary General, and Shahidul Islam continues as Technical Manager and Liaison Officer, the other appointments were:
 - Noemi Kolloch - Events and Science Programme Manager, Membership and Office Manager
 - Seda Gasparyan - Communications Officer,
 - Maria Avdokhina - Office Assistant.
- Voting Procedures for the Governing Board will open with nominations in December 2025 and must be completed by late November 2026.
- Voting for the 3 proposals for the 2029 Quadrennial Conference (NC Türkiye- Istanbul, NC Germany - Berlin, and NC South Africa - Cape Tow) needs to be completed in December 2025.

Other

Liviu Ivanescu was awarded a CIE Certificate of recognition in grateful appreciation for his services as CNC Secretary and Div. 2 representative.

The publication selected for distribution to the members was "Proceedings of the CIE 2023 Quadrennial – Ljubljana".

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

- Beside chairing a couple of sessions, Jennifer Veitch participated with a poster on lighting conditions in the homes of older adults.
- Lorne Whitehead, had a paper on algebraic & electromagnetic modelling of corneal spectral sensitivities using a single photopigment template.

3.2 Key CIE 2025 Publications:

- Position Statements
 - *Position Statement on Obtrusive Light and Light Pollution* - focuses on minimizing unwanted effects of outdoor lighting while maintaining visual amenity and safety
 - *Colour Quality Metrics (2nd Edition)* - Updates guidance on colour rendering metrics, recommending adoption of the CIE General Colour Fidelity Index (Rf)
- Technical Reports
 - *Measurement of Human Skin Colour* - provides a standardized framework for measuring and reproducing skin colour across scientific and industrial applications.

- *The Functional Visual Field* - reviews studies on human visual fields and their role in sensory functions and visual tasks.
- Proceedings of the CIE 2025 Midterm Meeting (Vienna, July 4–11, 2025)

Outreach Webinars (recordings available on CIE website)

- *CIE Research Webinar: CIE research Strategy 2023-2027*- April 10
- *How does light affect human health? From biology to application* - May 16 (International Day of Light)
- *Lighting Education Across Borders: Insights from Europe and Asia*- June 13
- Special project: “*Understanding Science – Understanding Light*”, funded by the Vienna Business Agency, focuses on two key topics: “Light Pollution” and “Light and Health” through public lectures, workshops, and other activities from 1 January, 2025 to 30 June, 2026
- Informative Q & A session – December 2

4 Other CNC Business

4.1 Other events:

- 2025 Plenary meeting of ISO/TC 274- Light and Lighting in Montreal at McGill University, June 6
 - Conor Sampson was instrumental to organise this event hosted by Standards Council of Canada (SCC) and the McGill University
 - Jennifer Veitch had also participated
- 2025 CORM and CIE joint annual conference with USNC and CNC online- November 18-20
 - New this year was the decision to integrate the CIE division reports within the overall presentation (30 in total). This way, after an opening presentation from Jennifer as CIE President, the joint USNC and CNC Division presentation were set to represent and led the technical sessions.

4.2 Future events:

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

4.3 Public Presentations by CNC members

Jennifer veitch

- Events under the “Understanding Science Understanding Light” series of events (Jan 1 2025- 30 June 2026) focused on light pollution and light and health:
 - “How does light affect human health? From biology to application”- May 16 -International day of light co-presented with Prof. Dr. Manuel Spitschan from TU Munich

Lorne Whitehead

- “Proposed revision of SI unit classifications: how the candela, mole, kelvin differ conceptually from the base units of kilogram, meter, second, ampere” - European Journal of Physics
- “Warm versus cool colors and their relation to color perception”- Journal of Vision

4.4 Other business

- Cristian Suvagau and Jennifer Veitch engaged with USNC, CB-CIE and BD-IES in a constructive dialogue (series of meetings) to develop a closer and effective partnership between CIE and IES.

Finally, I thank everyone for their help, participation, and ideas this year. On behalf of the CNC-CIE, we hope everyone stays safe and healthy.

**CNC/CIE Vice-President's Report
November 2025**

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 six tasks.

1. I served as Chair of the Canadian mirror committee to ISO/TC 274. This year that included assisting with the logistics of hosting the international plenary meeting of ISO/TC 274 in Montreal in early June. Further details of this committee's work will be discussed during this meeting under MC-ISO-TC 274 business.

2. I initiated and led an outreach activity with an association table at the Canada Light Expo in Toronto, Nov. 12-13. Thanks to Shirley Coyle for the introduction to the show organizers.

I obtained CIE materials from the Central Bureau in Vienna (a large postcard with our logo and contact details, and the 8-page CIE brochure), and had them printed at no charge by the National Research Council of Canada. I also took print copies of CIE Position Statements and the Research Strategy and developed a "fast facts" document (attached) as a takeaway.

I travelled to Toronto for the first day of the show and was backed up on the second day by Shirley Coyle. While there, I introduced us to several small Canadian lighting manufacturers who had been unaware of our existence. It may take some time for this initiative to bear fruit in the form of new Affiliates or Members, but I view it as critical to our long-term development of a Canadian lighting community and new participants for our activities.

3. I assisted the President to represent the CNC/CIE in the organization of the online joint USNC-CNC/CIE – CORM conference, Nov. 18-20.

4. 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.

5. I assisted as needed to support the President, Secretary/Administrator, and Treasurer in the ongoing work of CNC/CIE business. This includes monitoring the CNC/CIE mailbox when the Secretary/Administrator is unavailable, confirming that our procedures (e.g., for ballots) follow our operating guides, and contributing to various discussions.

6. I contributed to the preparation of input to the annual performance report (APR) to the NRC International Innovation Office, which was led by the President.



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Fast Facts about the CNC/CIE

- The CIE is the “United Nations” of lighting: National Committees are its voting members.
- The Canadian National Committee of the CIE is Canada’s member in the CIE.
- The Government of Canada, through the National Research Council of Canada, pays Canada’s dues to the CIE.
- Individuals and companies resident in Canada pay no fees to be affiliated with the CNC/CIE.
- Affiliation connects you to the Canadian lighting community and to receiving CIE news.
- Full Membership in the CNC/CIE requires a commitment to active participation in the work (but no fees or dues).
- Members of the CNC/CIE have access to the 67.67% discount code for CIE publication purchases and reduced rates for registration in CIE events.
- Companies and organizations may also join the CIE as Supportive Members, and receive additional benefits.
- The CNC/CIE administers Canada’s mirror committee to ISO/TC 274 Light and Lighting.
- For more information: visit our website at <https://www.cnc-cie.ca> (QR code above), or e-mail us at CNC-CIE-Secretariat@nrc-cnrc.gc.ca.



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Faits rapides sur le CNC/CIE

- Le CIE est les "Nations Unies" de l'éclairage : les Comités nationaux en sont les membres votants.
- Le Comité national canadien du CIE est le membre du Canada au sein du CIE.
- Le gouvernement du Canada, par l'intermédiaire du Conseil national de recherches du Canada, paie les cotisations du Canada au CIE.
- Les particuliers et les entreprises résidant au Canada ne paient aucun frais pour être affiliés au CNC/CIE.
- L'affiliation vous connecte à la communauté canadienne de l'éclairage et à la réception des nouvelles du CIE.
- La pleine adhésion au CNC/CIE nécessite un engagement à participer activement aux travaux (mais aucun frais ni cotisation).
- Les membres du CNC/CIE ont accès à un code de réduction de 67,67 % pour l'achat de publications du CIE et à des tarifs réduits pour l'inscription aux événements du CIE.
- Les entreprises et organisations peuvent également adhérer au CIE en tant que membres de soutien et recevoir des avantages supplémentaires.
- Le CNC/CIE administre le comité miroir du Canada auprès de l'ISO/TC 274 Light and Lighting.
- Pour plus d'informations : visitez notre site Web à l'adresse <https://www.cnc-cie.ca> (code QR ci-dessus), ou envoyez-nous un courriel à CNC-CIE-Secretariat@nrc-cnrc.gc.ca.

CNC/CIE Secretary's Report November 2025

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

I have acted as the CNC/CIE Secretary since June 2025. The following tasks cover the entire period since the last CNC/CIE Annual General Meeting on the 29th of November 2024.

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 2024/25 were:
 - i. NC2501 Selection of a CIE publication for distribution by NCs and ANCs in 2025: publication CIE x050:2023 Proceedings of the 30th Session of the CIE, Ljubljana, Slovenia, September 15 - 23, 2023 was selected and uploaded to the CNC/CIE website for access to members.
 - ii. Ballot on IS/CIE FDS 8995-1:2024 (NC2411) "Light and lighting – Lighting of workplaces – Part 1:Indoor" (NC2411). Voted for approval. For MC/ISO TC 274 voted 'approve with corrections' with comments submitted.
 - iii. LBs NC2413, TMB2418, D03-2404 Ballot on ISO/CIE DIS 15469:2024 "Spatial distribution of daylight – CIE standard general sky" (NC2413). Voted for approval.

- 3- **Annual Performance Review of the CNC/CIE:** The president provided the completed APR questionnaire to report on the 2024 calendar year to the International Innovation Office of the National Research Council on March 24th 2025.
- 4- **Requests for Funding:** There was approval for providing \$5000.00 toward the hosting of the ISO/TC274 meeting in Montreal in June. The CNC/CIE received \$2000.00 in sponsorship from industry during the meeting. The final reimbursement for expenses incurred totaled \$7450.73, \$450.73 above the original commitment.

- 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 (42), Affiliates (62), Board of Administration (13) and All (104). 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.
- 7- **AGM minutes:** Minutes of the 69th CNC/CIE Annual General Meeting 2024 were circulated in August 2025 to the members and were approved.



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CNC/CIE Treasurer's Report to the CNC/CIE 70th Annual Meeting

21 November 2025

The financial statement for the period 31 Oct 2024 to 31 October 2025 is presented below.

		Income	Expense	Balance
31-Oct-24	Opening Balance			\$ 27,702.76
	Income			
28-Jul-25	Sponsorship payments (ISO/TC274 Montreal event)	\$ 2,000.00		
	Total Income	\$ 2,000.00		
	Expenses			
22-Mar-25	Chq#16 - Website update Phase 1 (William Ratke)		\$ 271.20	
15-Aug-25	Chq#17- Reimb ISO/TC274 expenses (Jennifer Veitch)		\$ 6,250.73	
15-Aug-25	Chq#18 - Reimb ISCO/TC274 expenses (Nicolea Apostolidis)		\$ 1,200.00	
20-Oct-25	Chq#19 - Website (William Ratke)		\$ 1,310.80	
	Total Expenses		\$ 9,032.73	
	Net Income for entire period is \$2000.00			
31-Oct-25	Ending Balance			\$ 20,670.03

Respectfully submitted,

Shirley Coyle
Treasurer, CNC/CIE
scoye6889@gmail.com



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Division 1: VISION AND COLOUR

Report to CNC/CIE 69th Annual Meeting
National Research Council of Canada
1200 Montreal Road, Ottawa, Ontario K1A 0R6 Canada
Zoom Web Conference
Friday, Nov. 21, 2025
11.30AM to 2:30 PM EST

Michael S. Brown
Email: mbrown@yorku.ca

1. Introduction

The annual Division 1 Meeting was held on July 11, 2025, Vienna, Austria and online through Webex. The meeting was attended by 54 people (37 in person) from 15 countries. Minutes can be found at the Members Section of the CNC-CIE website.

Officers were

Division Director	Kaida Xiao (GB)
Associate Director – Vision	Yoko Mizokami (JP)
Associate Director – Colour	Aditya Sole (NO)
Division Editor	Peter Hanselaer (BE)
Division Secretary	Li-Chen Ou (TW)

2. Highlights

The following was compiled by attendee Michael S. Brown (Canada) and Yoshi Onho, and from minutes of the Director's report.

Items	
Existing activities in 2025	4 TCs are finished with TC reports published (TC 1-84, TC 1-91, TC 1-98), TC 1-92 calculation tool to be published. 1 JTC is closed without report (JTC 17) 1 reportership is closed with report (R 1-63)
New activities in 2025	1 new TC was established (TC 1-104) 1 new JTC proposal is received (approved) 3 new reporterships were established 4 new reporterships proposals are received 2 new Liaisons were established (L 1-11 ISO TC 130, L 1-12 ICC)
2025 Calls	Call for nomination - New Associate Director (Liaison and standard) Call for volunteers - New Expert group
Colour Research and Applications (D1)	Special issue for CIE Mid-term meeting and D1 related topic
Upcoming Events	1. Workshop (potentially to be co-organised with ICC (expert day) 2. Visual appearance symposium (D1 & D2) planned in 2027

2.1 New Technical Committees and Reporterships

1. TC1-104 (C)

Title: Verification of the physiologically relevant CIE 2006 LMS cone fundamental CMFs and their linear transformation the 2015 XYZ CMFs [Status – In progress]

Chair: Andrew Stockman (US)
No CA members

2. New JTC (C)

Title: Optimal CMFs for display color consistency [Status – Preparing ToR]

Chair: Francisco Imai (US)
- Michael S. Brown asked to join (accepted)

3. New Reporterships in 2025 (Table format)

New Work Item	Reporter	Title	Results
DR proposal (V)	Jiaye (Jane) Li FR	Revisiting flicker metrics	Request to review ToR
DR proposal (C)	Jiaye (Jane) Li FR	Colour rendition database	May form new TC
DR proposal (C)	Yan Lu CN	Memory skin colour and its acceptability boundaries	Establish new DR
DR proposal (C)	Kaida Xiao GB	Unique Hue Data	Establish new DR

2.2 Division publications (2025)

1. CIE 255:2025 The Functional Visual Field, from TC1-84 (Nana Itoh [JP] chair)
2. CIE 254:2024 A roadmap toward basing CIE colorimetry on cone fundamentals, from TC1-91 (Lorne Whitehead [CA] chair)
** Canadian Chair
3. CIE 253:2024 Overview of Methods for Evaluating Colour Rendition of White-light Sources beyond Colour Fidelity (Yandan Lin [CN] chair)

2.3 Future meetings

2026 D1 Meeting, Gjøvik, Norway, September 2026.

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

3. Current Canadian participation in Division 1 activities

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

Activity	Title	Canadian Members
JTC (D8)	Optimal CMFs for display color consistency	Member, Michael S. Brown (Ballot approved – Oct 30, 2025) (ToR in preparation)
TC1-103	Research Methods for Psychophysical Studies of Discomfort from Glare	Member, Jennifer Veitch

4. Highlights of the Division Work Programme

4.1 Overview of the status of TCs and Reporterships

4.1.1 Current Technical Committees

TC	TC Chair	Title	Status	Est.	Activity	Comment
TC1-92 (C)	Kaida Xiao	Skin colour database	AD approved	2013	2024	<i>To publish TR</i>
TC1-95 (C)	Minchen Wei	The validity of the CIE whiteness and tint equations	WD in progress	2015	2021	<i>WD1 edited. Voting 2025.</i>
TC1-96 (C)	Ronnier Luo	Advances in colour appearance models	CD	2015	2024	<i>Compete revised CD2.</i>
TC1-99 (C)	Ronnier Luo	Modeling two-dimensional colour appearance scales	WD in progress	2020	2024	<i>Extended 2 years</i>
TC1-100 (C)	Ronnier Luo	To recommend CAM16-UCS as the CIE uniform colour space	WD in progress	2023	2024	<i>CB target 2025.</i>
TC1-101 (V)	Sei-ichi Tsujimura	Influence of ipRGCs on brightness perception	WD in progress	2023	2024	<i>First draft circulated within TC</i>
TC1-102 (C)	Changjun Li	Method for calculating CIE tristimulus values	WD in progress	2023	2024	<i>Writing TR.</i>
TC1-103 (V)	Steve Fotios	Research methods for psychophysical studies of discomfort from glare	WD in progress	2024	2024	<i>Draft report started</i>
TC1-104 (C)	Andrew Stockman	Verification of the physiologically relevant CIE 2006 LMS cone fundamental CMFs and their linear transformation the 2015 XYZ CMFs	WD in progress	2025	-	<i>In progress</i>

4.1.2 Current Joint Technical Committees (D1 related)

TC	TC Chair	Title	Status	Est.	Activity Report	Comment
JTC12 (V) (D2/D1/D8)	Alejandro Ferrero	The measurement of sparkle and graininess	WD in progress	2018	2024	<i>Draft ballot targeted in 2025.</i>
JTC16 (C) (D1/D8)	Minchen Wei→Shining Ma	Validity of chromatic adaptation		2018	-	<i>Chair changed to Shining Ma. TR in 2026.</i>
JTC17 (D1/D2/D8)	Frédéric Leloup	Gloss measurement and gloss perception – a framework for the definition and standardization of visual cues to gloss.	Closed	2019	-	<i>Closed without TR.</i>

4.1.3 Current Reporterships

DR	Reporter	Title	Est.	Report	Comment
DR1-60 (C)	Ruili He	Future colour-difference evaluation	2013	2024	In-progress (target journal)
DR1-64 (C)	Changjun Li	Real colour gamut	2015	2024	Report complete. Close next meeting.
DR1-67 (C)	Youngshin Kwak	Revisiting correlated colour temperature	2016	2024	Voted to close (2025)
DR1-69 (V)	Shao-Tang Hung	Applicability of metrics for evaluating reflected glare on displays	2017	2024	Report target 2026
DR1-70 (C)	Jisoo Hwang	Visual assessment methods of perceptual colour shifts in highdynamic- range (HDR) luminance conditions	2020	2024	Report target 2026
DR1-72 (C)	Luke Hellwig	Developments in colour appearance research and models	2024	-	In progress
DR1-73 (V)	Ashraf Maliha	Modelling contrast sensitivity functions across a large parameter space	2024	2024	Report target 2026
DR1-74 (C)	Shining Ma	Corresponding colour datasets for 3D objects	2024		In progress

4.2 Dissolution of and changes to TCs and Reporterships

1. JTC17 (D1/D2/D8) - Gloss measurement and gloss perception – a framework for the definition and standardization of visual cues to gloss. [Closed, 2025]
2. DR1-67 (C) - Revisiting correlated colour temperature [Vote to Close, 2025]
3. Change of TC Chair of TC1-100 from Ronnier Luo to Luke Hellwig
4. Extension of TC1-100 activities until 2027-12-31

5. Other Division News

New members

Country	Old member		New member
Austria	Heinz Grösswang	→	Karl Schulmeister
Norway	Jan Henrik Wold	→	Aditya Sole
South Africa	Pieter du Toit	→	Irma Rabe

6. Thank you

I attended my first CIE scientific conference and Division 1 meeting. Many thanks to Yoshi Ohno for helping me with preparing the Division 1 Joint CNC- USNC CIE Meeting report.



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



Canadian National Committee Comité national canadien

Division II: Physical Measurement of Light and Radiation

Report to 2025 CNC/CIE Annual Meeting
Virtual Meeting, Nov. 18th, 2025

Li-Lin Tay
Email: lilin.tay@nrc-cnrc.gc.ca

1 Introduction

The 2025 annual meeting of CIE Division 2 (D2) was held in conjunction with the CIE Midterm conference on July 11th, 2025 in Vienna, Austria. Although Li-Lin was in Vienna for parts of the CIE midterm conference and the CCPR working group meeting, she had to return early due to illness. She attended the Division 2 meeting remotely to this meeting through Webex.

2 Highlights

2.1 New Technical Committees and Reporterships

Two new TCs were proposed during the D2 meeting.

A new TC (TC2-XXX) on the “Equivalence measures for scalar and vectorial quantities in photometry” will be chaired by Udo Kruger (DE)

A second new TC (TC 2-XXX) on the “Roadmap for measurement uncertainty training” will be chaired by Dong Hoon Lee (KR)

2.2 Division publications

CIE S 027:2024, Photometry of road illumination devices, light-signalling devices and retroreflective devices for road vehicles (by TC 2-67)

ISO/CIE 23539:2023 Photometry — The CIE system of physical photometry

- from TC 2-93; TCC: Anders Thorseth (DK)

ISO/CIE TR.3092.2023 Light and lighting — Energy performance of lighting in buildings — Explanation and justification of ISO/CIE 20086

CIE 251:2023 LED Reference Spectrum for Photometer Calibration

- from TC 2-90; TCC: Tuomas Poikonen (FI)

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

- from JTC 19 (D6/D2); TCC: Paul Dekker (NL)

2.3 Future meetings

The next CIE D2 meeting will be held in conjunction with both CCPR working group meetings and the NEWRAD conference in Sep. 2026 at Jeju, South Korea. Dates to be determined.

3 Current Canadian participation in Division 2 activities

Name	Participation
Luke Sandilands	TC 2-94 (member)
Joanne Zwinkels	TC2-90 (member)
Joanne Zwinkels, T. Nilsson	TC 2-93 (member)
Luke Sandilands	TC 2-98 (member)
Joanne Zwinkels	JTC-08 (member)
Luke Sandilands	Liaison 2-06 to ISO/TC 6: Paper, Pulp and Board
Li-Lin Tay	D2 (Member)
Joanne Zwinkels	D2 (Associate Division Member)
Tim Moggridge	TC2-59 (member)

4 Highlights of Division Work Programme

4.1 Overview of the status of TCs and Reporterships

At the very least this should include a list of Active TCs and provide a link to a current set of minutes or Activity Report. It can also include a summary of the progress of some or all of the TCs and reporterships. The summary should highlight anything of potential relevance to CNC/CIE members.

4.1.1 TCx-xx: Title (chair)

- TC 2-62 Imaging-Photometer-Based Near-Field Goniophotometry (Knut Bredemeier) (preparing for CD ballot)
- TC 2-67 Photometry of lighting and light-signaling devices for road vehicles (Thomas Reiners). Closed with a publication.
- TC 2-68 Optical Measurement Methods for OLEDs used for Lighting (Hiroshi Shitomi) (in WD ballot)
- TC 2-77 Fundamental Concepts (Tony Bergen)
- TC 2-78 The Goniophotometry of Lamps and Luminaires (Tony Bergen). (ED ballot)
- TC 2-79 Integrating sphere photometry and spectroradiometry (Dong-Hoon Lee). (ED ballot)
- TC 2-81 Update of CIE 065:1985 (Absolute Radiometers) (Geiland Porrovecchio) (preparing for WD ballot)

- TC 2-84 Recommendations on LED package test data reporting (Andras Poppe). (in ED ballot)
- TC 2-85 Recommendation on the geometrical parameters for the measurement of the Bidirectional Reflectance Distribution Function (BRDF) (Lou Gevaux)
- TC 2-86 Glare Measurement by Imaging Luminance Measurement Device (ILMD) (Jan Wienold) (Urgent TC)
- TC 2-89 Measurement of Temporal Light Modulation of Light Sources and Lighting Systems (Qian Li). (preparing for CD ballot) (Urgent TC)
- TC 2-91 Optical measurement methods of LED packages and LED arrays (Markus Schneider). (for ED ballot)
- TC 2-94 Measurement of total transmittance, diffuse transmittance and transmittance haze (Hsueh-Ling Yu)
- TC 2-95 Measurement of obtrusive light and sky glow (Constantinos Bouroussis)
- TC 2-96 Revision of ISO/CIE 19476:2014 Characterisation of the performance of illuminance meters and luminance meters (Armin Sperling) (Urgent TC)
- TC 2-97 Revision of CIE S 025/E:2015 Test Method for LED Lamps, LED Luminaires and LED Modules and its supplement (Anders Thorseth)
- TC 2-98 Revision of CIE 130-1998 Practical Methods for the Measurement of Reflectance and Transmittance The chair Catherine Cooksey (US) has resigned, the proposed new chair is Tatjana Quast (DE)
- TC 2-99 Standard File Format for Electronic Transfer of Optical Radiation Data for Luminaires, Lamps and LED modules (Danilo Giannetti)
- TC 2-100 Software Validation Spectra, Derived Quantities and Metrics (Kevin Smet)
- JTC 01 (D4/D1/D2), Implementation of CIE 191:2010 Mesopic Photometry in Outdoor Lighting, Stuart Mucklejohn (GB). (ED ballot)
- JTC 08 (D1/D2/D3/D4/D6/D8), Terminology in light and lighting, Peter Zwick (DE).
- JTC 12 (D2/D1/D8), The measurement of sparkle and graininess, Alejandro Ferrero (ES).
- JTC 17 (D1/D2/D8), Gloss measurement and gloss perception: A framework for the definition and standardization of visual cues to gloss, Frédéric Leloup (BE). Closed without a publication.
- JTC 20 (D6/D2), Wearable alpha-opic dosimetry and light logging methods, limitations, device calibration and data schemes, Manuel Spitschan (DE).
- JTC xx (D8/D2), Data representation space for spectral imaging, Jean-Baptiste Thoms (FR), Qian Li (CN). (New)

4.2 Dissolution of and changes to TCs and Reporterships

- **DR 2-64**, Review of Draft TC 2-28 in preparation of archiving it as a D2 internal report, **Edwin Mofokeng**. (closed due to no progress)
- **DR 2-69**, TN on the validation of a near-field goniophotometer in support of CIE S 025, **Johannes Ledig**.
- **DR 2-80**, Metrology of laser-based lighting, **Anders Thorseth**.
- **DR 2-81**, Flash effective intensity calculation, **Dennis Couzin**.
- **DR 2-82**, TN on clarification of the difference between adjustment, calibration and verification, **Thiago Menegotto**.
- **DR 2-87**, Terminology in single/few photon metrology, **Dong-Hoon Lee**. (for ED ballot).
- **DR 2-91**, Appropriate calibration and use of UV radiometers, **Tony Bergen**.

- **DR 2-93**, Implementing CIE198-SP2 using Monte Carlo Simulations, **Udo Kruger**. (closed with a new TC proposal)
- **DR 2-94**, Uncertainty evaluation of spectral integrals, **Erkki Ikonen**.
- **DR 2-xx**, Role of standard air in the field of CIE photometry, **Tobias Schneider**. (new)

5 Other Division News

The division is planning for a tutorial on the “New LED reference spectrum, L41, for photometer calibrations” and a joint Division 1 and Division 2 symposium on the visual appearance.

The 2027 D2 meeting will take place in conjunction with the 31st CIE Quadrennial meeting in Nanjing, China to be held during July 9 – 17, 2027



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Division 3: Interior Environment and Lighting Design

Report to CNC/CIE 70th Annual Meeting
Online, 2025-Nov-21

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

1 Introduction

The 2025 meeting of Division 3 was held in Vienna on July 10, 2025. I represented Canada in person at this meeting. The minutes will be available to CNC/CIE Members on the Members area of the website when they have been approved; the draft has not yet been sent to me as of this writing.

2 Highlights

2.1 New Technical Committees, Reporterships, and Other Activities

DR 3-3x	<i>Perception and Metrics of Spatial Brightness in Architectural Environments</i>	Mika Kato [JP]	Currently being balloted for approval
RF-10	Towards a global discomfort glare database development and discomfort glare model advancement	Sneha Jain (Convenor)	Newly created; collecting members.

2.2 Division publications

Since the last CNC/CIE report in November 2024, D3 has completed three publications, all joint international standards with the International Organization for Standardization (ISO):

ISO/CIE 8995-1:2025(en) Light and lighting — Lighting of work places — Part 1: Indoor

ISO/CIE 10916:2024 Light and lighting — Energy performance of lighting in buildings — Calculation of the impact of daylight utilization

ISO/CIE DIS 15469:2024(en) Spatial distribution of daylight — CIE standard general sky

2.3 Future meetings

2026: Online

2027: July 9-17, Nanjing, China

3 Current Canadian participation in Division 3 activities

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

Activity	Title	Canadian Members
JTC-13	Depreciation and Maintenance of Lighting Systems	Don McLean (Member)
TC 3-59	The integration of daylight and electric lighting – photometric, colorimetric and radiometric requirements for the spectral design of indoor lighting	Deborah Gottesman (Member)
TC 3-60	Spectral daylight characteristics	Lucas Wen Tang (Member)
TC 3-62	Resilient Lighting	Andrew Silbiger (Member)
RF-02	Matters Relating to Temporal Light Modulation	Jennifer Veitch, Sarah Morgan (Members)
RF-10	Towards a global discomfort glare database development and discomfort glare model advancement	Sneha Jain (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.

<i>ISO/TC 274-JWG 1 [CIE JTC 6] (CIE-ISO)</i>	<i>Energy performance of lighting in buildings</i>	<i>T. Lau</i>
<i>ISO/TC 274 JWG 2</i>	<i>Commissioning process of lighting systems</i>	<i>T. Lau</i>
<i>ISO/TC 163</i>	<i>Liaison representative from ISO TC 163 to ISO TC 274</i>	<i>T. Lau</i>
<i>ISO/TC205</i>	<i>Alternate liaison representative from ISO/TC 274 to ISO/TC 205</i>	<i>T. Lau</i>
<i>ISO/TC 205/WG7</i>	<i>Liaison representative from ISO/TC 274 to ISO/TC 205/WG7 Integration of nature and biodiversity in building design</i>	<i>C. Sampson, until Oct. 2024</i>
<i>ISO/TC 205/JWG 12</i>	<i>Co-Convenor Joint ISO/TC 205 - ISO/TC 274 WG: Indoor Visual Environment</i>	<i>C. Sampson, until Oct. 2024</i>
<i>ISO/TC205/WG10</i>	<i>Liaison representative from ISO TC 274 to ISO TC 205/WG10</i>	<i>T. Lau</i>

4 Highlights of Division Work Programme

4.1 Division 3 Strategy

The current Vice-President Technical has asked Divisions to develop and to maintain a strategy document to identify the directions in which their work should go. Key areas of focus for D3 at this time are the following. **Boldface** is used to indicate areas that are currently represented among D3 activities.

Overarching themes:

- **Diversity**
- Digital transformation
- Open access to research data

Topical themes:

- **Spatial brightness and distribution**

- **Unified glare metrics**
- ipRGC-influenced responses to light
- Daylighting metrics and calculation methods

Specific themes:

- **Resilient** / emergency lighting

The Division Director highlighted the absence of work in D3 on ipRGC-influenced responses to light as a particular gap that he would like to see filled. Engaging young researchers is also a goal for 2026, to refresh Division participation.

4.2 Overview of the status of TCs and Reporterships

Reports on each TC are available as part of the meeting minutes available to CNC/CIE Members at www.cnc-cie.ca.

Activity	Title	Chairman	Status
JTC 6 (CIE-ISO)	Energy Performance of Lighting in Buildings	Laura Bellia [IT]	This JTC has an ongoing life as new work items are created through the ISO system. Drafts for TRs related to BIM for daylight louver system and to BSDF data generation have been reviewed in ISO/TC 274 and CIE D3.
JTC 8 (all Ds)	Terminology	Peter Zwick [DE]	Procedures for ongoing maintenance of the vocabulary are being implemented, but might need revision for faster responding.
JTC 13 (D4/D3)	Depreciation and Maintenance of Lighting Systems	Dionyz Gasparovsky [D4] & Naoyuki Suzuki [D3]	Meeting held in Vienna with new membership. Target is a complete WD in June 2026.
JTC 18 (D3/D4)	Lighting Education	D3: Mandana Khanie [GB]	Collection of information nearly complete; parallel development of WD ongoing.
TC 3-58	Visual ergonomics and digital display use	P. Thorns [UK]	ED ballot was passed in March 2025. Now in final editing before publication.
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]	Complete WD with committee.
TC 3-60	Spectral daylight characteristics	Martine Knoop [DE]	Round robin data collection and processing continues. A paper was presented at CIE 2025 on this work.
TC 3-61	Review of regional daylight requirement to assess the feasibility of global harmonization	C. Amorim [BR]	Complete WD said to be with committee for review. Conference papers on interim findings have been presented, including at CIE 2025.
TC 3-62	Resilient Lighting	Yuki Akizuki [JP]	First WD with committee for review.

Activity	Title	Chairman	Status
TC 3-63	Decision scheme to determine lighting requirements for indoor environments	Anna Pellegrino [IT]	Work has been assigned to TC members, with the first outline of the decision scheme planned for December 2025.
DR 3-38	Evaluation of the Impact of Lighting Environment on the Perception of Spaciousness	Hiroyuki Miyake [JP]	Literature collected; review in progress.
DR 3-39	Emergency Lighting	Michael A. Myers [US]	Contact with Mr. Myers has been lost. This DR might need to be closed.
DR 3-37	Use of VR for lighting research on indoor spaces	Kynthia Chamilothori [NL]	Term was extended because of maternity leave; report to be complete early in 2026.
DR 3-3x	<i>Perception and Metrics of Spatial Brightness in Architectural Environments</i>	Mika Kato [JP]	Currently being balloted for approval
RF-02	Matters Relating to Temporal Light Modulation	N. Miller [US]	Ongoing. Several subgroups have been created to address terminology questions and to consider possible new TC proposals.
RF-10	Towards a global discomfort glare database development and discomfort glare model advancement	Sneha Jain (Convenor)	Newly created; collecting members.

4.3 Dissolution of and changes to TCs and Reporterships

JTC 15	Lighting of Indoor Workplaces	Jennifer Veitch (Member), Lorne Whitehead (Member)	Closed. ISO/CIE 8995-1:2025 was published.
TC 3-57	Generic Discomfort Glare Sensation Model	G. Vissenberg [NL]	Closed because the TCC stepped down and no replacement was available.

4.4 Liaison representatives (LRs)

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

Activity	Partner committee	Representative	Update
L 3-02	ISO/TC 159/SC 4 Ergonomics of Human-System Interactions	Shahidul Islam Diana Wernisch	
L 3-03	ISO/TC159/SC 5 Ergonomics of the Physical Environment	Peter Thorns	
L 3-04	ISO/TC 163/SC 2 Thermal Performance and Energy Use in the Built Environment / Calculation Methods (Daylight)		
L 3-05	ISO/TC 205/WG 7 Indoor Visual Environment	Michail Papanikolaou	

Activity	Partner committee	Representative	Update
L 3-09	CEN/TC169/WG2 Lighting of Work Places	Tapio Kallasjoki	
L 3-10	CEN/TC169/WG11 Daylight	Jan Wienold	A PWI is under development. Among the chief questions is balancing ambitious daylighting goals with what policymakers will accept.
L 3-11	CEN/TC169/WG3 Emergency Lighting in Buildings	Peter Thorns	
L 3-12	CEN/TC169/WG9 Energy Performance of Buildings	Peter Thorns	
L 3-13	ISO/TC163/WG4 Joint ISO/TC 163 - ISO/TC 205 WG: Energy performance of buildings using holistic approach	Laura Bellia	ISO/CIE 20086 will be moved to the ISO 52000 series and the Vienna Agreement used to create a single EN ISO/CIE document to replace ISO/CIE 2086 and EN 15193-1.
L 3-14	ISO/TC160/Glass in buildings	Peng Xue	
L 3-15	ISO/TC 274 (AHG) 1 "Daylight"	Cláudia Naves David Amorim Anna Pellegrino Hiroyuki Miyake	
DC 3-01	Illuminating Engineering Institute of Japan	Yoshiki Nakamura	
DC 3-02	International Dark-Sky Association	Terry K McGowan	

5 Other Division News

The leaders continue for the rest of the term:

Division Director: Prof. Nozomu Yoshizawa [JP]

Associate Director – Electric Lighting: Dr. Adrie de Vries [NL]

Associate Director – Daylighting: Prof. Anna Pellegrino [IT]

Division Secretary – Dr. Cláudia Naves David Amorim [BR]

Division Editor – Dr. Veronica Garcia-Hansen [AU]

Division 3 is considering organizing a CIE Symposium on Glare, possibly in 2026 or perhaps not until 2028. No other details are yet available.

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 Report



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



Canadian National Committee Comité national canadien



CNC/CIE 70th Annual General Meeting

Webinar, November 21, 2025

Lynn Asselin – CNC

Ronald Gibbons - USNC

Division 4 Officers

- **Director:** Dionyz Gasparovsky (SK)
- **Associate Director:** Steve Fotios (GB) - Fundamentals in outdoor lighting
- **Associate Director:** Jerome Fehon (BE) – Tunnel Lighting Evolution
- **Associate Director:** Sermin Onaygil (TR) - Exterior applications
- **Division Editor:** Nigel Parry (GB)
- **Division Secretary:** Steve Lau (CN)
- Country Members:
 - Canada - Lynn Asselin Vancouver, BC & Anne-Marie Lemieux Montreal, QC(Proxy)
 - United States - Ronald Gibbons Virginia Tech, University of Virginia, USA

2025 Division Activities

- **2024 - Shanghai (CN)** – Symposium: New Directions in Research and Development of Road Lighting and Urban Lighting – within the mid-term meeting - 09.-13.05.2024
- **2025 Vienna (AT)** CIE Mid-term Meeting (incl. workshops) -04.-12.07.2025

Division Publications in 2025

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

- 0 new publications
- 10 publications expired before 2025; subject to review in 2026
- 14 publications are marked as “current”
- 4 publications are prepared or suggested for revision
- 4 publications are proposed for archival / withdrawal
- 6 publications have pending reviews
- 4 publications are due to review in 2026
- 2 publications recommended to extend status

Division Publications in 2025

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

- CIE 243:2021 - Discomfort Glare in Road Lighting and Vehicle Lighting
- CIE 083:2019 - Guide for the Lighting of Sports Events for Colour Television and Film Systems, 3rd Edition Effects of Obtrusive Light from Outdoor Lighting Installations)
- ISO/CIE 8995-3:2018(E) - Lighting of Work Places – Part 3: Lighting Requirements for Safety and Security of Outdoor Work Places
- CIE 236:2019 - Lighting for Pedestrians: A Summary of Empirical Data
- ISO/CIE TS 22012:2019(E) - Light and Lighting — Maintenance Factor Determination — Way of Working
- CIE 140:2019 - Road Lighting Calculations, 2nd Edition
- CIE 150:2017 - Guide on the Limitation of the Effects of Obtrusive Light from Outdoor Lighting Installations, 2nd Edition
- CIE TN 007:2017 - Interim Recommendation for Practical Application of the CIE System for Mesopic Photometry in Outdoor Lighting
- CIE 206:2014 - The Effect of Spectral Power Distribution on Lighting for Urban and Pedestrian Areas

Division Publications in 2025

.....cont. existing/ current publications in the scope of Division 4:

- CIE 194:2011 - On Site Measurement of the Photometric Properties of Road and Tunnel Lighting
- CIE S 021/E:2011 - Vehicle Headlighting Systems Photometric Performance - Method of Assessment
- CIE 193:2010 - Emergency Lighting in Road Tunnels
- CIE 115:2010 - Lighting of roads for motor and pedestrian traffic, 2nd Edition
- CIE 189:2010 - Calculation of tunnel lighting quality criteria
- CIE 188:2010 - Performance assessment method for vehicle headlighting systems
- CIE 183:2008 - Definition of the cut-off of vehicle headlights
- CIE 180:2007 - Road transport lighting for developing countries
- ISO 30061:2007(E)/CIE S 020/E:2007 - Emergency Lighting
- CIE 169:2005 - Practical design guidelines for the lighting of sport events for colour
- CIE S 015/E:2005 - Lighting of outdoor work places
- CIE 088:2004 - Guide for the lighting of road tunnels and underpasses, 2nd ed.
- CIE 154:2003 - The maintenance of outdoor lighting systems
- CIE x023:2002 - Proceedings of two CIE Workshops on Photometric Measurements Systems for Road Lighting Installations, Liège, Belgium, 1994; Poitiers, France, 1996

Division Publications in 2025

.....cont:

- CIE 144:2001 - Road surface and road marking reflection characteristics
- CIE 143:2001 - International recommendations for colour vision requirements for transport
- CIE x020:2001 - Proceedings of the CIE Symposium "Uncertainty evaluation - Methods for analysis of uncertainties in optical radiation measurement", 23-24 January 2001, Vienna, Austria
- CIE x019-2001 - Proceedings of three CIE Workshop on Criteria for Road Lighting, Durban, South Africa, 1997; Bath, United Kingdom, 1998; Warsaw, Poland 1999
- CIE S 004/E:2001 - Colours of light signals
- CIE 136-2000 - Guide to the lighting of urban areas
- CIE 132-1999 - Design methods for lighting of roads + Disk
- ISO 16508:1999(E)/CIE S 006.1/E-1998 -Road traffic lights - Photometric properties of 200 mm roundel signals
- CIE 129-1998 - Guide for lighting exterior work areas
- CIE 128-1998 -Guide to the lighting for open-cast mines
- CIE 126-1997 - Guidelines for minimizing sky glow
- CIE 112-1994 - Glare evaluation system for use within outdoor sport and area lighting
- CIE x008-1994 - Proceedings of a Symposium of CIE TC 4-21 "Urban sky glow, a worry for astronomy", 3 April 1993, Edinburgh, Scotland

Division Publications in 2025

.....cont.

- CIE 094-1993 - Guide for floodlighting
- CIE 093-1992 - Road lighting as an accident countermeasure
- CIE 072-1987 - Guide to the properties and uses of retroreflectors at night
- CIE 067-1986 - Guide for the photometric specification and measurement of sports lighting installations
- CIE 066-1984 - Road surfaces and lighting (joint technical report CIE/PIARC)
- CIE 062-1984 - Lighting for swimming pools
- CIE 061-1984 - Tunnel entrance lighting: A survey of fundamentals for determining the luminance in the threshold zone
- CIE 058-1983 - Lighting for sports halls
- CIE 057-1983 - Lighting for football
- CIE 039.2-1983 - Recommendations for surface colours for visual signalling, 2nd ed.
- CIE 001-1980 - Guidelines for minimizing urban sky glow near astronomical observatories (Joint publication IAU/CIE)
- CIE 047-1979 - Road lighting for wet conditions
- CIE 045-1979 - Lighting for ice sports
- CIE 042-1978 - Lighting for tennis
- CIE 034-1977 - Road lighting lantern and installation data: photometrics, classification and performance
- CIE 033-1977 - Depreciation of installations and their maintenance

- CIE 032-1977 - Lighting in situations requiring special treatment
- CIE 031-1976 - Glare and uniformity in road lighting installations

Highlights of Division Work Program

Currently the Division 4 incorporates 14 Technical Committees, 9 Reporterships, participates in 4 Joint Technical Committees and has 9 Liaison Officers with other organizations

Technical Committees with advanced reports/ publications

TC 4-11 High Levels Matters- Chair: Nigel Parry (GB)

- No updates

TC 4-47 Application of LED's in Transport Lighting and Signaling - Chair: Hugh Barton (GB)

- No updates

TC 4-50 Road Surface Characterization for Lighting Applications- Chair: Valerie Muzet (FR)

- Another extension of the deadline accepted will be requested.

TC 4-53 Tunnel Lighting Evolution-Chair: Jerome Dehon (BE)

- Work is progressing and another extension will be requested until 2026 to allow achieving the revision work.

TC 4-57 Guide for Sports Lighting - Chair: Alan Smith (GB)

- The documents needs to be re-formatted.

Highlights of Division Work Program (cont.)

TC 4-58 Obtrusive Light (light pollution) from Colourful and Dynamic Lighting and its Limitation- Chair: Steve Lau (CN)

- Ready for publication

TC 4-59 Guide for Lighting Urban Elements – Chair: Diana del Negro (IT)

- No update

TC 4-60 Road Traffic Lights – Photometric Properties of Roundel Signals- Chair: Ron Gibbons (US)

- No update

TC 4-61: Artificial Lighting and its Impact on the Natural Environment - Chair: Annika K. Jägerbrand (SE)

- No progress to report. More help from contributors requested.

TC 4-62: Adaptive Road Lighting- Chair: Paolo Di Lecce (IT)

- The document is ready for publication

Highlights of Division JTC and Reporterships

JTC 01 (D1/D2/D4) Implementation of the CIE191:2010 Mesopic Photometry In Outdoor Lighting - Chair: Stuart Mucklejohn (GB)

- Moved to the ballot

JTC 08 (D1/D2/D3/D4/D6/D8) Terminology in light and lighting - Chair: Peter Zwick(DE)

JTC 13 (D4/D3): Depreciation and Maintenance of Lighting Systems - Chair: Dionýz Gašparovský (SK)

JTC 18 (D3/D4) Lighting Education - Dionyz Gasparovsky (SK)

- Needs Division 4 representation. Diana del Negro says there are none at the moment

DR-4_50 Document Status Review - Reporter: Dionyz Gasparovsky (SK)

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)

DR-4-55 Underpinning and development of current road lighting recommendations- Reporter: Maurice Donners (GB)

DR-4-56 Lighting for Safety of Outdoor Work Places - Reporter: Dionýz Gašparovský (SK)

Div.4 Liaisons and Interorganizational collaboration

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

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

L 4-09 ISO TC22 SC35 Lighting and visibility - Paola Iacomussi

L4-10 ISO/TC 274 (AHG) 2 "Sports lighting" - Roman Dubnicka/Tomas Novak

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

DC 4-02 PIARC – Jean-Claude Martin

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

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

Other Division News

Research Priorities

Adaptive Lighting - update, develop and consult for merging inputs with Div.3

Obtrusive Lighting – guidelines for limitation of the effects from outdoor lighting, for minimizing urban sky glow near observatories

Other News

DR Proposal - *Underpinning and development of current road lighting recommendations* (M. Donners)

Research Forum Proposal- *Toward a new CIE reference observer non-biological* (Paola Iacomussi)

The development and market proliferation of vision-based systems in automotive will need a different metric from the current one based only on the human observer.

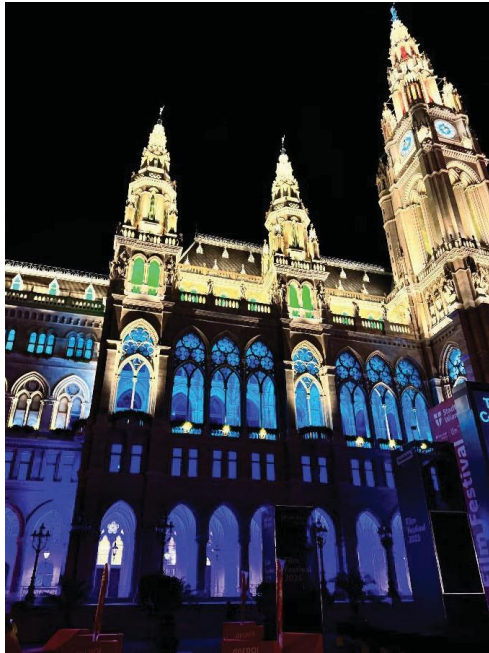
Proposed Standard:- *Intrusive Light* (D. Gasparovsky)

Div. 4 Future Meetings and Symposiums

- **2026 CIE Australia Lighting Research Conference** (January 29 – 30), Sydney, Australia and online; subjects of interest for Div 4, light pollution and obstrusive lighting
- **2026 CIE workshop on "future topics in road lighting"** (October 13–14), Turino, Italy: considering this workshop
- **2027 Nanjing (CN) CIE Quadrennial Session** : will attend
- 2025, Div 4 Canada meeting with Steve Fotios to study Bicycle Light Standards based on data from IESNA and CIE .
- **2028**, June/July or September/October, High Tatras (Slovakia), Annual D4 Meeting + Workshop



Vienna Highlights



- Unveiling of the renewed façade Lighting of the Vienna City Hall

Vienna Highlights from Anne-Marie Villeneuve

- More volunteers needed to assist for some of the technical groups.
- Division 4 will need assistance in updating older documents. Perhaps a more unique approach to liaison with other organizations to reduce the time for updates.
- Bicycle studies are a demand globally therefore, working with IESNA and CIE can again minimize the costs and time to surrender light level updates.



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

Unclassified / Non classifié



Canadian National Committee Comité national canadien

Division 6: Photobiology and Photochemistry

Report to CNC/CIE 70th Annual Meeting

CNC/CIE 70th WEBEX Annual Meeting will be held on 21st November 2025 starting at 11:00 AM EST.

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

1 1 Introduction

The CNC/CIE is Canada's collective voice for light and lighting science and art, supporting the Standards Council of Canada by contributing core members to the Canadian mirror committee for ISO/TC 274 – Light and Lighting. This committee standardizes specific lighting applications and coordinates draft standards with the CIE. For more on ISO/TC 274, visit the ISO website.

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

DIVISION OFFICERS

Wei Zhang (WZ)	CN	China	DD6 (Division Director)
Eric Liggins (EL)	GB	United Kingdom	DE6 (Division Editor)
Laura Bellia (LB)	IT	Italy	DS6 (Division Secretary)
Yandan Lin (YL)	CN	China	ADD6 (Associate Division Director)
David H. Sliney (DHS)	US	United States	ADD6 (Associate Division Director)
			LR 6 01 (Liaison Representative)
			DC 6-03 (Division Correspondent)

Official Division 6 Members

Karl Schulmeister	AT	Austria
Urbain de Plessis	AU	Australia
Guy Vandermeersch	BE	Belgium
Kamelia Nikolova	BG	Bulgaria
Isac Roizenblatt	BR	Brazil
Sami Qutob	CA	Canada
Tongsheng Mou	CN	China
Ralf Zuber	DE	Germany
Anne Bay	DK	Denmark
David Baeza Moyano	ES	Spain
Timo Partonen	FI	Finland
Coralie Barrau	FR	France

Luke Price	GB	United Kingdom
TM Chung	HK	Hong Kong S.A.R., CN
László Balázs	HU	Hungary
Alex Goldin	IL	Israel
Laura Bellia	IT	Italy
Shu Takeshita	ST	Japan
Meeryoung Cho	KR	South Korea
Vineetha Kalavally	MY	Malaysia
Luc Schlangen	NL	Netherlands
Jon Y Hardeberg	NO	Norway
Urszula Blaszcak	PL	Poland
Razvan Catalin Bucuresteanu	RO	Romania
Zoran Ledinski	RS	Serbia
Roman Belyaev	RU	Russia
Hillevi Hemphälä	SE	Sweden
Katja Malovrh Rebec	SI	Slovenia
Banu Manav	TR	Turkey
Chien-Yue Chen	TW	Chinese Taipei
George C Brainard	US	United States
Edwin Mofokeng	ZA	South Africa

2 Highlights

Altug Didikoglu (AD) was welcomed as the newly appointed rapporteur for DR 6-50 on optimal spectral weighting functions for biological and ecological effects of environmental light pollution.

David Boeza Moyano (DB) was also welcomed as convenor of RF 08, focusing on the effects of daylight and indoor lighting on skin circadian rhythms, along with Luke Price (LP), appointed as convenor of RF 09 on myopia and daylight exposure.

2.1 New Technical Committees and Reporterships

TC Reports and Committees (4)

JTC 05 (D6/D2)	Review of IEC 62471/CIE S009
JTC 08 (D1/D2/D3/D4/D6/D8)	Terminology in light and lighting
JTC 19 (D6/D2)	Terms and definitions of horticultural lighting
JTC 20 (D6/D2)	Wearable alpha-opic dosimetry and light logging methods, limitations, device calibration and data schemes

Division Reporterships (4)

Title	Reporter
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 6-47	The role of light and lighting conditions in the prevention, development and mitigation of myopia: a literature review	Coralie Barrau
DR 6-48	A comprehensive checklist for reporting light characteristics in in-laboratory human studies using light as an intervention	Raymond Najjars
DR 6-49	The ipRGC influenced responses to light: From mechanisms to policy	Manuel Spitschan
DR 6-50 (NEW)	Optimal Spectral Weighting Functions for Biological and Ecological Effects of Environmental Light Pollution	Altug Didikoglu

Reports from Liaison Representatives (LR) and Division Correspondents (DC) (8)

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

IEC/TC 76/WG 1 deals with optical radiation safety, reviewing biological and physical data. IEC/TC 76/WG 9 deals with non-laser optical radiation safety, with the aim of developing emission limits and measurement conditions for non-laser optical radiation sources. Following the release of IEC 62471-6:2022 on UV lamp safety, CIE D6 has focused on developing IEC 62471-8 for infrared lamps, including LEDs. These standards emphasize the importance of time-weighted averaging (TWA) for daily exposure and realistic assessment distances. Misinterpretation of the 20 cm measurement distance in earlier standards led to flawed risk assessments. Extensive discussions, led by D. Sliney and supported by Dr. John O'Hagan (WG-9 Convener), helped clarify proper assessment practices. A general report is available.

Reporter: David Sliney (US)

L6-08 CEN/TC169/WG 8 Lighting Applications - Photobiology

No activity has been reported since CEN/TC 169/WG 8 was disbanded. ZW will contact the TMB to close item L 6-08 and remove it from the dashboard, and also seek TMB approval for establishing a liaison with CEN/TC 169/WG 13 (and WG 2).

Reporter: John O'Hagan (GB)

L6-10 IEC/TC 34 Lighting

Three working groups are currently relevant to D6: WG 19 (horticultural lighting), JWG 21 (photobiological safety), and WG 23 (UV radiation for germicidal applications). All are product-focused and do not address the fundamental biological aspects. The liaison committee is responsible for developing and maintaining international standards related to the safety, performance, and compatibility of electric lighting products and systems. This includes light sources, components, caps and holders, control gear, luminaires, and related equipment. The scope has been recently expanded to also cover applications of optical radiation beyond illumination, such as UV for germicidal use, horticulture, and human well-being. New items of interest to CIE/D6, since the last D6 annual meeting in Sep 2024, include:

- IEC 62471-7:2023 Photobiological safety of lamps and lamp systems - Part 7: Light sources and luminaires primarily emitting visible radiation ISH under preparation, to avoid the misunderstanding of the retinal thermal hazard assessment of high brightness luminaires.
- IEC 63640 ED1 Horticultural lighting – LED modules for horticultural lighting – Safety

Reporter: John O'Hagan (GB)

L 6-11 ISO/TC 142/WG 2 Revision of ISO 15858:2016 UV-C Devices – Safety information – Permissible human exposure

The revision of ISO 15858:2016 was not approved due to differing views among member states. Some, like Germany, raised safety concerns about “Far-UVC” wavelengths below 240 nm, while others supported expanding the standard to include ACGIH exposure limits, which are more lenient than ICNIRP’s. WG2 agreed to reference both guidelines in the revision, leaving the choice to the reader. The draft was further amended and circulated for comment ahead of the October 2024 meeting, where revisions continued.

Additionally, the European Airborne Disinfection Task Force proposed creating a new ISO UV committee in response to increased demand for UV disinfection standards post-COVID. WG2 members were divided on the proposal, and it was forwarded to ISO/TC142 for further review.

Reporter: Ewan Eadie (EE)

DC6-01 WHO

WHO is developing Basic Safety Standards for Non-Ionising Radiation, including optical radiation. The document is intended as guidance for national regulatory authorities, particularly in developing countries that may lack their own legislation. Progress has been slow due to competing priorities within WHO, and the draft has remained with the editorial team for over a year without being given precedence.

Reporter: John O’Hagan (GB)

DC6-02 ICNIRP

A new Commission was elected for the four-year term 2024 to 2028 in July 2024. ICNIRP held its 2025 Annual General Meeting from 12–14 May at the Federal Office for Radiation Protection (BfS), alongside sessions of various project groups. Dr. Gunde Ziegelberger was honored for 20 years of service as Scientific Secretary. ICNIRP published a statement in 2024 on short-wavelength indoor light exposure and human health, available on its website. A working group on chronic UV exposure is reviewing long-term health effects and updating guidance. Progress also continues on projects related to laser pointers and laser exposure limits.

Reporter: John O’Hagan (GB)

DC6-03 ASP

The American Society for Photobiology (ASP) held its biennial meeting in July 2024 in Chicago, featuring well-attended sessions on topics such as melanopsin, UV germicidal applications, and plant science. Since 2020, ASP has hosted monthly free webinars on photochemistry and photobiology, with over 46 recordings available online. The next biennial meeting is scheduled for 16–19 May 2026 in Scottsdale, AZ. As European and American photobiology societies meet in alternating years, Division 6 could consider holding its 2026 meeting alongside the ASP conference if no other suitable venue is found.

Reporter: David Sliney (US)

DC6-04 World Meteorological Organisation (WMO)

The Editorial Board continually updates meteorological measurement guidance, including radiation (WMO No. 8, 2024), to reflect new technologies like satellite and radar. Efforts continue to standardize terminology and align with the International Lighting Vocabulary (ILV).

Reporter: Ann Webb (US)

2.2 Division publications

1. **ISO/CIE DIS 28077(E):2024 Photocarcinogenesis action spectrum (non-melanoma skin cancers).** ISO/CIE 28077 was prepared by CIE Technical Committee 6-32, Action Spectrum for Photocarcinogenesis, as CIE S 019. The committee responsible for this document is ISO/TC 274, Light and lighting.

2. **ISO/CIE 28077:2024 - Photocarcinogenesis action spectrum (non-melanoma skin cancers).** This ISO/CIE International Standard was prepared by the International Commission on Illumination (CIE) Technical Committee 6-32, Action Spectrum for Photocarcinogenesis, in cooperation with Technical Committee ISO/TC 274, Light and lighting. This third edition cancels and replaces the second edition (ISO/CIE 28077:2016), which has been technically revised.

2.3 Future meetings

No decision was made on the 2026 D6 meeting location, but it was agreed to hold it in person. Action: DSL will explore the possibility of aligning the meeting with the Far-UV-C Photobiologists' event.

3 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
JTC-14	Integrative Lighting (ISO JWG 4)	Jennifer Veitch (President-CIE)
JTC-19	Horticultural Lighting	Ian Ashdown

4 Highlights of Division Work Programme

4.1 Overview of the status of (J)TCs and Reporterships

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

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

Status: With the resolution on differences on pulsed emissions and UV weighting functions resolved and removal of the third part of the S009 document, it became possible to prepare the working document (WD). The next steps will be to complete the appropriate form and submit it to the technical management board (TMB).

Chair: John O'Hagan (GB)

4.1.2. JTC 08 (D1/D2/D3/D4/D6/D8) Terminology in light and lighting

Scope: To address any issues regarding terms and definitions related to the International Lighting Vocabulary (ILV).

Status: Revision of definitions of terms:

1. **Definition of “Light Stimulus” (17-22-125):**
Updated from focusing solely on visual sensation to include both visual and non-visual responses to visible radiation entering the eye.
2. **Note 3 of “UV Radiation” (17-21-008):**
Expanded to specify that UV radiation between 100–200 nm can be referred to as “vacuum UV” (VUV), adding clarity to existing terminology.
3. **Definition of “Radiant Exposure” (ILV 17-21-071):**
Revised to recognize “irradiation dose” as a synonym and to clarify that both terms refer to time-integrated irradiance.
4. **Revisions to ILV 17-26-065 and ILV 17-26-066:**
Updates proposed for the definitions of the “erythema spectral weighting function/action spectrum” and “erythema dose/erythema radiant exposure.”

Chair: Peter Zwick (DE)

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

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

Status: A 2nd draft international standard was prepared and provided to CIE technical manager. Draft International Standard was to be circulated in September 2025 for ballot. D6 approved the continuation of the work of JTC 19 and the reappointment of the TC Chair. Wei ZHANG will prepare the application form and submit it for TMB ballot.

Chair: Wei Zhang (CN) Co-chair: Paul Dekker (NL)

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

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

Status: The current status of this JTC is that the working document is nearly complete, pending a review by DSL on a few specific topics. A proposal has been made to amend the Terms of Reference (ToR) to allow for the delivery of both a technical report, already in draft form, and a Technical Note (TN) that would serve as a template for manufacturers. This proposed change to the ToR has been approved by D6 and, as of the meeting date, was undergoing a TMB ballot scheduled to conclude on July 11.

Chair: Manuel Spitschan (MS)

4.1.5 R6-43 Illuminators for Treatment of Infant Hyperbilirubinemia

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

Status: A progress report was provided by ML, with the proposal to finish the Division Reporter Report (DRR) in the summer 2025 for Division Editor (DE) revision.

Reporter: Michael Lynn

4.1.6 R6-45 Publication and maintenance of the CIE S026 Toolbox

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

Status: This is a CIE managed resource, so this DR is open and currently no action is necessary. A simplified version of the tool may be developed to support newer versions of Windows and Excel, making it easier to maintain and ensure long-term functionality.

Reporter: Luke Price

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

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

Status: It is a comprehensive literature review about how myopia is affected by light exposure during the development of the visual system that could be the basis for a CIE publication, not only for internal circulation. CM will contact CBA for this proposal of a new TC, and LP will share this information among the RF-09 members, who also have an interest.

Reporter: Coralie Barrau

4.1.8 R6-48 A comprehensive checklist for reporting light characteristics in in-laboratory human studies using light as an intervention

Scope: There is no consensus on reporting light characteristics in studies investigating non-visual responses to light. The ENLIGHT Checklist is the first consensus-based checklist for documenting and reporting ocular light-based interventions for human studies. The implementation of the checklist will enhance the impact of light-based research by ensuring comprehensive documentation, enhancing reproducibility, and enabling data aggregation across studies.

Status: The document was almost complete, but some comments were still to be addressed, and some parts were still to be added before moving forward for the next steps.

Reporter: Raymond P. Najjars

4.1.9 R6-49 The ipRGC influenced responses to light: From mechanisms to policy.

Scope: The goal of this reportership is to summarize and report on the discussions taking place in the upcoming Ladenburg Roundtable Light for health and well-being – from the biological principles to policy, taking place from 14 to 16 April 2024 in Ladenburg, Germany. The Roundtable is an international meeting involving experts from the field of the non-visual effects of light, focussing on the following three questions:

- How solid and robust is our laboratory evidence when applied to the real world?
- How can we translate recommendations into policy?
- How can we communicate and engage with the public?

Status: This DR reports on the findings from the Ladenburg Roundtable (14-16 April 2024) on light exposure and policy and D6 approved to move towards a TN. The TN should report on the different topics discussed during the Roundtable not covered in the published open access paper on the subject.

Reporter: Manuel Spitschan

4.1.9.1 R6-50 (NEW) Optimal Spectral Weighting Functions for Biological and Ecological Effects of Environmental Light Pollution.

Scope: The Division Reporter will summarize discussions and outcomes from the 4th Manchester Workshop on Light Metrics for Biology – Light Pollution (2025), where experts will evaluate optimal wavelength weighting functions for assessing biological impacts of light pollution. The findings will be published as a Technical Note to support future research.

Status: DR 6-50 began in late 2024, with the DRR expected within six months. Although a title change was proposed, it was ultimately retained. A related paper will be published, and the TN will summarize the workshop content. Due to the time needed to finalize results and reach consensus, a 4-month extension for the DRR was proposed and unanimously approved.

Reporter: Altug Didikoglu (T)

4.2 New proposals

A DR proposal was approved to introduce simplified terminology for ipRGCs and abbreviations for alpha-opic illuminances from CIE S026:2021, with Jennifer Veitch as the reporter. Expert input will be sought from previous workshop and roundtable participants.

DR Proposal LB D06-2403 on the biological and ecological effects of electric light was approved by D6 (18 yes with comments, 1 abstention), and also by CB and TMB.

DR Proposal LB D06-2501 to revise the Terms of Reference for JTC20 (D2/D6) was approved by D6 and D2, and is now under TMB review.

5 Other Division News

None

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

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

SCC	Standards Council of Canada
SP	Supplement
TC	CIE Technical Committee
Types of technical publications	e.g. DRR and PS



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



Canadian National Committee Comité national canadien

Division 8: Image Technology

Report to CNC/CIE 70th Annual Meeting
Nov 21st, 2025

Robin Atkins
Email: robin.atkins@dolby.com

1 Introduction

To study procedures and prepare guides and standards for the optical, visual and metrological aspects of the communication, processing, and reproduction of images, using all types of analogue and digital imaging devices, storage media, and imaging media.

Division Director	Noel Richard (FR)
Division Secretary	Hermine Chatoux (FR)
Division Editor	Manual Melgosa (ES)

The Division 8 annual meeting was held during the CIE General Assembly in Vienna, July 10th 2025. Robin Atkins represented Canada.

2 Highlights

2.1 New Technical Committees and Reporterships

New TC proposal: Optimal CMFs for Display Color Consistency

- To standardize a set of new colour matching functions for self-emissive devices of display system that minimizes colour inconsistency caused by imperfections in the CIE 1931 standard observer.
- To propose an optimization framework of physiologically-driven colour matching functions to achieve colour consistency amongst electronic displays of different technologies.
- This framework provides a set of optimized parameters associated with physiological templates and components of the human eye. This TC provides the description of fundamental work on derivation of color matching functions optimized to improve perceive color consistency across observers and electronic display technologies.

Chair: Francisco Imai (US)

Members: Manual Melgosa, Andrew Stockman, Ronnie Luo, Tommy Wei, Youngshin Kwak, Po-Chie Hung, Shahram Peyvandi

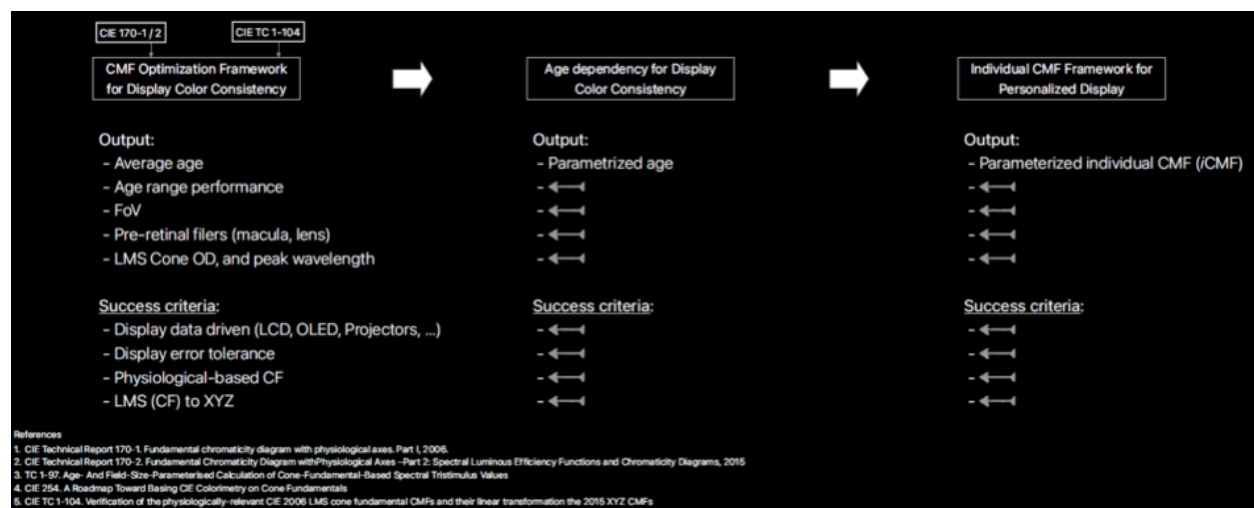
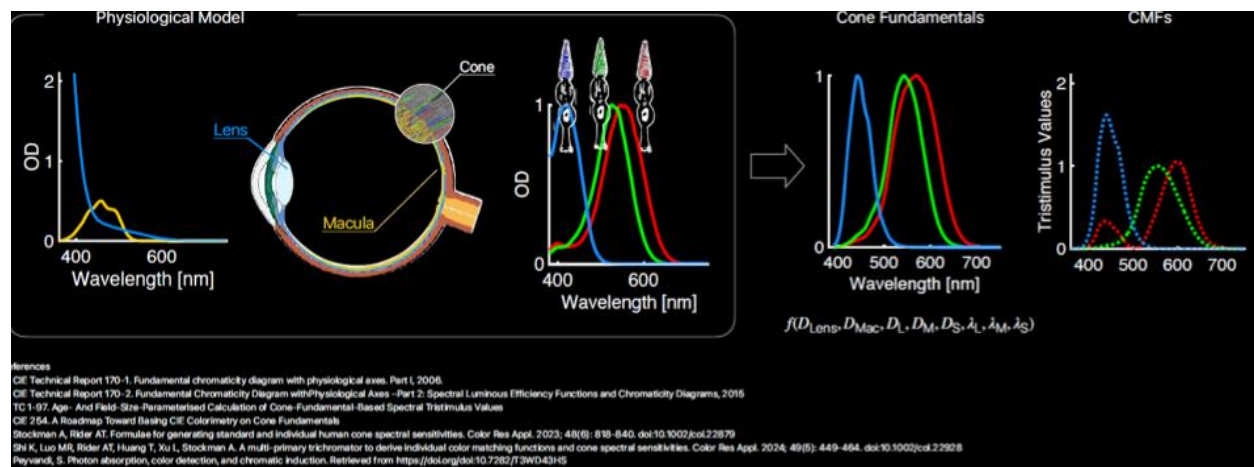
- **Issue:** Inconsistent color appearance across display technologies due to a flaw in the CIE 1931 CMFs

measuring the same in CIE 1931 space, but appear different



- **Goal:** Sets of optimized CMFs framework standard to improve color consistency for display industry

measuring the same in optimized space and appear the same



CIE TC 1-104

- Verification of the physiologically-relevant CIE 2006 LMS cone fundamental CMFs and their linear transformation the 2015 XYZ CMFs

1-104: VERIFICATION OF THE PHYSIOLOGICALLY-RELEVANT CIE 2006 LMS CONE FUNDAMENTAL CMFS AND THEIR LINEAR TRANSFORMATION THE 2015 XYZ CMFS

- To verify the standard cone spectral sensitivities, colour matching functions and individual differences defined in CIE 170-1:2006, Fundamental chromaticity diagram with physiological axes – Part 1 [1], and in CIE 170-2:2015 Fundamental chromaticity diagram with physiological axes – Part 2 [2] referred to jointly as the CIELMS(06)XYZ(15) model.
- To test and refine the standard cone spectral sensitivities, colour matching functions and individual differences defined in the CIELMS(06)XYZ(15).

Chair: [Andrew Stockman](#) (GB)

2.2 Division publications

No new publications in the last year

2.3 Future meetings

Next Division Meeting Feb 2026 (Webex) to discuss TC and RF

3 Current Canadian participation in Division X activities

No Canadian participation in Division 8 activities last year

4 Highlights of Division Work Programme

4.1 Overview of the status of TCs and Reporterships

Current Technical Committees

TC#	Title	TC Chair	Year	Remarks
TC 8-12	Image and Video Compression Assessment	Pascal Bourdon (FR)	2013	Dissolution
TC 8-14	Specification of Spatio-Chromatic Complexity	Noël Richard (FR)	2015	Report at committee stage (CD)
TC 8-16	Consistency of Colour Appearance within a Single Reproduction Medium	Craig Revie (UK)	2017	WD in ballot at TC level
TC 8-17	Methods for Evaluating Colour Difference between 3D Colour Objects	Kaida Xiao (GB)	2017	WD in progress
TC 8-18	Guidelines for Definition and Evaluation of High Dynamic Range Images and Image Sequences	Mekides Assefa Abebe (NO)	2021	In progress
JTC 12	Terminology in light and lighting	Alejandro Ferrero (ES) D8: Noël Richard (FR)	2018	WD in progress
JTC 16	Validity of Chromatic Adaptation	Minchen Wei (HK) D8: Kaida Xiao (GB)	2018	In progress
JTC 17	Gloss measurement and gloss perception: A framework for the	Frederic Leloup (BE) D8: Empty	2019	Dissolution

	definition and standardization of visual cues to gloss			
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4.1.1 8-12 Image and Video Compression Assessment

To establish and report on the display and viewing conditions and materials for image and video compression quality evaluation in different applications including, but not limited to, web, mobile phones, HDTV, home cinema and digital cinema.

Chair: [Pascal Bourdon](#) (FR)

Members: Bodrogi P, Bourdon P, Bovik A, Charrier C, Fernandez-Maloigne C, Hardeberg J, Larabi M.C, Lopez J.M, Otazu X, Pedersen M, Richard N, Rizzi A, Saad M, Saadane H

Status:

- Committee Draft 5 submitted on April 28th 2023 with all remarks addressed
 - o Assigned expert returns from January 2024
- July 2025: Pascal Bourdon proposed to close the TC
 - o Microsoft Word edition not adapted for such document management.

4.1.2 8-14 Specification of Spatio-Chromatic Complexity

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

Chair: [Noel Richard](#) (FR)

Members: Deborah H., Ghorbel F., Ivanovici M., Kinjiro A., Lafon D., Melgosa M., Richard N., Hardeberg J., Fernandez-Maloigne C., Tanaka M.

Status:

- Committee Draft 2 submitted on August 28th 2024
 - o Return from CIE edition obtained in Jan,2025
 - o Final version planned to end of July 2025

4.1.3 8-16 Consistency of Colour Appearance within a Single Reproduction Medium

To study and report on sets of reproductions of the same source image that have a consistent colour appearance and are most similar to a reference reproduction of the source image. The report will include a recommendation for assessment methods that measure the similarity of reproductions of an image with different colour gamuts, for printed images on substrates with approximately similar characteristics in a fixed viewing environment. Only the effect of colour reproduction on appearance will be considered by this TC and so the assessment will be performed using hardcopy or softcopy proofing. To identify methods of assessment of, and comparison between, colour reproduction strategies considering their ability to maintain consistency of colour appearance with respect to a reference reproduction of the source image.

Chair: [Yasuki Yamauchi](#) (JP), [Craig Revie](#) (YK)

Members: 24 members from 9 countries

Status:

- Committee Draft in edition since December 2024

4.1.4 8-17 Methods for Evaluating Colour Difference between 3D Colour Objects

To study the subjective assessment methods and recommend a dataset for colour difference evaluation of pairs of 3D colour objects. To prepare a report on the investigations of the effects on the perception of colour difference that may be caused by differences of 3D shape, gloss and material.

Chair: [Kaida Xiao](#) (GB)

Members: Cui G. (CN), Melgosa M. (ES); Richard N. (FR); Perales E. (ES), He R. (GB), Sun P.-. (TW), Chen G. (CN), Morovic P.(ES), Ramasamy S. (US), Huang M. (CN), Bressler Y. (IL), Pointer M. (GB)

Status:

- Collecting 3d color difference dataset.
- Flat, sphere, cone, cylinder objects with different finish, sizes, and illuminants.
- Five publications
- TC report in preparation
- Proposed new TC chair: Ruili He

4.1.5 8-18 Guidelines for Definition and Evaluation of High Dynamic Range Images and Image Sequences

To propose a definition of High Dynamic Range (HDR) images and image sequences (Images, hereafter), including luminance level, contrast, and spatial/temporal distribution. To define luminance levels, observing environment, adopted white point, the kinds of Images to be used in research experiments and their assessment. To recommend methods of calculating key characteristics of the HDR Images.

Chair: [Mekides Assefa Abebe](#) (NO)

Members: Cui G. (CN), Wei M. (HK), Simone G. (IT), Suessl F. (DE), Mizokami Y. (JP), Kim Y. J. (KR), Melgosa M. (ES), Green P. (UK), Luo R. (UK/CN), Kunkel T. (US), Wanat R. (US), Hung P.C. (US), Aizu M. (JP), Ferrero A. (ES), JEONG J. (KR), Kuniba H. (JP)

Status:

- Three meetings in 2024. Mostly discussing terms. Two presentations by TC members
 - o “Development of high contrast luminance reference source for evaluating HDR imaging measurements” Alejandro Ferrero
 - o “Update on the timeline status of HDR Imaging in Smartphones” Francois-Xavier
- Three meetings so far in 2025.
 - o Begun working on the main body of the document which focuses on defining and evaluating the key characteristics of HDR images
- Extending the plan to finish working draft by end of 2025, submit to Div 8 by end of 2025

4.1.6 JTC 08 (D1/D2/D3/D4/D6/D8) Terminology in light and lighting

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

Chair: [Peter Zwick](#) (DE)

Members: No Information

Status: NTR

4.1.7 JTC 12 (D2/D1/D8) The measurement of sparkle and graininess

To provide a methodology to measure sparkle and graininess, and to develop a measurement scale. Measurands will be defined and the requirements for their measurements will be well normalized, in such a way that different instruments can provide the same spectrophotometric data from the same specimen. A psychophysical method will be recommended to obtain visual data, and its correlation with the

spectrophotometric data will be worked out to develop the measurement scale for sparkle and graininess.

Chair: Alejandro Ferrero (ES), Francisco Verdu (US)

Members: 32 members, 11 countries

Status:

- Work on the TC is finished – working on submitting
- A JTC12 meeting will be set up the third week of July 2025, to discuss the modifications of the draft before the ballot.
- Plan is to start this ballot after this summer.

4.1.8 JTC 16 (D1/D8) Validity of Chromatic Adaptation

Recent experimental work revealed the incomplete chromatic adaptation under white light, especially those with low CCT and off-Planckian chromaticities, which are important to the performance of chromatic adaptation transforms. This was not considered in existing chromatic adaptation transforms (CATs). The TC will review the existing CATs and propose modifications by including a two-step transform to take the effect of white light chromaticity on degree of chromatic adaptation into consideration.

Chair: Shining Ma (CN), Kaida Xiao (GB)

Members: No Information

Status:

- Extended to 31/12/2025
- Change of TCChair : Shining Ma (CN)

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

To describe recommendations for standardised visual assessment conditions of individual, established cues to gloss, to make recommendations for the definition of a standard gloss observer for individual diagnostic cues and, based on the findings from the above, to suggest optical methods and metrics for describing gloss in correlation with the established gloss cues.

Chair: [Frédéric Leloup](#) (BE)

Status:

- Vote to close TC realized and approved
- Closed without a report

4.2 Dissolution of and changes to TCs and Reporterships

Dissolution of TC 8-12 ([Image and Video Compression Assessment](#)) and JTC 17 ([Gloss measurement and gloss perception: A framework for the definition and standardization of visual cues to gloss](#)).

Change of TC Chair in JTC-18 to Shining Ma (CN)

4.3 Division Liaisons and interorganizational collaboration

	Title	Reporter
L 8-01	ISO/TC 36: Cinematography	CIE Central Bureau
L 8-02	ISO/TC 130: Graphic Technology	Florian Suessl
L 8-03	ISO/TC 42: Photography	Hideyasu Kuniba
L 8-04	ISO/TC 159/SC 4/WG 2: Visual Display Requirements	Po-Chieh Hung
L 8-05	ISO/IEC/JTC 1/SC 29: Coding of Audio, Picture, Multimedia and Hypermedia Information	Olfa Ben Ahmed

L 8-06	IEC/TC 100/TA 2: Multimedia Systems and Equipment	Hideyasu Kuniba
L 8-08	ISO/IEC/JTC 1/SC 28: Office Equipment	Klaus Richter
DC 8-01	ASTM/E12: Colour and Appearance	Ellen Carter
DC 8-02	International Color Consortium (ICC)	Maxim Derhak

A dedicated meeting was held 26th of August:

The meeting focused on enhancing team engagement and collaboration within the division, addressing ethical standards, ongoing projects, and opportunities for partnerships in display metrology and color management.

- Collaboration opportunities between CIE divisions and ICDM highlighted for future projects.
- Introduced new liaison officer role to prevent duplication of efforts between organizations.
- Monitoring ISO TC 01:59 and working group two focused on visual display ergonomics.
- Noted slow progress on current projects and potential overlaps with other organizations.
- Highlighted importance of establishing formal relationships to share relevant data and standards.
- Discussed ongoing work on ICC profile specifications, particularly for HDR imaging and spectral connections.
- Highlighted the need for improved color management in HDR workflows and potential updates to ICC standards.
- Mentioned collaboration efforts with TC 01:30 on lighting sources and their implications for color reproduction.

Action Items

- Consider the proposals made by Johan Bergquist regarding collaboration on HDR metrics, adaptation states, and temporal characterization.
- Discuss the possibility of establishing a formal liaison relationship between CIE and SID.
- Review the interest in collaboration on color matching functions for display color consistency as proposed by Francisco Imai.
- Explore the potential for joint technical work between CIE Division 8 and ICDM, particularly in areas of special noise characterization and non-uniformity assessment.
- Follow up on the potential overlap and collaboration between ISO TC 01:59 and CIE activities, particularly regarding visual display requirements.
- Explore opportunities for collaboration or interest in topics related to HDI image measurement and encoding within Division 8.
- Investigate the inclusion of additional patches in the revision of IEC technical specification 61966 to enhance color matching functions.
- Discuss the impact of resolution changes on image quality and complexity in HDR image composition in future meetings.
- Florian Süßl will connect with people who deal with lighting discussions to provide more information regarding the use of LED light sources and their implications for color rendering properties.
- Noel Richard will discuss with the division management team and the central bureau about improving communication and scheduling more frequent meetings for better engagement with division members.

4.4 Research Fora

4.4.1 RF-01 Spectral imaging

To discuss the future prospect of multispectral and hyperspectral imaging technology and identify the work items to be performed in the next step.

Chair: Masahiro Yamaguchi (JP)

Members: 25 members from 11 countries

Status:

- TC proposal on multispectral representation space at the DMT ballot stage
- Difficulty to organize new meeting this year due to important increase in the academic charges
- Yet new members to the RF added last year
- Convener needs to change for 2027

CNC/CIE Membership and Elections Subcommittee – Chair’s Report November 2025

Prepared by: Michele Mossman

Current CNC/CIE Membership

The current membership includes:

- 42 Members: 13 Board Members
20 Elected Members
9 Automatic Members (participating in CIE Technical Committees)
- 62 Affiliates

The current CNC/CIE Board Members are:

<u>Member name</u>	<u>Board role</u>	<u>Term expires</u>
Cristian Suvagau	President	2027
Jennifer Veitch	Vice President and Division 3 Member	2027
Ali Ghaemi	Secretary	2027
Shirley Coyle	Treasurer	2027
Michael Brown	Division 1 Member	2027
Li-Lin Tay	Division 2 Member	2027
Lynn Asselin	Division 4 Member	2027
Sami Qutob	Division 6 Member	2027
Robin Atkins	Division 8 Member	2027
Arnold Gaertner	Member at Large	2027
Michele Mossman	Member at Large	2024
Venkat Venkataramanan	Member at Large	2027
Lorne Whitehead	Member at Large	2027
Joanne Zwinkels	Member at Large	2027

Changes to membership

During 2025, we welcomed three new Affiliates, one new regular (elected) Member, and two new contributors who are automatically CNC Members as a result of their participation in CIE technical committees.

Liviu Ivanescu moved from his previous role as CNC Secretary and Division 2 member to an ongoing role as an Elected Member. We are grateful for Liviu’s many contributions as Secretary and Division 2 member.

Li-Lin Tay accepted a new role as CNC Division 2 Member.

One Board member term, held by Michele Mossman, Member at Large, expired at the end of 2024, and this term was renewed for an additional 4 years via an email ballot vote by the membership in early 2025.

The CNC aims to have as diverse geographic representation as possible, and we have somewhat increased this diversity during 2025, welcoming two new members from Alberta and Quebec. Currently, the geographic representation of the 42 CNC Members is: Alberta (1), British Columbia (10), Newfoundland (1), Ontario (25), Prince Edward Island (1), and Quebec (4).

Nominations:

Recently elected CNC Member Anne-Marie Lemieux has agreed to be nominated as the Alternate CNC Division Member for CIE Division 4. This nomination will be put forward for a vote during the November AGM. In support of this nomination, her CV is included at the end of this report.

Additional membership activities for consideration during 2026:

As reported last year, we are working to identify individuals as Alternate Division members, to enable greater collective effort and continuity by CNC participants in support of Division activities. This process is underway, with the nomination of Anne-Marie Lemieux as the Alternate Division Member for Division 4, and we will continue our efforts to identify interested people who can support the members of other Divisions in a similar capacity.

Geographic representation remains a priority and we will continue our efforts to increase geographic membership diversity.

We will continue our efforts to identify division interests among our membership, so that we can share notices of division-related CIE technical reports and committee participation opportunities to those who may be particularly interested.



A GHD Associate

Anne-Marie Lemieux

P.ENG., ING., PMP, RMP

Technical Lead for Lighting, Traffic Signal Design & ITS



Location

Montreal, Quebec, Canada

Experience

26 years

Qualifications/Accreditations

- Bachelor of Engineering - Building, 1997
- Project Management Certification (PMP), 2013
- Risk Management Certification (RMP), 2025

Memberships

- Member of Professional Engineers of Ontario (PEO)
- Membre of Ordre des ingénieurs du Québec (OIQ)
- Member of the Association of Professional Engineers of Nova Scotia
- Member of the Association of Professional Engineers and Geoscientists of BC
- Project Management Professional Institute (PMI)
- International Commission on Illumination – Affiliate member (CIE)
- Illumination Engineering Society of North America (IESNA)
- Advisory Member of the Roadway Lighting Committee (RCL)
- Affiliate member of Canadian National Committee/ International Commission on Illumination (CNC/CIE)
- International Dark Sky Association (IDA)

Relevant experience summary

Anne-Marie is a seasoned Technical Lead and certified Project Management Professional (PMP) and Risk Management Professional (RMP) with over 25 years of specialized experience in illumination and electrical design for transportation infrastructure. Her expertise encompasses roadway, bridge, tunnel, parking, pedestrian, and cycling facility lighting, as well as power supply and distribution systems for intelligent transportation systems (ITS), including fibre optic networks, CCTV, DMS signage, and traffic signal systems for intersections, Mid-Block crossings, and detection/interconnection setups.

Anne-Marie leads all phases of project delivery, including project management, client coordination, public consultation, preliminary and detailed design, and contract documentation. She is proficient in advanced technical analysis such as illumination calculations using AutoLUX, voltage drop assessments, illumination warrant analysis, and light trespass evaluations. In addition to her technical role, she actively contributes to proposal preparation and business development initiatives.

Project experience – MTO / MTQ

Highway 23 Russeldale RAB (contract 2024-3032)

Electrical Lead | MTO | Ontario, Canada | 2022 – 2025

This project consisted of providing engineering services for the preliminary design for intersection improvements, considering traffic signals or a roundabout. Once confirmed, detail design roundabout lighting was provided.

MTO Facility Retainer (Assignment 5023-E-0007)

Electrical Lead | MTO | Ontario, Canada | 2024 – ongoing

Engineering design services for the building and site upgrades at following MTO facilities: Earlton rest area, White Clay rest area, Kashe River Rest Centre and Hearst truck inspection station. The electrical scope includes site area lighting, CCTV local monitoring.

Hwy 402/40 Bridge Rehabilitations & Hwy 40 Resurfacing, Sarnia (GWP 3105-18-00 & 3106-18-00)

Electrical Lead | MTO | Ontario, Canada | 2022 – 2025

Rehabilitation of Hwy 402 at Former CNR bridges (Rapids Parkway), Hwy 402/Modeland Rd (Hwy 40) interchange bridges, and the resurfacing of Hwy 40 from Wellington Rd to the north connection link of Hwy 40. The project includes the development of a contract package for the construction of Rapids Parkway at the Hwy 402/Former CNR bridges on behalf of the City of Sarnia. The electrical scope included underpass lighting for the City of Sarnia, mainline lighting repairs, reinstatement of counting station and loop replacement.

Niagara RAB (Contract 2025-2019) | MTO | Niagara Area

Electrical Lead | MTO | Niagara Region, ON | 2019 - 2025

Detail design of the lighting was provided for the new roundabouts at Highway 8 and Woodhill Road and Highway 5 at Middleton in the Niagara region.

Highway 40 Widening, Wellington Street to Indian Road, Lambton County (GWP 3019-21-00)

Electrical Lead | MTO | Ontario, Canada | 2022 – ongoing

This project consisted of providing engineering services for the LED conversion along Highway 40, traffic signal modifications and counting station reinstatement.

Arc Flash Analysis & Electrical Safety Assessment of Facilities (Assignment 2023-E-0073)

Project Manager | MTO | Various Locations, ON, CA | 2024 - 2025

This project consisted of providing engineering services for the arc flash hazard evaluation and electrical safety assessment for the ten (10) facilities in Central Region.

Highway 3 TA Design-Build, Windsor to Leamington, Phase 3 – Contract 2, County of Essex

Electrical Lead | Altus Group | Essex, Ontario, Canada | 2023- 2025

Technical Advisor for the lighting and traffic signal design for the Highway 3 widening from 1.2 km East of Essex County Road 23 Easterly to 1.1 km East of

Essex County Road 34.

Hwy 9 Walkerton, Bruce Rd 4 to Carrick Brant Townline (Contract 2022-3025)

Electrical Lead | MTO | Ontario, Canada | 2022 - 2023

This project consisted of providing engineering services for the mill and pave rehabilitation of the mainline, Greenock Creek bridge superstructure replacement, Bruce Rd 3 traffic signal installation, Bruce Rd 4 flasher beacon, culvert replacements, utility relocations, and entrance closures/modifications.

Frederick Street Bridge Replacement (Contract 2023-3030)

Electrical Lead | MTO | Ontario, Canada | 2022 - 2024

This project consisted of providing engineering services for Frederick Bridge Replacement over Highway 7/85. The electrical scope included underpass and municipal illumination, maintaining the impacted high mast lighting system, modification to existing Regional Traffic Signals at Victoria Street and embedded work.

Reconstruction of the Île aux Tourtes Bridge

Electrical Lead | NPBI / MTQ | Montreal, QC | 2022

This project consisted of providing engineering services for the implementation of telecommunication kiosks, a fiber optic network, a video surveillance system, vehicle detection stations (non-intrusive), a road weather station, navigation lights, lightning systems, and lighting systems with electrical distribution.

Highway 403 at Trinity Road RAB (Contract 2023-2006) | MTO | Niagara Area

Electrical Lead | MTO | Niagara Region, ON | 2019 - 2023

Detail design of the lighting was provided for the new roundabouts for both ramp terminals.

Highway 140 at Netherby RAB (Contract 2023-2008) | MTO | Niagara Area

Electrical Lead | MTO | Niagara Region, ON | 2019 - 2021

Detail design of the lighting was provided for the new roundabout.

Highway 3 TESR Update & Design-Build Ready, Windsor to Leamington, Phase 3 – Contract 2, County of Essex

Electrical Lead | MTO | Essex, Ontario, Canada | 2020-2022

Preliminary Design Report for the Highway 3 widening from 1.2 km East of Essex County Road 23 Easterly to 1.1 km East of Essex County Road 34. The level of detail will consider all requirements of a Design Built Ready package. The electrical work includes, existing system inventory and conditions report, illumination warrants, AODA compliant traffic signals, PHM-125 as well as intersection and transition lighting and cost estimation.

QEW Ramp 62 & Kerr St. Traffic Signalization (Cont. 2020-2006)

Electrical Lead | MTO | Oakville, Ontario, Canada | 2019 - 2020

This project includes the detail design for new traffic signals (designed to comply with AODA Ontario Regulation 413/12 pedestrian accessibility requirements) at the intersection of QEW ramp and Kerr Street. The project also included the LED conversion of ramp, reinstatement of loops for data collection/counting station and removal of existing electrical systems.

Highway 35/115 – Rehabilitation 14.5 km & Rehabilitation of 13 Structures (Contract 2019-2006)

Electrical Lead | MTO Central Region | Ontario, Canada | 2017 - 2019

This project includes the detail design for 13 bridge rehabilitations, 2 culvert replacements, full pavement rehabilitation of the 4-lane divided highway and operational improvements to several interchanges. The electrical scope includes LED replacement and RNITS replacement within the project limits.

Replacement of 16 Structures on Highway 11 & 583 (Contract 2020-0000)

Electrical Lead | MTO | Township of Clavet and Kolher, Ontario, Canada | 2016 - 2020

Detail design of temporary illumination and traffic signals during the construction staging at 16 structure replacements. Provided a benefit/cost analysis to justify our selection of portable temporary traffic signals due to hydro availability and short construction duration.

A15 TSI Extension between A40 and Médéric-Martin Bridge

Project Manager | MTQ | Montreal, Quebec, Canada | 2015 - 2016

Electrical distribution for all proposed advance traffic management systems within the project limits,

including contract drawings, quantities, and contract documents. The design included network interconnectivity, Vehicle Detector Station (VDS), Closed Circuit Television (CCTV) Cameras, Variable Message Signs (VMS) and telecom.

Turcot Interchange Reconstruction – Project Management Services

Electrical Lead | MTQ | Montreal, Quebec, Canada | 2014 - 2015

Anne-Marie led the electrical detailed of the contract review for the illumination design.

Bridge Rehabilitation at the Highway 401/Highway 404 and Highway 401/Neilson Road

Electrical Lead | MTO | Toronto, Ontario, Canada | 2014 - 2016

Provided detail design for the rehabilitation of the Don Valley Parkway/Highway 401 interchange. This assignment included rehabilitation of eight road to road grade separation structures at one of Ontario's busiest interchanges, including superstructure replacement and rapid construction procedures. Four road to road grade separation structures will also be rehabilitated at the nearby Nielson Road/Highway 401 Interchange. Electrical project lead/engineer responsible for detail design of the electrical work that included underpass illumination upgrades at all the rehabilitated structures and traffic signal retrofits at the Neilson Road ramp terminals.

Highway 401 – Trafalgar Road

Electrical Lead | MTO | Whitby, Ontario, Canada | 2014 - 2016

Detail design of the electrical work that included an existing condition report, illumination warrants, and illumination recommendations to be included in the preliminary design report. Temporary traffic signals and maintaining existing lighting during construction staging were also included for the design build portion of the project.

Highway 401 Widening - Salem Road to Brock Street Preliminary Design & Detail Design for the Replacement of the Henry and Brock Street Bridges

Project Engineer | MTO | Mississauga, Ontario, Canada | 2014 - 2016

Preliminary design services for the central mainline section, from Ashburn Road to Enfield Road. Preparation of illumination warrants complete with life cycle cost and benefit/cost analysis to select a preferred design alternative. Completed detailed illumination calculations for the preferred design

alternative to determine illumination levels on the roadway and at the ministry's right of way.

Highway 407 East Design Build Proposal for the Future Highway 407E from just west of Brock Road to Highway 35/115

Project Engineer | MTO | Whitby, Ontario, Canada | 2014 - 2015

Preparation of the design build proposal for the electrical systems. Completed 30% design and estimation for the ITS COMPASS expansion consisting of cabinets, pads, VDS, CCTV cameras, VMS, sizing of fiber optic network, design the power cabinets for the CCTV cameras, VMS signs illumination and traffic signal systems location and power distribution.

Highway 11 Structures 30 Percent Detail Design

Project Engineer | MTO | Ontario, Canada | 2013 - 2015

Preparation of Chapter 2: Performance Requirements for the design-build minor request for proposal, and design support during tendering for the electrical component. Temporary transition lighting at Shellwells Creek was added to the project for the second part of the contract.

Highway 401 from Burnham Street to East of Nagle Road (6.5 km)

Project Engineer | MTO | Cobourg, Ontario, Canada | 2013 - 2014

Detailed design to widen from four to six lanes to the outside, reconstruction of CR 45 interchange, widen CR 45 from two to four lanes and realignment of Division St, reconstruct Burnham S W ramp. She provided the detailed design of the electrical work including illumination warrants, partial lighting at the CR 45 interchange, parking lot illumination, new traffic signals at the ramp terminal (designed to comply with AODA O.Reg. 413/12 pedestrian accessibility requirements) temporary traffic signals to suit traffic construction staging for the Nagle Road and Ontario Street structure rehabilitation, new traffic counting stations and removal of existing electrical systems.

Highway 69 Four-laning Detail Design Services

Project Engineer | MTO | Magnetawan, Ontario, Canada | 2013 - 2016

Bridge on existing Highway 69; and local road connections in the vicinity of existing Highway 529 including a connection of Spirit Road beneath the new Magnetawan River Bridges. The work required extensive First Nation consultations. The project

included the design of partial illumination, transition illumination, and counting stations.

Highway 11 – Rehabilitation of Four Structures

Electrical Lead | MTO | Ontario, Canada | 2013 - 2015

Detail design of temporary illumination during the bridge rehabilitation of Muskoka Road 169 underpass at Highway 11SBL, and rehabilitation of three culverts (Kahshe Creek 2 crossings and Hawk Rock Creek) under Highway 11.

Highway 17 rehabilitation of Speckled Trout Creek Culvert

Electrical Lead | MTO | Graven, Ontario, Canada | 2013 - 2014

Detailed design of illumination temporary traffic signals during the construction staging at Speckled Creek. She provided a benefit/cost analysis to justify our selection of portable temporary traffic signals due to hydro availability and short construction duration.

A20/30 Interchange STI – Lot 1

Project Engineer | MTQ | Quebec, Canada | 2012 - 2015

Electrical distribution for all proposed advance traffic management systems within the project limits including contract drawings, quantities, and contract documents. The design included extension of the fiber optic backbone, FO switches, Vehicle Detector Station (VDS), Closed Circuit Television (CCTV) Cameras and Variable Message Signs (VMS).

Highway 11 New Interchange – South Entrance to Powassan from 5.7km South

Project Engineer | MTO | Powassan, Ontario, Canada | 2011 - 2015

Detail design of electrical illumination associated with the proposed 4 laning of Highway 11; and one new interchange at extension of Proudfoot Road and West Service Road. The project included decision point illumination and off ramps, ramp terminal, and intersection with service roads and two 2 lane transition lighting.

A30 Public Private Partnership

Project Engineer | ARUP/MTQ | Chateauguay, Ontario, Canada | 2010 - 2012

Illumination design for A30 section west; segment 2A through Chateauguay, Boulevard St-Joseph, and St-Jean-Baptiste contracts; and quality control for the remaining contracts, including traffic signal designs.

Highway 69 Four Laning – From 4.5 km North of Highway 64 Northerly to 8.7 km North (Contract 2008-5129)

Project Engineer | MTO | Sudbury, Ontario, Canada | 2008 - 2011

Detailed of electrical illumination associated with the proposed 4-laning of Highway 69 on twinning and new alignment sections; two new interchanges: one north of Crooked Lake Road via a realigned sideroad and the other at Highway 637; and ten new structures. The project included decision point illumination, four 2-lane transition lighting, full illumination of truck inspection station, provisions for camera monitoring at the wildlife crossings, and embedded work in structures.

407 East Preliminary Design and Environmental Assessment Study for the Future 407E from just west of Brock Road to Highway 35/115

Project Engineer | MTO | Ontario, Canada | 2008 - 2010

Preliminary electrical design report for the central mainline section, from Ashburn Road to Enfield Road. Responsible for completion of illumination warrants complete with life cycle cost and benefit/cost analysis to select a preferred design alternative. Completed detailed illumination calculations for the preferred design alternative to determine illumination levels on the roadway and at the ministry's right of way. As part of the final preliminary design report, prepared preliminary lighting layout plans showing pole locations, isolux curves, and power supplies.

Highway 6 Grand River Bridge Rehabilitation

Project Engineer | MTO | Ontario, Canada | 2009

Detailed design for the installation of temporary traffic signals and illumination for the bridge rehabilitation at Grand River. Portable traffic signals were used for this 4-stage rehabilitation.

Highway 69 Estaire Second Interchange

Project Engineer | MTO | Ontario, Canada | 2006 - 2008

Detailed design of 12 km of new freeway through the Canadian Shield. The project included 1 new bridge and one new interchange. Electrical project manager responsible for decision point illumination, underpass lighting, and embedded work in structures.

Highway 2 Widening at Thousand Island Charity Casino

Project Engineer | MTO | Gananoque, Ontario, Canada | 2006

Detailed design review and approval for full roadway illumination, underpass lighting, and traffic signal design for two intersections as well as provisions for future signals at a third intersection along Highway 2 in Gananoque at the new Thousand Island Charity Casino. The intersections were also interconnected due to their close proximity to each other.

Highway 417, from Highway 416 to Eagleson Road

Electrical Lead | MTO | Ottawa, Ontario, Canada | 2005 - 2011

Detailed design Provided detail design for widening 6.5 km of Highway 417 to an 8-lane cross section including two HOV, plus bus lanes in each direction. Bridge condition survey and rehabilitation of Moodie Drive underpass, Highway 417 westbound lane overhead at CNR and new overhead structure at Highway 417 eastbound land at CNR. The electrical work included the retrofit of the existing high mast lighting system from Moodie Drive to Highway 416, the detail design of the extension of high-mast lighting on Highway 417 from Moodie Drive to Eagleson Road, and underpass illumination and design of the municipal lighting system on Moodie Drive over Highway 417. The design also included provisions for future COMPASS expansion consisting of cabinet pads, bases, and stand-alone under pavement crossings.

Highway 401 Median Barrier

Project Engineer | MTO | Prescott, Ontario, Canada | 2005

Detailed design for freeway widening between Edward Street and Highway 16. Project engineer responsible for the partial conventional illumination design for the off ramps at Edward Street and Highway 16 as well as ramp terminals, and full illumination for the Highway 416 to Highway 401 on ramp.

Barrie Raceway along Highway 400

EIT | MTO | Barrie, Ontario, Canada | 2000

Developed lighting calculations to evaluate the potential light trespass on the Highway 400 corridor from the proposed Barrie Raceway illumination provided. The evaluation was completed for the MTO property line at the right-of-way along Highway 400 as well as the travelled roadway.

Highway 401/Salem Road Interchange

EIT | MTO | Ajax, Ontario, Canada | 2000-2005

Detailed design for the joint project of MTO Central

Region, the region of Durham, and town of Ajax involved widening and realignment of 1.5 km of Highway 401 through Ajax, a new interchange at Salem Road, and removal of the existing Harwood Avenue interchange. Responsible for full high-mast illumination, full conventional illumination, underpass lighting, traffic signals at ramp terminals, removals, and full temporary illumination during construction staging. The project required extensive lighting analysis to meet the light trespass criteria along the property limit. The temporary illumination for the six construction stages and power distribution also required extensive analysis. Full high-mast illumination, full conventional illumination, underpass lighting, traffic signals at ramp terminals, and full temporary illumination during construction stages. Provisions for future COMPASS expansion consisting of cabinet pads and bases, stand-alone under pavement crossings.

***Highway 69/Highway 141 Interchange,
Highway 69/Rankin Lake Road Interchange***

EIT | MTO | Ontario, Canada | 1999-2000

Detailed design for the decision point illumination design and embedded work in structures for 18 km of new freeway, one new interchange, and seven new structures.

Highway 69/ Highway 169 Interchange

EIT | MTO | Ontario, Canada | 1999-2001

Detailed design for the 4-lane roadway design of 26 km of new freeway, from MacTier to north of Highway 141. The project involves grading, granular base, hot mix paving, and the illumination and construction of three interchanges. Electrical designer responsible for the decision point illumination design and embedded work in structures.

***QEW Sand Plant Hill-from Glendale Avenue
Interchange to Thorold Stone Road
Interchange Preliminary Design Report***

EIT | MTO | St. Catharines, Ontario, Canada | 2000

Preliminary electrical design report including the identification of lighting deficiencies, development and evaluation of alternatives to address deficiencies, and preliminary design of the preferred alternative including life-cycle cost analysis. Preliminary design study for the widening of 7 km of the QEW through St. Catharines from four to six mainline lanes including interchange and municipal road improvements.

Project experience – Municipal

DCS for Comox Region Transit Exchanges

**Electrical Lead | BC Transit | Comox Valley Region,
British Columbia, Canada | 2024 - Ongoing**

Detailed design for the lighting of the bus shelter and bus transfer area to suit the bus transit station upgrade for five locations in the Comox Valley Regional District: South Courtenay, Downtown Courtenay, Downtown Comox, Uyster River and North Island College.

***Kennedy Road DD, CA and Inspection
Services Major Mack to Elgin Mills***

**Electrical Lead | Region of Peel | Peel, Ontario,
Canada | 2024 - Ongoing**

Lighting & traffic signal design for Kennedy Road from Major Mack to Elgin Mills Street. The work requires that the permanent and temporary street lighting and traffic control signal designs in conformance with AODA legislation and installation of luminaires on the Veridian Connections Inc. poles in compliance with full R22/04 submission procedures.

***Traffic Signals Modification and Controller
Upgrade on St-Charles Boulevard***

**Project Manager | City of Kirkland | Kirkland
QC, Canada | 2023 - 2025**

Traffic study, detail design and Contract Administration for the modifications of the traffic signal controllers and modifications to the existing traffic signals for 10 intersections along their main boulevard, including assessing various existing technologies or pilot projects in various municipalities across Canada. GHD proposed the implementation of emerging Smart City technologies with real time detection and optimization of traffic signal timing to render a multimodal arterial road more fluid and safer.

***22ECS-TI-101MR Electrical Design and
Inspection for 2023-2024 Major Roads, Local
Roads and Streetcar Way & Special Projects
Capital Work Program***

**QA/QC Reviewer | City of Toronto | Toronto,
Ontario, Canada |
2023 – ongoing**

QC and peer review of detailed design of temporary and permanent traffic signals improvements for 60+ signalized sites.

***21ECS-TI-101MR Electrical Design and
Inspection for 2022 Major Roads and Streetcar
Way & Special Projects Capital Work Program***

**QA/QC Reviewer | City of Toronto | Toronto,
Ontario, Canada |
2022 – ongoing**

QC and peer review of detailed design of temporary and permanent traffic signals improvements for 30+ signalized sites.

City of Toronto Contract No. 21ECS-LU-06SU

**Electrical Lead | City of Toronto | Toronto, Ontario,
Canada |
2020 – 2021**

Detailed design, tender and contract administration and inspection services for traffic signalization improvements at Steeles Ave W & Torresdale Ave, delivered as part of works under the City's watermain replacement program.

Preliminary Design of Old Highway 2 Rehabilitation

Electrical Lead | City of Belleville | Belleville, Ontario, Canada | 2024 - 2025

Review of the existing electrical plant impacted by the proposed highway expansion work and develop, investigate, and evaluate illumination alternatives for the improvements where lighting is warranted. Provided a conceptual layouts will be provided for the selected alternative will be available power connection, cost and any constraints associated with the proposed improvement.

Wentworth Street (RR60) from Cedar Street to Farewell Street (RR 56)

Electrical Lead | Regional Municipality of Durham | Whitby, Oshawa, Canada | 2021 - Ongoing

Lighting, traffic signal, Permanent Count Stations (PCS) & One Net fiber interconnection design for Wentworth Street from Cedar Street to Farewell Street. The work requires that the permanent and temporary street lighting and traffic control signal designs in conformance with AODA legislation and installation of luminaires on the Veridian Connections Inc. poles in compliance with full R22/04 submission procedures.

Highway 2 Bus Rapid Transit Expansion - Delta Boulevard to Merritton Road

Electrical Lead | Regional Municipality of Durham | Pickering, Ontario, Canada | 2017 - 2020

Detailed design of full illumination for Highway 2 from Delta Boulevard to Merritton Road for the continued expansion of the Highway 2 Bus Rapid Transit facility in Durham. The design was completed utilizing independent poles augmented with existing hydro poles where required. The installation of luminaires on the Veridian Connections Inc. poles are to comply with full R22/04 submission procedures as well as Hydro One corridor restrictions.

Rehabilitation of Liberty Street South (RR14) from Baseline Road to King Street East

Project Manager | Regional Municipality of Durham | Municipality of Clarington, Canada | 2022 – Ongoing

Lighting, traffic signal, Permanent Count Stations (PCS) & One Net fiber interconnection design for the Liberty Street from Baseline Road to King Street East. The work requires that the permanent and temporary street lighting and traffic control signal designs in conformance with AODA legislation

and installation of luminaires on the Veridian Connections Inc. poles in compliance with full R22/04 submission procedures. Geotechnical investigation, pavement engineering and hydro-G services were also included in the GHD scope.

Intersection Rehabilitation and Improvements of Thickson Road (Reg. Rd. 26) at Rossland Road (Reg. Rd. 28)

Electrical Lead | Regional Municipality of Durham | Whitby, Ontario, Canada | 2022 - 2025

Lighting, traffic signal, Permanent Count Stations (PCS) & One Net fiber interconnection design for the Thickson Road and Rossland Road Intersection project. The work requires that the permanent and temporary street lighting and traffic control signal designs in conformance with AODA legislation and installation of luminaires on the Veridian Connections Inc. poles in conformance with full R22/04 submission procedures.

Engineering Services for the Rehabilitation and Replacement of Culverts at Various Locations – 2021-2023-Program

Electrical Lead | City of Toronto | Various location, ON | 2021-2023

Detailed design for the temporary traffic signal signals during the construction staging for the rehabilitation and replacement of 25 culverts at various locations in the City of Toronto on multiple Contract Documents during the 3-year program. The project included the coordination for power supply connections with Toronto Hydro.

Engineering Services for Various Structure Replacements (14 Structures) 2021-2023-Program

Electrical Lead | York Region | Various location, ON | 2021-2023

Detailed design for the temporary traffic signal signals during the construction staging at various locations in the Region of York on multiple Contract Documents during the 3-year program. The project included the coordination for power supply connections with Toronto Hydro.

Campbellford Bridge over the Trent River

Electrical Lead | County of Northumberland | Campbellford, ON | 2019-Ongoing

This project which includes the preliminary and detail lighting design for a new multi-span bridge crossing of the Trent River in the Town of Campbellford ON. The project also includes upgrades to the arterial road approaches including a new roundabout.

Construction of an interchange over Highway 640 at Urbanova Avenue

**Electrical Engineer | City of Terrebonne |
Terrebonne, Canada | 2022- ongoing**

This project consisted in providing engineering services for the implementation of lighting systems with electrical distribution and traffic signals for the new interchange.

Old Church Road Bridge rehabilitation

**Electrical Lead | Regional Municipality of Peel |
Ontario, Canada | 2020 - 2021**

Detailed design for the temporary traffic signal signals during the construction staging at Old Church Road bridge.

Pedestrian Cross-Over (PXO)

**Electrical Lead | City of Port-Hope | Port-Hope.
Ontario, Canada | 2020- 2021**

Detailed design for two pedestrian crossovers in the city of Port Hope (PXO Type B and Type C).

***Highway 404 Mid-Block Connector North of
16th Avenue from Leslie Street to Woodbine
Avenue***

**Electrical Lead | Region of York | Town of
Richmond Hill & City of Markham, Ontario, Canada
| 2017 - Ongoing**

Detail design of full illumination and traffic signals for the Mid-Block crossing through Richmond Hill and Markham. The design includes new LED illumination with existing and new independent poles. The traffic signal design includes modifications to two existing intersections for AODA compliance, and three new T-intersection traffic signal installations complete with AODA compliance.

***Contract Administration for the LED
conversion project***

**Electrical Lead | City of Montreal, Saint-Laurent
borough | Montreal Quebec, Canada |
2019 - 2021**

Contract administration and construction progress reporting for the LED conversion contract for luminaire replacement on hydro poles within the Saint-Laurent borough limits

***Widening and Reconstruction of CR 17 in the
Hawkesbury/Champlain Area***

**Electrical Lead | Prescott and Russell |
Hawkesbury, Ontario, Canada | 2019 - 2020**

This project includes the detail design for 2 traffic signal upgrade and 1 new traffic signals on CR 17 between Highway 34 and Tupper Street. The project also included full illumination between the Walmart entrance to Tupper Street 400m East of Tupper Street.

***Highway 2 Bus Rapid Transit from Liverpool
Road to Brock Road***

**Electrical Lead | Region of Durham | Pickering,
Ontario, Canada | 2016 - 2020**

Detailed design of full illumination for Highway 2 from Liverpool Road to Brock Road for the continued expansion of the Highway 2 Bus Rapid Transit facility in Durham. The design was completed utilizing independent poles augmented with existing hydro poles where required. The installation of luminaires on the Veridian Connections Inc. poles are to comply with full R22/04 submission procedures as well as Hydro One corridor restrictions.

***Intersection Improvement at CR 23 and Coons
Road***

**Electrical Lead | United Counties of Leeds and
Grenville | Brockville, Ontario, Canada | 2019**

Design of new traffic signals and lighting for the reconstructed intersection of CR 23 and Coons Road. The design stage included photometric studies of both intersections using. The scope also included a traffic study and signal timing plans with Synchro.

***Detailed Design and Contract Administration
for the Rehabilitation/Replacement of 15
Structures***

**Electrical Lead | Municipality of Clarington |
Clarington, Ontario, Canada | 2016 - 2019**

GHD was retained to conduct environmental assessments, detailed design, contract administration and site inspection of four (4) bridges, nine (9) culverts, and two (2) pedestrian bridges located within the Municipality of Clarington. The scope also temporary traffic signals during the construction staging.

***LED Replacement Project for the Blue Water
Bridge***

**Project Manager | Federal Bridge Corporation
Limited | Point Edward, Ontario, Canada |
2016 - 2019**

Detailed design and contract administration for the replacement of high-pressure sodium (HPS) and metal halide (MH) exterior light fixtures to modern, energy-efficient, low-maintenance LEDs at the Blue Water Bridge Plaza. The service included the collection of information on sites to establish an expertise concerning the condition of the existing installations, preparation photometric analysis, applications to the Save On Energy Program, preparation of the preliminary design report, detailed design and contract documents.

Synchronization on Cavendish Boulevard

Traffic Signals

Project Manager | City of Côte-Saint-Luc | Côte-Saint-Luc, Quebec, Canada | 2018 - 2020

Traffic study and detail design for the traffic signal upgrade for 5 intersections and replacement of traffic signal equipment along Cavendish Boulevard between Fleet and Mackle Avenue. Tasks included site surveys, the inspection of traffic signal bases and poles by a structural integrity expert, estimations, feasibility study, preparation of preliminary and final plans and specifications, and contract admin.

Reconstruction of Route 333 at Chemin du Lac Bertrand

Electrical Lead | City of Saint-Hippolyte | Saint Hippolyte, Quebec, Canada | 2018

Design of new traffic signals and lighting for the reconstructed intersection. The design stage included photometric studies of both intersections using Agi32 and the preparation of plans and specifications according to MTMDET approval procedures. The scope also included a traffic study and signal timing plans with Synchro.

Main Street and Mountainview Road North Bridge Rehabilitations

Electrical Lead | Town of Halton Hills | Georgetown, Ontario, Canada | 2018 - 2020

Scope of work for this project included the preliminary design, detailed design, preparation of tender documents and contract administration and site inspection services for two bridges over the CN owned rail line in the Town of Halton Hills. The scope also temporary and permanent lighting.

Trout Lake Road Bridge Rehabilitations

Electrical Lead | City of North Bay | North Bay, Ontario, Canada | 2017

Detail design of temporary and maintaining permanent illumination during the construction staging during the structure rehabilitation. Provided a benefit/cost analysis to justify our selection of portable temporary traffic signals due to hydro availability and short construction duration.

Intersection Improvements P-648-16

Electrical Lead | Region of Halton | Ontario, Canada | 2016 - 2017

Engineering services for preliminary and detailed design, contract tender preparation, contract administration, inspection and material testing for Upper Middle Road, Mid-Block Pedestrian Crossing at Morrison Creek, Trafalgar Road at Cornwall Road in

the Town of Oakville, Derry Road at Sauve Street in the Town of Milton, and Appleby Line at Britannia Intersection Road in the City of Burlington. Traffic signals and geometry in conformance with AODA legislation.

VIVA Network Expansion – 2017 Network Update Plan

Project Engineer | Regional Municipality of York | Markham, Ontario, Canada | 2015 - 2016

Traffic signal designs impacted by the modification of 12 intersections along the Viva's Silver Route to accommodate new and updated stops along the route. Intersection improvements will also implement new accessibility standards as developed by York Region in conformance with AODA legislation.

Jacques-Cartier Bridge, Steel and Electrical Work for the Lighting Accent of Section 7

Electrical Lead | PJCCI | Montreal, Quebec, Canada | 2015 - 2016

Provided preliminary and detail design services as part of the AECOM/WSP joint venture, for the detail design for Jacques Cartier and Champlain Bridges Incorporated (PJCCI). The service included the preparation feasibility assessment, preliminary design report and contract documents for the installation of the accent illumination concept by Studio Moment Factory. Anne Marie was responsible for the coordination with stakeholders, lighting equipment review and power distribution. She was also responsible for the preparation of two furniture contracts in advance of the installation contract.

Highway 2 Bus Rapid Transit corridor thru Harwood Road, Westney Road, Liverpool Road, Brock Road and Whites Road

Electrical Lead | Region of Durham | Ajax/Pickering, Ontario, Canada | 2013 - 2016

Detail design of full illumination for the Highway 2 Bus Rapid Transit (BRT) Corridor through Ajax and Pickering. Designs included corridor thru Harwood Road, Westney Road, Liverpool Road, Brock Road and Whites Road. The design was completed utilizing existing and new hydro poles augmented with independent poles, where required. The installation of luminaires on the Veridian Connections Inc. poles complied with full R22/04 submission procedures.

Brock Road-Dellbrook Avenue Northerly to Rossland Road

Project Engineer | Regional Municipality of Durham | Pickering, Ontario, Canada | 2013 - 2016

Detail design of full illumination along Brock Road from Dellbrook Avenue northerly to Rossland Road. The

project involved widening of Brock Road from 2 to 4 lanes, while protecting for a future 6 lane cross section in two contract packages. The electrical design included temporary illumination during the construction staging and coordination with the region's traffic section for the joint use poles at the intersections within the project limits. The installation of luminaires on the Veridian Connections Inc. poles was done as an advance contract with full R22/04 submission procedures.

Highway 12 Midland Development – Traffic Impact Study

**Electrical Review | Highway 12 Developments Inc. |
Barrie, Ontario, Canada | 2013 - 2015**

Quality review of the contract documents for the traffic signal design at Highway 12 and a commercial entrance.

Victoria Street (Regional Road 22) – Lakeridge Road to Seaboard Gate

**Electrical Lead | Region of Durham | Oshawa,
Ontario, Canada | 2012 - 2015**

Detail design of new LED illumination (1.5 km) along Victoria Street between Lakeridge Road and Seaboard Gate. The design was completed utilizing new hydro poles and augmented with independent poles, where required. The installation of luminaires on the Veridian Connections Inc. poles complied with full R22/04 submission procedures.

Nichol Avenue Roundabout

**Project Engineer | Town of Whitby | Whitby,
Ontario, Canada | 2009 - 2010**

Design of roadway illumination for a roundabout on Nichol Avenue at Adanac Drive which was the first roundabout constructed in the town of Whitby. Illumination was designed to meet recommendations from IESNA Design Guide for R-A-B Lighting DG-19-08. Whitby standard decorative coach lights on decorative poles. Coordination with Whitby Hydro on hydro utility relocations was also required as part of the assignment.

Steeles Avenue Reconstruction

**Project Engineer | Regional Municipality of Halton |
Halton Hills, Ontario, Canada | 2010 - 2015**

Detailed design of illumination and traffic signals for two phases. Design for Phase A of the project included Steeles Avenue from Trafalgar Road east to Eighth Line north and for Trafalgar Road from Steeles Avenue south to the Highway 401 E-N/S Ramp Terminal. The electrical component of the assignment included traffic signal design for four intersections (Trafalgar Road, Calloway development entrance, 8th

Line North, and Highway 401 E-N/S Ramp Terminal). Design of the Highway 401 E-N/S Ramp Terminal intersection required review and approval by MTO. Design of new illumination along Steeles Avenue and Trafalgar Road within the project limits was also completed in close coordination with Halton Hills Hydro for joint use illumination on relocated hydro poles. The project included temporary illumination and temporary traffic signals during construction staging. Design for Phase B of the project extends the road reconstruction from Eighth Line North to just west of Winston Churchill Boulevard. The project included design of three intersections (Eighth Line North, Ninth Line South, and Tenth Line North) and full roadway illumination throughout the project limits. Traffic signal installations were all designed to comply with AODA O.Reg. 413/12 pedestrian accessibility requirements.

County Road 28/21 Roundabout

**Project Engineer | Town of Cobourg | Cobourg,
Canada | 2009 – 2011**

Detailed design for the installation of new illumination for the roundabout at CR 21/CR 28.

Hunt Club Road Extension

**Project Engineer | City of Ottawa | Ottawa, Ontario,
Canada | 2009 - 2011**

Detailed design of the full illumination along Hunt Club extension from Hawthorn Road to the proposed Highway 417 at Hunt Club Road interchange; Phase 1, Parts A and B. Extensive coordination with Hydro Ottawa was required for the joint use poles and power supply connections. Coordinated interchange illumination with the MTO and designed the illumination to its standards.

Mapleview Drive Reconstruction

**Project Engineer | City of Barrie | Barrie, Ontario,
Canada | 2009 - 2010**

Detailed design for the lighting along Mapleview Drive (1.5 km) between Bryne Drive and Bayview Drive.

Bayview Drive Reconstruction

**Project Engineer | City of Barrie | Barrie, Ontario,
Canada | 2009 – 2010**

Detailed design for the lighting along Bayview Drive (1.5 km) between Mapleview Drive and Big Bay Point Road.

Bell Boulevard East Extension

**Project Engineer | City of Belleville | Belleville,
Ontario, Canada | 2009 – 2010**

Detailed design for the roadway illumination and traffic signal design for the easterly extension of Bell

Boulevard from North Park Street to Cannifton Road. The project included four sets of traffic signal design including temporary signals, Mid-Block crossing, full roadway illumination, walkway lighting and underpass/embedded work.

Victoria Street (Regional Road 22)

Project Engineer | Region of Durham | Whitby, Ontario, Canada | 2009 - 2010

Detailed design of new illumination along Victoria Street from 609 m east of Thicksen Road and to 749 m west of Thicksen Road. The existing illumination along Thicksen Road to the ramp terminal at the Highway 401 interchange was retrofitted as part of the work.

Simcoe Street (Regional Road 2) - Eastwood Avenue to Conlin

Project Engineer | Durham Region | Oshawa, Ontario, Canada | 2010 - 2011

Detailed design of new LED illumination (1.5 km) along Simcoe Street between Eastwood Road and Caswell Avenue. The design was done using the hydro poles and augmented with independent poles where required.

Main Street and Tenth Line South Traffic Signalization

Project Engineer | Town of Whitchurch-Stouffville | Whitchurch-Stouffville, Ontario, Canada | 2009-2010

Detailed design of new traffic signals and illumination for the Main Street - Tenth Line South intersection and full illumination along Tenth Line South including two roundabouts.

Eulalie Street Extension

Electrical Lead | City of Oshawa | Oshawa, Ontario, Canada | 2009

Detailed of the new LED illumination for the extension of Eulalie Street. The design incorporated existing and new independent poles.

Brock Road Grade Separation

Project Engineer | Regional Municipality of York | Whitby, Ontario, Canada | 2009-2010

Detailed of the full illumination for the grade separation along Brock Road. Design for temporary illumination during the construction staging.

Downtown Revitalization

Project Engineer | City of Welland | Welland, Ontario, Canada | 2008-2011

Detailed design supervision for the lighting associated with the reconstruction of various roadways in the downtown area. The project included streetscaping features and improvements to street illumination using decorative street lighting. Implementation is being carried out in phases. Work involved roadway reconstruction to accommodate bicycles, street parking, and pedestrians to enhance the downtown environment.

D'Arcy Street

Project Engineer | Town of Cobourg | Cobourg, Canada | 2009 - 2010

Detailed design of new illumination along D'Arcy Street between Albert Street and Elgin Street. The design included two roundabouts.

Kennedy Road

Project Engineer | City of Brampton | Brampton, Canada | 2006 - 2008

Detailed design of the full illumination along Kennedy Road between First Gulf Road and the Mississauga city limit. The project also included underpass illumination retrofit to accommodate the structure over Highway 407.

Bovaird Drive

Project Engineer | Regional Municipality of Peel | On, Canada | 2007 - 2010

Detailed design of the traffic signals along Bovaird Drive at the following intersecting roads: Dixie Road, Torbram Road, Bramalea Road, and Mackay Street-Fernforest Drive.

Hanlon Expressway

Project Engineer | City of Guelph | Guelph, On, Canada | 2007 - 2010

Detail design of temporary traffic signals, permanent traffic signals, and illumination at the Hanlon Expressway and Laird Road and Hanlon Expressway and Claire Road. Both intersections were designed to Ministry of Transportation Ontario standards.

Bowmanville Community Park

Project Engineer | Municipality of Clarington | Clarington, On, CA | 2006

Detailed design and lighting calculations to evaluate the potential light trespass on the Highway 401 corridor at Green Road from the proposed Bowmanville Community Park (Phase 1 and Phase II) illumination. The evaluation was completed for the

Ministry of Transportation Ontario property line at the right of way along Highway 401 as well as the travelled roadway.

Orangeville South Arterial Road

Project Engineer | Regional Municipality of Peel & Town of Caledon | Orangeville & Caledon, Ontario, Canada | 2003-2004

Detailed design for a proposed 3.9-km, 4-lane arterial from Townline Road in Orangeville in the west through Peel Road 136 (Region of Peel) and Willoughby Road in Caledon to Highway 10 (Ministry of Transportation) in the east. McCannell Avenue (Orangeville), opposite the South Arterial Road (SAR) at Highway 10 will also be realigned. Responsible for detail design of full illumination along South Arterial Road between Willoughby Road and the Credit River Bridge. The electrical work included the coordination of power supply and feed for the OBRAG railway crossing was also provided, electrical embedded ducts and future illumination provisions for the Credit River Bridge.

Simcoe Street

Project Engineer | Durham Region | Oshawa, Ontario, Canada | 2003 - 2004

Anne-Marie completed the electrical detailed design and contract documents for full decorative illumination from King Street to Highway 7A. Completion of the illumination design in coordination with landscape treatments and streetscaping within the project limits. In addition, hydro lines running along both sides of the roadway dictated that the decorative illumination be installed in the median only. The project also included underground provisions for Region of Durham traffic signal designs and coordination of illumination within the intersections.

Albert Street at Dufferin Street

Project Engineer | Town of New Tecumseth | New Tecumseth, Ontario, Canada | 2007

Detailed design for of the traffic signals design and interconnection to the CP rail crossing.

Division Street at Ewart Street

Project Engineer | Town of Cobourg | Cobourg, Canada | 2006 – 2007

Detailed design for the new permanent traffic signals at the intersection of Division Street and Ewart Street intersection or the existing roadway.

Eagleson Road & Fernbank Road

Project Engineer | City of Ottawa | Ottawa, Ontario, Canada | 2006

Detailed design for the full illumination design on

Fernbank Road between Eagleson and Terry Fox Drive and Eagleson Road from the intersection to existing lighting system. Lighting at the traffic signals was coordinated with the city's Traffic Section.

Bronson Avenue and Carling Avenue Road

Project Engineer | City of Ottawa | Ottawa, Ontario, Canada | 2006

Detailed design for of the illumination retrofit and traffic signal coordination to suit the intersection modifications.

Truck Route

Project Engineer | City of Sault Ste-Marie | Sault Ste-Marie, Canada | 2004 – 2005

Detailed design for the full conventional illumination along the new SSM Truck route between Queen Street and Wellington Street. The design also included lighting retrofit along Queen Street from new truck route connection and Huron Street.

Holland River Bridge

Project Engineer | Regional Municipality of York | Ontario, Canada | 2007

Detailed design for the review and approval of temporary lane closure traffic signals and permanent illumination design for the rehabilitation.

Laskay Bridge

Project Engineer | Regional Municipality of York | Ontario, Canada | 2007

Detailed design for the review and approval of temporary lane closure traffic signals, illumination and advance flasher beacons design for structure rehabilitation.

Markham Bypass from North of Highway 7 to Highway 1 km North of 16th Avenue

Project Engineer | Regional Municipality of York | Ontario, Canada | 2003-2004

Detailed design for the temporary and permanent traffic signals and illumination for all intersections along the new Markham bypass.

East Parking Lot-South Side-8 Wing

Project Engineer | Defence Construction Canada | CFB Trenton, Ontario, Canada | 2000-2001

Detailed design for the parking lot illumination utilizing induction lighting and distribution modifications. The project also included detail design of traffic signals at the parking lot entrance on Old Highway 2.

Police/Justice Training Facility

EIT | Algonquin College | Ontario, Canada | 2002

Detailed design for the lighting calculations and contract drawing preparation. Prepared detail design for the parking lot illumination retrofit and distribution modifications.

King Street Lighting

EIT | Town of Cobourg | Cobourg, Canada | 2000-2001

Detailed design for the distribution system of the full decorative illumination from Ontario and William Street to Division Street. Project scope included design of traffic signals at King Street and George Street intersection utilizing decorative, powder coated traffic signals and poles. A decorative display kiosk was also designed to house the traffic signal controller effectively hiding it from public view.

Chemong Causeway Bridge Repairs

EIT | County of Peterborough | Peterborough, Canada | 1999

Anne Marie completed the electrical detailed design for the lighting calculations and contract drawing preparation for the temporary traffic signal design.

Career history

2016 - present	GHD
1999 - 2016	AECOM

**MC-ISO-TC 274 Chair's Report
November 21, 2025**

Jennifer A. Veitch, Ph.D.

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A. Membership at 2024-11-29

Chair: Jennifer Veitch
Vice-Chair: Cristian Suvagau
Members: Michael Brown
Shirley Coyle
Chad Greene
Jeff Hovis
Liviu Ivanescu
Toby Lau
Sharon McFadden
Sami Qutob
Alstan Jakubiec [from June 2025]
Conor Sampson [until October 2025]

Any Canadian is welcome to join, but especially anyone already affiliated with the CNC/CIE. It does require a separate application to the SCC, which can be done here: <https://www.scc.ca/en/standards/committees/iso-tc-274-light-and-lighting>.

New Division members elected to the CNC/CIE in 2023 have been asked to enroll as members of MC-ISO-TC274. I note that Lynn Asselin and Robin Atkin have not yet completed this process.

B. Activities

1. Ballots

Annex A shows the record of our voting since the last annual meeting. There have been 14 ballots and the annual activity report to the SCC. We missed one ballot entirely (shown in red) and abstained a few times when there was no indication of consensus or no one was available to review the material.

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

ISO and the IEC have developed a new Online Standards Development (OSD) platform for all of their document-producing projects. This will change the process for commenting on documents and responding to ballots. Part of the problem this year has been that individual mirror committee members didn't have access to documents on the OSD for review, and it was a slow process to have the SCC download documents and get them to us. I'm told that there will be a mechanism to provide OSD access and a change to the commenting mechanism, but have not yet been trained to use it. Members should watch for this information in the announcements that they receive from the SCC.

2. ISO/TC 274 Plenary meeting

Canada hosted the ISO/TC 274 Plenary meeting at McGill University in Montreal June 3-6, 2025. Conor Sampson led the organizing, assisted by Nicolea Apostolidis. We had sponsorship from the Canadian National Committee of the CIE, BC Hydro, CSA Group, Cree Lighting Canada, Luxtec, and HLB Lighting Design. Funds from BC Hydro and CSA Group were paid to the SCC and then disbursed by the SCC to repay members who had advanced funds for expenses. Funds from the other sponsors were handled by the CNC/CIE.

By all accounts the members found the meetings to be effective and valuable, if rather hot. (There was a heat wave, and the historic building was not air conditioned.) Thanks to all involved for making Canada a welcoming host!

Information concerning the resolutions taken at the meeting is available on request, or MC members can access them on the SCC Standards Hub.

The 2026 plenary meeting will be in Switzerland (city to be decided) in the week of May 18-21.

Decision to be taken: Who will represent Canada as our Head of Delegation at the 2026 plenary meeting?

3. Contributions to ISO/TC 274 and ISO/TC 274 work plan

We have had strong participation in the parent committee in ISO. Conor Sampson, however, has had to resign his roles in ISO/TC 274. We need not fill them with a Canadian, although we could make a nomination if there were a volunteer. Additional volunteer experts are always welcome.

<i>Current Activities</i>			<i>Comment</i>
ISO/TC 274 CAG	Chair Advisory Group	T. Lau	This group revised the ISO/TC 274 Strategic Business Plan and it was published on the ISO website in July.
ISO/TC 274-JWG 1 [CIE JTC 6 (CIE-ISO)]	Energy performance of lighting in buildings	T. Lau	Since Nov. 29, 2024, this committee published ISO/CIE 10916:2024 <i>Light and lighting — Energy performance of lighting in buildings — Calculation of the impact of daylight utilization</i> It has these open projects: ISO/AWI TS 23775 <i>Light and lighting — Building information modelling properties for lighting — Daylight louver systems</i> : ISO/CIE AWI 25176 <i>Light and lighting — Daylight in buildings — BSDF data generation for complex fenestration systems</i> CD [commenting] ballot recently concluded. There is a task group considering a possible indoor environmental quality (IEQ) standard. The upcoming: revision of ISO/CIE 20086 <i>Energy performance of lighting in buildings</i> will move this document to the ISO 52000 series, integrated with CEN to produce a single EN ISO/CIE document.
	ISO/CIE AWI TR 3092 <i>Light and lighting — Energy performance of lighting in buildings — Explanation and justification of ISO/CIE 20086</i>	T. Lau – Project leader	The document was published in September 2023. Discussion continues concerning how to post the Excel spreadsheet on the ISO TC/274 web page as public information.
ISO/TC 274 WG 2	Commissioning process of lighting systems	T. Lau	New project this year: ISO/CD 21274 [Under development] <i>Light and lighting — Commissioning of lighting systems</i> converting the former TS into an IS. Commenting CD ballot recently concluded.
ISO/TC 274 JWG 5 [CIE JTC 15 (CIE-ISO)]	Lighting for workplaces	J. Veitch	ISO/CIE 8995-1:2025 <i>Light and lighting — Lighting of work places — Part 1: Indoor</i> was published in February. This WG has been closed.
ISO/TC 163	Liaison representative from ISO TC 163 to ISO TC 274	T. Lau	
ISO/TC 205/WG 10 [Commissioning]	Liaison representative from ISO TC 274 to ISO TC 205/WG10	T. Lau	.

<i>Current Activities</i>		<i>Comment</i>
ISO /TC 274	Liaison representative from ISO TC 274 to ISO TC 205/WG 7	C. Sampson until Oct. 2025
ISO/TC 205/JWG 12	ISO/TC 274 co-convenor	C. Sampson until Oct. 2025
ISO/TC 274/AHG 1	Daylight	This ad-hoc group, led by Jens Christoffersen (DK), is considering the potential for a standard on daylighting. An open workshop on the topic was held in Montreal in June.
ISO/TC 274/AHG 2	Sports lighting	This ad-hoc group, led by Shuxiao Wang (CN), is considering the potential for a standard on sports lighting.

C. Relations between the CNC/CIE and SCC:

1. Mirror committee accreditation and funding

In January 2025, on our behalf, I completed our annual Application for Committee Accreditation and Financial Assistance for the fiscal year 2025-26. It is not appended because there were minimal changes from the prior year. We were successful, although neither scores nor rankings were reported this year. We received \$1500 from the SCC in addition to \$5000 in support from external stakeholders, BC Hydro and CSA. This contributed to the hosting of the plenary meeting in Montreal.

The SCC is considering changes to its system of committee accreditation and review. Unfortunately, I lacked the time to participate in the consultations for the new system.

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

Background: 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 Terms of Reference clauses that govern such matters as the selection of the Chair and Vice-Chair of the mirror committee.

Status: The application requires modification, which continues to be held up at my end because of other duties. I had not completed this task when the Secretary of the CNC/CIE had to step down. It would be preferable to have a CNC/CIE Secretary in place when we file this application, but it is not impossible. A further complication is that one of the modifications concerned the need for an internal archiving system that members could query in case of interest. Changes to the NRC networks are making this a challenge. Dr. Li-lin Tay (Team Lead for the Photometry and Radiometry team at NRC Metrology) and I are exploring options, with the hope of resolving this in the coming year.

D. Other organizations in liaison

We continue to have an informal liaison with CSA C419, with several members in common including its Chair, Cristian Suvagau.

E. Upcoming actions and issues

- Transitioning to the use of the OSD for document commenting.
- Onboarding new members including two of our CIE Division Members
- Possibly, adapting to a new SCC system for committee accreditation.

Annex A – Record of MC-ISO-TC-274 Voting between 2024-11-30 and 2025-11-21

Item #	Title	Circulated	SCC due date	Questions	Vote	Date ballot cast
ISO/CIE FDIS 15469	Comments on ISO/CIE FDIS 15469 CIE Standard General Sky	2025-10-21	2025-11-10	1 Do you have any comments related to the document? Yes* No Abstention	No	2025-11-10
ISO/CD 21274	VOTE:2025-11-06 ISO/CD 21274 Light and lighting — Commissioning of lighting systems	2025-09-25	2025-11-06	1 Do you have any comments related to the Committee Draft? Yes* No Abstention	Abstain	2025-11-10
CD ISO/CIE 25176	Light and lighting — Daylight in buildings — BSDF data generation for complex fenestration systems	2025-07-16	2025-09-02	1 Do you have any comments related to the Committee Draft? Yes* No Abstention	Yes	2025-09-03
ISO/NP TS 23377 5	Light and lighting — Building information modelling properties for lighting — Daylight louver systems	2025-07-10	2025-09-18	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	Approval 1 Draft document will be registered as new project in the committee's work programme (stage 20.00) 3NA 4Yes 5 No 6Yes * 7 No	2025-09-18

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				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 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 6 3. Do you wish to add any additional comments? Yes * No 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 (*) A Comment is required for this answer value. Justification statement as per National Body ISO/IEC commenting		

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				template. (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”		
	Survey for comments on ISO/DIS 24359-1	2025-03-26	2025-06-04	Survey for comments on ISO/DIS 24359-1 Note: ISO/TC 205 has initiated the DIS ballot for ISO/DIS 24359-1, Building commissioning process planning — Part 1: New buildings		
	Survey for comments on ISO/CD 23299-1 Railway	2025-04-05	2025-05-06	SO/CD 23299-1 Railway applications — Interior electrical lighting for passenger rolling stock — Part 1: Mainline Note: As liaison committee ISO/TC 274 may provide comments on this CD consultation. Therefore, we kindly invite the members to check the document and provide any comments using the commenting form.	Abstain	2025-04-24
	Survey for comments on revised SBP	2025-04-22	2025-05-02	Do you have any comments on the CAG proposal for the updated SBP? No Yes * Abstain	yes	2025-04-24
	Survey for comments on ISO/TS 23764	2025-03-26	2025-04-18	Survey for comments on ISO/TS 23764 Note: Initiation of CD consultation for ISO/TS 23764, Methodology for achieving non-residential zero-energy buildings (ZEBs).	Abstain	2025-04-22
	Survey for comments on ISO/CIE DIS 15469	2025-01-11	2025-02-17	Survey for comments on ISO/CIE DIS 15469 Note: Survey for comments on ISO/CIE DIS 15469, Spatial distribution of daylight — CIE standard general sky, which was prepared by CIE for DIS ballot. 1 Do you have comments on ISO/CIE DIS 15469? Yes *	No	2025-02-18

Item #	Title	Circulated	SCC due date	Questions	Vote	Date ballot cast
				No Abstain		
	Vote on Establishment of Liaison to ISO/TC 256	2025-01-15	2025-02-05	Do you agree with draft resolution 169/2025? Yes No (please provide reason) * Abstain	yes	2025-02-02
	ISO/CD 20734 Building Environment Design — Daylighting design procedure for indoor visual environment Note: Parallel Committee Draft consultation ballot for ISO/CD 20734 which is developed in ISO/TC 205/JWG 12 "Joint ISO/TC 205 - ISO/TC 274 WG: Indoor Visual Environment"	2024-12-13	2025-01-23	Commenting ballot	abstain	2025-02-02
	Vote: 2025-01-15 Mirror Committee Activity Report Submissions for Calendar Year 2024	2024-11-14	2025-01-15	1 Is the mirror committee updating a previously submitted activity report? Yes, and we have submitted a significantly revised activity report No, we wish to submit our previous activity report 2 Is the mirror seeking financial assistance from SCC? No Yes, and we have submitted a significantly	Here are our responses. Note that in 2025 this MC will host the plenary of ISO/TC 274 in Montreal. Per instruction, I also have uploaded our Form D showing the attendance and noting that we will need to reimburse the local organizers for their expenses for the meeting. If we have additional funding available to us then we would support our Head of	2025-01-15

Item #	Title	Circulated	SCC due date	Questions	Vote	Date ballot cast
				revised activity report Yes, and we wish to resubmit our previous activity report 3 Is the mirror committee providing external financial contributions? Yes, our Form B(s) are attached No	Delegation to travel from Vancouver to the meeting. Also please note that both external stakeholders have emphasized to me that they must be invoiced BEFORE March 31, 2025. They are paying their contributions from the current fiscal year and want to use their budgets. (Like the federal government, both have March 31 as their fiscal year ends.) 1 Is the mirror committee updating a previously submitted activity report? No, we wish to submit our previous activity report 2 Is the mirror seeking financial assistance from SCC? Yes, and we wish to resubmit our previous activity report 3 Is the mirror committee providing external financial contributions?	

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					Yes, our Form B(s) are attached	
	National Standard Strategy Mirror Committee Survey https://forms.office.com/pages/responsepage.aspx?id=BUJNsVLgFU67KYzULVWD9nLkbsmqdH9Mp-UmMOaK9DJUOFB CMFBQSk9RODFQU0VQT1c5UIZITjdBSi4u&route=shorturl		2025-01-15	Online survey	Completed the online survey.	2025-01-15
	FDIS ISO/CIE 8995-1	2024-10-29	2024-12-10	Do you approve the technical content of the final draft? Approval Approval with corrections* Disapproval* Abstention (*) A Comment is required for this position. ISO/IEC commenting template.	Approval with corrections	2024-12-09
	Liaison to ISO/TC 256	2024-11-18	2024-12-02	Call for liaison representative to ISO/TC 256, Pigments, dyestuffs and extenders Note: Please enclose a short CV in case of nomination or send it by mail to the ISO/TC 274 CM.	no	2024-12-02

CNC/CIE Website Report November 2025

Sharon McFadden and Jennifer Veitch

Domain

We are and will remain <https://www.cnc-cie.ca/>.

Website Upgrade

Over the past year, the website was upgraded to Joomla 5 and was moved to a new host. When you visit the website, you will see some changes to the layout and to the menu items. However, the functionality of the website is unchanged. We would like to thank Bob Bridges for his many years of support in hosting and maintaining our website, and we look forward to working with William Ratke who will now be carrying out those functions. Thank you also to the subcommittee members: Venkat Venkataranaman and Sami Qutob, for their assistance during the redesign and transition.

Usage

Unfortunately, the usage statistics were not collated prior to the changeover. In the past month we have had 1025 unique visits of which 75 were for greater than 30 seconds.

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

Content

Sharon continues to update the website with the latest information about new publications as well as CIE events, and relevant national and international lighting events. Members are encouraged to send information on upcoming lighting events.

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.

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