COMMISSION INTERNATIONALE DE L'ÉCLAIRAGE
INTERNATIONAL COMMISSION ON ILLUMINATION
INTERNATIONALE BELEUCHTUNGSKOMMISSION

Canadian National Committee Comité National Canadien

CNC/CIE Annual Report 2008

Minutes of 53rd Annual Meeting
2008-October-24

and

Division Members' Reports

NRC·CNRC
Institute for National Measurement Standards • Institut des étalons nationaux de mesure • Ottawa, Canada, K1A 0R6, Fax (613) 952-1394

COMMISSION INTERNATIONALE DE L'ÉCLAIRAGE
INTERNATIONAL COMMISSION ON ILLUMINATION
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Canadian National Committee Comité National Canadien

MINUTES OF THE 53rd ANNUAL CNC/CIE MEETING

2008-October-24

The 53rd annual meeting of the Canadian National Committee of the Commission Internationale de l'Éclairage (CNC/CIE) was held on Friday, October 24, 2008 at the University of Toronto Emerging Communications Technology Institute (ECTI), Room BA7180 (7th floor), 40 St. George Street, Toronto, Ontario, Canada M5S 2E4.

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

CIE	Commission Internationale de l'Éclairage
CNC	Canadian National Committee
CNC/CIE	Canadian National Committee of the CIE
M/AM	Members/Advisory Members
CIE-DD	CIE Division Director
CIE-BA	CIE Board of Administration
CIE-CB	CIE Central Bureau
CIE/USA	US National Committee of the CIE
NC	CIE National Committee
TC	CIE Technical Committee
NRC-INMS	Institute for National Measurement Standards at the National Research Council of Canada
NRC-IRC	Institute for Research in Construction at the National Research Council of Canada
NRC-IRO	International Relations Office at the National Research Council of Canada
CISET	NRC advisory Committee on International Science, Engineering and Technology
DRDC	Defence Research and Development Canada
IESNA	Illuminating Engineering Society of North America
ISO	International Organization for Standardization
SCC	Standards Council of Canada

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

The 53rd annual meeting of the Canadian National Committee of the Commission Internationale de l'Éclairage (CNC/CIE) was called to order at 9:30am on Friday, October 24, 2008 by L.A.!Whitehead, President.

Seventeen Members and Advisory Members were in attendance. The list of all attendees, regrets and proxies is given in Appendix!A. Two guests were in attendance for part of the meeting. At the request of the President, attendees introduced themselves.

The President expressed his thanks to V.!Venkataramanan of the Institute for Optical Sciences at the University of Toronto for hosting this meeting.

The agenda as circulated by email (Appendix!B) was accepted.

In Memoriam – W.K.!Adrian (1930–2008): A.R.!Robertson presented a brief overview of the life of Dr.!W.K.!Adrian, a long-time member of the CNC/CIE. He included the letter of condolence from Dr.!F.!Hengstberger, President of the CIE. (This letter is attached to the Secretary's Report.) He also noted that an obituary has been published in the *CIE NEWS*, Number 85, June/2008.

2. Minutes of the 52nd CNC/CIE Annual Meeting:

The secretary indicated that an electronic version of the Minutes of the 52nd Annual Meeting had been emailed to all Members and Advisory Members on 2008-October-17. It was moved by J.A.!Veitch, seconded by M.K.!Timmings, that the Minutes be accepted as distributed. Passed.

The action items from the 52nd Annual Meeting (Appendix!C) were considered and the actions taken are also reported in Appendix!C.

A.!Silbiger asked about the renewal of lighting expertise indicated in Item 8.2 of the Minutes. L.A.!Whitehead indicated that this would be discussed later in this meeting. (See item 15.3 – Any Other Business.)

There were no further Matters Arising.

3. President's Report:

L.A.!Whitehead presented a brief verbal report indicating that there has been little activity this past year. He stated that he plans to stay informed on CIE matters and he likes to receive feedback from all of the CNC/CIE.

4. Vice-President's Report:

J.A.!Veitch presented her report, which is attached as Appendix!D. She added that she would like to make better contact with the SCC-ISO activities in Canada in order to involve more Canadians in our work.

5. Secretary's Report:

A.A. Gaertner presented his report, which is attached as Appendix!E. He briefly summarised each item in the report. His report also contained the letter of condolence re W.K.!Adrian from Dr. F.!Hengstberger, President of the CIE. M.K.!Timmings offered to obtain a new address for the company of Reid Crowther and Partners Ltd.

6. Financial and Publications Report:

K.F.!Lin presented his report (Appendix!F), noting that there are two parts to the report: the CNC/CIE Publication – Canada Financial Report, and the CNC/CIE Publication Sale and Purchase report. He indicated that there was no publications activity this year.

7. Requests for Financial Support:

J.A.!Veitch suggested that the CNC/CIE make a memorial contribution for W.K.!Adrian to the Nuckolls Fund for Lighting Education (http://www.nuckollsfund.org). This is a USA charity that maintains "an endowment fund in support of college-level programs that inspire students with an understanding of light in architecture". After some discussion, it was moved by J.A.!Veitch, seconded by J.!Bastianpillai, that the CNC/CIE make a contribution of $500.00 USA to the Nuckolls Fund for Lighting Education in memory of W.K.!Adrian. Passed.

8. Reports from Canadian Division Members:

Note: The reports received from the Division Members are attached at the end of the Minutes, after all the Appendices.

DIVISION 1 Vision and Colour S.M. McFadden

S.M.!McFadden presented her report. She indicated that the Minutes of the CIE Division 1 meetings are available on the CIE website, and that she can make them available to anyone who cannot access them. She asked that anyone who is interested in participating in the activities of any of the TCs contact her.

DIVISION 2 Physical Measurement of Light and Radiation J.C. Zwinkels

J.C.!Zwinkels presented her report and discussed the main items, noting the items with Canadian participation and the new TCs that have been established.

Reportership R2-33 Laser-based projection displays (*Niall, Canada*) was discussed. S.M.!McFadden noted that K.!Niall had never been contacted by the CIE, and was uncertain as to what he was to do. She indicated that he had prepared a draft report. It was decided that she would discuss this with K.!Niall and J.C.!Zwinkels for further action.

J.A.!Veitch indicated that she had been contacted by the IEEE concerning LEDs. She asked whether there should be a liaison between the CIE and the IEEE in this field. She agreed to follow this up with J.C.!Zwinkels.

DIVISION 3 Interior Environment and Lighting Design J.A.!Veitch

J.A.!Veitch presented her report. She noted that TC3-42 was intended to complement TC3-21. She indicated that future Division 3 issues concern lighting controls to reduce energy use and the inclusion of daylighting in design.

DIVISION 4 Lighting and Signalling for Transport J.!Bastianpillai

J.!Bastianpillai presented his report. He noted that Division 4 had lost two of its valued members: W.K.!Adrian and Tony Ketvirtis. T.!Ketvirtis had turned 86 before his death.

DIVISION 5 Exterior and Other Lighting Applications M.K.!Timmings

M.K.!Timmings presented his report. He pointed out that TC5-27, “Artificial Lighting and its Impact on the Natural Environment”, requires members. J. !Bastianpillai indicated that he wished to be involved in TC5-23 “Guidelines for the Use of Semicylindrical Illuminance in Outdoor Applications”.

DIVISION 6 Photobiology and Photochemistry J.D.Y. Deslauriers

J.D.Y.!Deslauriers was unable to attend this meeting, but he had prepared a report that was circulated by the Secretary. B.D.!Jordan indicated that he was interested in participating in TC6-61 “Measurement of Radiation Using the Phytometric System for Plant Applications”. He will contact J.D.Y.!Deslauriers directly.

------ The meeting stopped for coffee break (10:50-11:05), sponsored by GO Lighting ------

DIVISION 8 Image Technology R. Baribeau

R. Baribeau presented his report. He asked whether the Division Member was responsible for replying to internal division ballots. It was pointed out that he could ask for assistance from other members in deciding how to reply to a ballot.

S.M.!McFadden noted that TC1-72 was also involved in BRDF measurements and that Division 1 has information concerning CIECAM02. B.D.!Jordan indicated that he is on TC8-10 “Office

Lighting for Imaging". He noted that the TC is very active with many reference materials being sent around the world for measurements. J.A.!Veitch stated that she was concerned about the contribution of NRC-IRC to this work, and that she would contact the measurement committee directly herself.

9. Report on CNC/CODATA meeting

R. Baribeau presented a verbal report. He stated that this CNC is primarily concerned with data sharing. Their present concern is how to make raw data available such that anyone can access the data. He noted that making data available may affect the results of grant applications. He commented that the Canadian data involved is very multidisciplinary. The CNC has money available for students to attend their meetings. S.M.!McFadden indicated that there is a concern about how the data was to be stored.

10. CNC/CIE Subcommittee Reports

10.1 CNC/CIE Website report:

J.A.!Veitch presented her report, which is attached as Appendix G. She also demonstrated the website using the computer and projector set up in the meeting room. She indicated that Members may send her information and links that can be put on the website. The inclusion of a 'Member's Only' area on the website was raised for future decision by the CNC/CIE.

10.2 CNC/CIE Finance Subcommittee report:

S.M.!McFadden presented the report (Appendix!H) and discussed the four suggestions of the subcommittee.

A.!Silbiger suggested that Ryerson be added to the list of contacts to which information could be sent concerning the proposed student scholarships.

S.M.!McFadden suggested that a CNC/CIE subcommittee be set up to work on implementing the scholarships. J.A.!Veitch was tasked with writing, during the lunch break, the motion to form this subcommittee.

------ The meeting stopped for lunch (12:10-13:00) ------

J.A.!Veitch presented the following motion, seconded by S.M.!McFadden.

"Resolved that the CNC/CIE establish a Student Award Subcommittee to conduct an annual competition leading to the awarding of a $1000.00 prize for the best paper/scholarly work in a topic within the scope of the CIE Divisions by a student of Canadian citizenship studying at a university in any country, or by any student studying at a Canadian university or working in a student placement in a Canadian institution or company. The committee will establish the precise terms of reference for the award. The first award is to be made at the 2009 AGM of the CNC/CIE.
The President of the CNC/CIE will appoint the Chair of the subcommittee. The chair is empowered to appoint other subcommittee members. The subcommittee will have a minimum of three members."

The motion was passed.

The President, L.A.!Whitehead, appointed V.!Venkataramanan as the first chair of this subcommittee.

11. Revision of CNC/CIE Code of Procedure:

In response to discussions at the CNC/CIE 2007 annual meeting concerning the nomination of CNC/CIE Officers, A.R.!Robertson was requested to revise the CNC/CIE Code of Procedure to formalize the procedure. He has revised the present Code and he presented a Code of Procedure Draft 2008-October-14, attached as Appendix!I. The revisions were discussed and it was agreed that we proceed to ballot.

12. CISET Annual Performance Review of the CNC/CIE:

The Secretary presented his report on the 2007 Annual Performance Review of the CNC/CIE carried out by the NRC-International Relations Office and CISET, attached as Appendix!J. He indicated that this review will be performed each year to justify the annual dues that the NRC-IRO pays to the CIE on our behalf. The President thanked the CNC/CIE Members who had contributed to the CNC/CIE response to this questionnaire. He opened discussion on how the CNC/CIE might respond to this review of our activities. After considerable discussion, the main issues centered on determining how best the CNC/CIE can get CIE information to the Canadian private sector and how best to get information and concerns from the Canadian private sector to the CNC/CIE and to the CIE internationally. It was suggested the Advisory Members and TC members could be asked to give annual reports on their involvement. It was moved by J.C.!Zwinkels, seconded by V.!Venkataramanan, that the CNC/CIE task an Outreach Subcommittee to address the concerns of Question 2a of the CISET review: *Does the Institute for National Measurement Standards/CNC for CIE consult with the domestic science community to identify and consolidate opinions, concerns, suggestions, and perceived challenges, and does it ensure their presentation to and support within the International Affiliation?* Passed. M.K.!Timmings volunteered to be the interim chair of this subcommittee. The sub-committee is to start by building a list of Canadian users, specifiers, and educators in the field of lighting. All members in the CNC/CIE are asked to send M.K.!Timmings any information we have in this regard.

13. CIE Supportive Membership Campaign:

The Secretary introduced the CIE Supportive Membership Campaign, which is a CIE mail campaign to potential Supportive members around the world, introducing the CIE and inviting them to join the CIE. The CIE has invited the CNC/CIE participation in identifying potential companies / organizations in Canada which could be interested in becoming a CIE Supportive Member. S.M.!McFadden pointed out that this CIE activity helps offset membership dues, keeps industry involved in the CIE, and is a good opportunity for Canadian industry to get involved in the CIE. It was also pointed out that Canadian manufacturers do not have the money to be involved in this sort of membership. After further discussion, it was decided that the CNC/CIE should participate in this activity.

14. Nominations and Appointments (CNC/CIE):

The Secretary distributed a list of the current CNC/CIE Members and Advisory Members (Appendix!K).

14.1 Division Members:

The President noted that there were no changes this year.

14.2 CNC/CIE Members and Advisory Members:

The President noted that the term of one CNC/CIE Member, K. F.!Lin, was expiring at the end of December this year. K.F.!Lin indicated that he was willing to continue as Member and Publications Officer/Treasurer, but that he was also willing to pass the position on to someone else.

It was moved by J.C.!Zwinkels, seconded by S.M.!McFadden, that K.F.!Lin be nominated to continue as CNC/CIE Member and Publications Officer/Treasurer. Passed.

A.A.!Gaertner indicated that it was his intention to step down as CNC/CIE Secretary at the end of his present term on 2009-December-31. J.A.!Veitch asked whether Section 4 of the CNC/CIE Code of Procedure stating that 'The Secretariat of the CNC/CIE is located at INMS' requires that the Secretary be from NRC-INMS. It was moved by J.A.!Veitch, seconded by J.C.!Zwinkels, that a subcommittee of three ex-Presidents (A.R.!Robertson (chair), J.A.!Love, and S.M.!McFadden) be formed to clarify the meaning of 'Secretariat' and to nominate a new CNC/CIE Secretary. Passed.

The Secretary noted the appointment of Dr. Alexander Rosemann of BC!Hydro to CNC/CIE Advisory Membership, based on his membership in CIE TC1-70.

15. Other Business:

15.1 Correspondence:

There was none to report.

15.2 Date and Place of next Year's Meeting:

This meeting will be a joint meeting with the CIE/USA, to be hosted by the CIE/USA. J.C.!Zwinkels explained that the ISCC and CORM planned to also hold a joint conference before or after the CIE meeting at the same location. The CIE part of the joint conferences would be focused upon applications from Divisions 3, 4, and 5.

J.A.!Love and V.!Venkataramanan were appointed to liaise with the CIE/USA in the preparation of the technical session at the joint CIE meeting.

15.3 Other Business:

L.A.!Whitehead noted that some of the faculty at UBC are encouraging development of courses for 'Green Architecture'. He has submitted his course on lighting to this program. V.!Venkataramanan indicated that he would be interested in being involved.

16. Adjournment

The meeting was adjourned.

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2009-October-09

CNC/CIE 53rd Annual Meeting

2008-October-24

Action Items

Action Item Number (AI#)	53rd Minutes Item Number	Responsible	Action
1	2	A.A.!Gaertner, J.A.!Veitch	contact SCC re Canadians on ISO TCs and WGs.
2	5	M.K.!Timmings	obtain contact address for Reid Crowther and Partners Ltd.
3	7	A.A.!Gaertner, J.A.!Veitch	memorial for W.K.!Adrian, contribution to Nuckolls Fund
4	8	S.M.!McFadden, J.C.!Zwinkels	update on Division 2 Reportership R2-33 by K.!Niall
5	8	J.A.!Veitch, J.C.!Zwinkels	potential liaison between CIE Div 2 and IEEE concerning LEDS
6	8	J. Bastianpillai, M.K.!Timmings	J.!Bastianpillai to participate in TC5-23
7	8	B.D.!Jordan, J.D.Y.!Deslauriers	B.D.!Jordan to participate in TC6-61
8	10.2	V.!Venkataramanan	Student Award Subcommittee: terms of reference and award
9	11	A.A.!Gaertner	Proceed to ballot CNC/CIE Code of Procedure
10	12	M.K.!Timmings, all	Outreach Subcommittee, list of Canadian Companies
11	13	A.A.!Gaertner	CNC/CIE to Participate in CIE Supportive Membership Campaign
12	14.2	A.A.!Gaertner	forward recommendation re K.F.!Lin as CNC/CIE Member and Publications Officer/Treasurer to NRC-INMS-DG
13	14.2	A.R.!Robertson, J.A.!Love, S.M.!McFadden	Nominating Committee to clarify ‘Secretariat’ and to nominate a CNC/CIE Secretary
14	15.2	J.A.!Love, V.!Venkataramanan	Liaison with CIE/USA re 2009 joint meeting technical session

LIST OF APPENDICES

APPENDIX A

CNC/CIE 53rd Annual Meeting

2008-October-24

Attendees

Nolie Agellon	Ontario Ministry of Transportation (MTO)
Réjean Baribeau	National Research Council (INMS)
Joe Bastianpillai	Lumentech Engineers Inc.
Arnold Gaertner	National Research Council (INMS)
Byron Jordan	FPInnovations (PAPRICAN)
Barbara Kolesnik	AECOM
K. Frank Lin	Lighting Sciences Canada Ltd.
Sharon McFadden	DRDC Toronto
Alan Robertson	National Research Council (INMS)
Andrew Silbiger	Andrew Silbiger Management Inc.
Martyn Timmings	Canlyte-Philips Lighting
Jennifer Veitch	National Research Council (IRC)
Venkat Venkataramanan	University of Toronto-IOS
Lorne Whitehead	University of British Columbia
Ernest Wotton	consultant
Joseph Zulak	Public Works and Government Services Canada (PWGSC)
Joanne Zwinkels	National Research Council (INMS)
Guests:	
Gang Li	University of Toronto-IOS
Anton Swaris	GO Lighting Technologies Inc.

Regrets

Allyson Chrysler	Crossey Engineering Ltd
W.C. Cowan	University of Waterloo
Yvon Deslauriers	Health Canada (RPB)
James Love	University of Calgary
Ivan Pasini	Pasini Lighting Services
Jacques Roberge	consultant
Cristian Suvagau	BC Hydro

Proxies

none

APPENDIX B

CNC/CIE 53rd Annual Meeting

2008-October-24, Friday
Toronto, Ontario

Agenda

1.	Call to Order and Approval of Agenda	L.A.!Whitehead
	- In Memorium (W.K. Adrian 1930-2008)	A.R.!Robertson
2.	Minutes of the 52nd Annual CNC/CIE meeting	L.A.!Whitehead
	- Action items	
	- Matters arising	
3.	President's report	L.A.!Whitehead
4.	Vice-President's report	J.A.!Veitch
5.	Secretary's report	A.A.!Gaertner
6.	Financial and Publications report	K.F.!Lin
7.	Requests for Financial Support	L.A.!Whitehead
8.	Reports from Division Members	
	Division 1: Vision and Colour	S.M.!McFadden
	Division 2: Physical Measurement of Light and Radiation	J.C.!Zwinkels
	Division 3: Interior Environment and Lighting Design	J.A.!Veitch
	Division 4: Lighting and Signalling for Transport	J.!Bastianpillai
	Division 5: Exterior and Other Lighting Applications	M.K.!Timmings
	Division 6: Photobiology and Photochemistry	J.D.Y.!Deslauriers
	Division 8: Image Technology	R.!Baribeau
9.	Report on the CNC/CODATA meeting	R.!Baribeau
10.	CNC/CIE Subcommittee reports:	
	10.1 CNC/CIE website report	J.A.!Veitch
	10.2 CNC/CIE Finance Subcommittee report	S. M.!McFadden
11.	Revision of CNC/CIE Code of Procedure	A.R.!Robertson
12.	CISET Annual Performance Review of the CNC/CIE	L.A.!Whitehead
13.	CIE Supportive Membership Campaign	L.A.!Whitehead
14.	Nominations and Appointments (CNC/CIE)	L.A.!Whitehead
	14.1 Division Members	
	14.2 Members and Advisory Members	
15.	Other Business	L.A.!Whitehead
	15.1 Correspondence	
	15.2 Date and Place for next year's meeting (joint with USNC)	
	15.3 Any other business	
16.	Adjournment	L.A.!Whitehead

2008-Oct-17

APPENDIX C

CNC/CIE 53rd Annual Meeting

Action items from CNC/CIE 52nd Annual Meeting

Action Items

Action Item Number (AI#)	52nd Minutes Item Number	Responsible	Action	Results
1	2	K.F.!Lin, J.A.!Veitch	put list of CNC/CIE Stock of CIE publications on CNC/CIE website	has been done
2	2	L.A.!Whitehead, A.A.!Gaertner	anyone from UBC for TC!8–08?	to be done
3	2	J.A.!Veitch, B.D.!Jordan, R.!Baribeau	anyone from NRC-IRC for TC 8-10?	has been done
4	5	A.A.!Gaertner, J.A.!Veitch	contact SCC re Canadians on ISO TCs and WGs.	incomplete, A.A.!Gaertner and J.A.!Veitch to continue
5	6	S.M.!McFadden (chair), K.F.!Lin, J.A.!Love and V.!Venkataramanan	subcommittee to consider CNC/CIE finances	report to follow during meeting item 10.2
6	9	A.A.!Gaertner	check CIE policy on substitute Division Member voting rights	A.R.!Roberson indicates that there is no official policy.
7	10.1	S.M.!McFadden (chair), J.A.!Love and A.R.!Robertson	prepare nominations for President and Vice-President	done
8	10.2	A.A.!Gaertner	forward recommendations re 9 CNC/CIE Members to NRC-INMS-DG	done
9	10.4	A.A.!Gaertner	add new General Interest members	done

APPENDIX D

CNC/CIE 53rd Annual Meeting

2008-October-24

Vice-President's Report

CNC/CIE Vice President's Report
October, 2008

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

My principal activity as Vice-President of the CNC/CIE this year was contributions to the preparation of the annual report to the NRC International Relations Office. If it is impressive to see how substantial is Canada's contribution to lighting internationally, particularly through CIE; it is far out of proportion to either our population or to the size of the lighting industry.

I also began to investigate how our CIE/USA friends organize their contributions to international standards development, with a view to considering whether Canadian practices could be different. This arose because of a personal impression that we have limited contact with the SCC and might be missing opportunities to have input to lighting-related standards that come through ISO.

The CIE/USA has a standing committee on Standards chaired by Philip Wychorski. They have a formal procedure for commenting and voting on ballots for draft standards from CIE. Its essence is that their Technical Council Chairman (this position co-ordinates all the Division members), and sometimes the relevant Division member, review the draft standard and prepare a voting recommendation for the CIE/USA president.

For joint ISO/CIE standards the process is rather more complicated. The joint standards come to them through the American National Standards Institute (ANSI), which requires membership and the formation of a Technical Advisory Group with fees on the order of $6K. When there was no TAG on lighting, ANSI had no one to review joint ISO/CIE standards as a result. CIE/USA has negotiated a waiver of the fee for a TAG on lighting because of the unique relationship between ISO and CIE. Since April 2007 there has been a TAG for joint ISO/CIE standards, coordinated by the CIE/USA. The review and voting process is similar to that for CIE standards, but must adhere to ANSI procedures, which are somewhat more rigorous.

My conclusion based on my conversation with Mr. Wychorski is that the US structure is not generally applicable to Canada. However, we may wish to consider increasing our contacts with the Standards Council of Canada, to ensure that they look to us for expertise on lighting matters and to ensure that any Canadian representatives on ISO committees with content related to lighting have the opportunity to join the CNC.

APPENDIX E

CNC/CIE 53rd Annual Meeting

2008-October-24

Secretary's Report

COMMISSION INTERNATIONALE DE L'ÉCLAIRAGE
INTERNATIONAL COMMISSION ON ILLUMINATION
INTERNATIONALE BELEUCHTUNGSKOMMISSION

Canadian National Committee Comité National Canadien

CNC/CIE SECRETARY'S REPORT TO THE 53rd ANNUAL MEETING

2008-October-24

The following acronyms may be used in this report:

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

This report covers the period from 2007-October-18 to 2008-October-23.

CIE MATTERS:

1. Annual Membership Fee:
   The annual membership fee for the CNC/CIE as a member of the CIE for 2008 is 7,319 EUROS, which was $11,736.00 Cdn. The NRC-International Relations Office has continued to make these payments on our behalf.

   The NRC, through a Grant Transfer Program, supports Canadian scientific organizations to affiliate with their corresponding international union and program bodies. As part of our CIE membership through the NRC, we are also affiliated with the International Council for Science (ICSU) and 29 other international scientific unions. The NRC membership to these international scientific organizations allows active participation by members of the Canadian scientific community in international scientific endeavors.

2. CIE Memberships - Greece:
   The CIE-CB, on 2008-January-15, informed all CIE NCs that the Associate National Committee of Greece had applied for the renewal of its Associate Membership in the CIE. According to the CIE Statutes 5.2.3, the Associate Committee membership may be renewed for one further four-year period by the decision of the National Committees. After that time they are expected to become a full National Committee member. A CNC/CIE letter ballot for the approval of this Associate Membership was sent (email) to 55 of our Members (13) and Advisory Members (42) on 2008-January-23, with a deadline for reply of 2008-March-28. Nineteen (19) ballots (8 Members and 11 Advisory Members) were returned, with all in favor. The CNC/CIE vote in favor of the renewal of CIE Associate Membership of Greece was communicated to the CIE-CB on 2008-April-15. The CIE-Central Bureau informed us on 2008-April-18 that all of the 14 National Committees that replied to the CIE-CB had voted in favor.

3. CIE Draft Standards:
   CIE DS 014-5.2/E:2008 *Colorimetry–Part 5: CIE 1976 L*u*v* Colour Space and u´, v´ Uniform Chromaticity Scale Diagram.*
   This CIE Draft Standard has been approved by the CIE Board of Administration and CIE Division 1, and then submitted to all the CIE National Committees for Comments. On 2008-February-06, CIE Draft Standard DS 014-5.2/E:2008 was sent from the CIE-CB (Central Bureau) to National Committees (NCs) for comments with a deadline of 2008-August-06. These draft standards were sent to the 16 CNC/CIE Members on

2008-April-16 with a deadline for comments by 2008-July-30. Replies were received from 4 Members, all of whom had no comments.

CIE DS 014-5.3/E:2008 *Colorimetry–Part 5: CIE 1976 L*u*v* Colour Space and u´, v´ Uniform Chromaticity Scale Diagram.*
This Draft Standard had been submitted by the CIE-CB to all NCs for comments as indicated above. After all comments had been received, this final version was submitted on 2008-October-02 by the CIE-Central Bureau to all NCs for final vote, with a deadline of 2009-January-02. Copies were mailed on 2008-October-09, with a deadline of 2008-December-15, to each of the 16 CNC/CIE Members for their final vote.

4. Mailings:
Amongst others, the following CIE materials have been received and mailed and/or emailed to the membership as appropriate:

Guidelines for Membership of Technical Committees and Attendance at TC Meetings. Further information concerning these guidelines can be found in *CIE NEWS* Number 85, June/2008.

CIE NEWS Number 83, 4/2007
CIE NEWS Number 84, March/2008
CIE NEWS Number 85, June/2008

CIE Press Releases:

Publication CIE 178:2007 *Proceedings of the 26th Session of the CIE,* Beijing, China, 4-11 July 2007 (CD-ROM)
Publication CIE 180:2007 *Road Transport Lighting for Developing Countries.*
Publication CIE 181:2007 *Hand Protection by Disposable Gloves Against Occupational UV Exposure.*
Publication CIE 182:2007 *Calibration Methods and Photoluminescent Standards for Total Radiance Factor Measurements.*
Publication CIE 183:2008 *Definition of the Cut-Off of Vehicle Headlights.*
Publication CIE x029:2006 *Proceedings of the 2nd CIE Expert Symposium on "Measurement Uncertainty"*, 12-13 June 2006, Braunschweig, Germany.

CIE Standard S 014-4/E:2007 *Colorimetry-Part 4: CIE 1976 L*a*b* Colour Spaces.*

Dual IEC/CIE Logo Standard IEC 62471 / CIE S 009/E:2006 *Photobiological Safety of Lamps and Lamp Systems (bilingual edition).*
Joint ISO/CIE Standard ISO 10527:2007(E) / CIE S 014-1/E:2006 *CIE Standard Colorimetric Observers*.
Joint ISO/CIE Standard ISO 10526:2007(E) / CIE S 014-2/E:2006 *CIE Standard Illuminants for Colorimetry*.
Joint ISO/CIE Standard ISO 28077:2006(E) / CIE S 019/E:2006 *Photocarcinogenesis Action Spectrum (Non-Melanoma Skin Cancers).*
Joint ISO/CIE Standard ISO 30061:2007(E) / CIE S 020/E:2007 *Emergency Lighting*.

CNC/CIE MATTERS:

1. CNC/CIE 2008 Annual Meeting:
This meeting will be held at the Emerging Communications Technology Institute (ECTI) of the University of Toronto in Toronto, Ontario. We extend our thanks to Dr. Venkat Venkataramanan, Head of Scientific Operations in the Institute for Optical Sciences at the University of Toronto for hosting this meeting.

2. Dr. Werner K. Adrian:
Dr. Werner K. Adrian passed away on 2008-May-10. He was a longtime active member of the CNC/CIE and the CIE internationally. He was awarded a CIE certificate at the CIE Session 2007 in Beijing, China stating: "This certificate is awarded by the CIE Board of Administration to Dr. Werner K. Adrian in grateful appreciation of distinguished and valuable service as: The Vice-President of the CNC/CIE from 1992 to 2002, the Canadian Member of CIE Division 4 from 1994 to 2003, an active participant in several Technical Committees in Division 1 and Division 4." At last year's joint CNC/CIE and USA/CIE meeting in Ottawa he presented a well-received paper *The CIE and Mesopic Photometry.* A Memorial written by his daughter has been published in the *CIE NEWS* Number 85, June/2008. A letter of condolences from Franz Hengstberger, President of the CIE, is attached to this report.

3. Annual Performance Review of the CNC/CIE:
The NRC International Relations Office has developed an Annual Performance Review (APR) questionnaire, requested by the NRC advisory Committee on International Science, Engineering and Technology (CISET), that focuses on assessing the impact of Canada's international affiliations supported through the NRC Grant Transfer

Program. The questionnaire is distributed to all NRC Partners/CNCs. Annual dues and any other payments will be withheld until receipt and successful review of the questionnaire by CISET. We received this APR questionnaire on 2007-November 22. After extensive work by J.A.!Love, J.A.!Veitch, S.M.!McFadden, J.C.!Zwinkels and other CNC/CIE Members, we submitted the final APR to NRC-IRO on 2008-February-21. On 2008-April-04 I received a telephone reply from a spokesman for the NRC-IRO. He indicated that the CNC/CIE had achieved a higher-than-passing rating, so that we would receive CISET funding for our annual CIE fees this year. He also discussed some of the areas in which we could receive a higher rating. A copy of the APR and a report of this conversation will be presented during the CNC/CIE 2008 annual meeting.

4. Canadian Lighting Issues:

Natural Resources Canada (NRCan): The CNC/CIE is on the mailing list of the NRCan Office of Energy Efficiency to receive information concerning any lighting issues of interest to the Canadian lighting community. I then forward this information to our email list. I have also included two of their people on our email list to receive general information concerning the CIE and CNC/CIE.

Of particular interest this year was their December 2007 *Bulletin on Developing Energy Efficiency Standards for General Service Lighting*, which was circulated on 2008-January-02 to all on our CNC/CIE email list. This was followed by notice of pre-publication on 2008-March-29 in the *Canada Gazette* (official newspaper of the Government of Canada) of a proposed amendment to the *Energy Efficiency Regulations*. The NRCan email indicated that this is one of three planned amendments to the *Energy Efficiency Regulations* to deliver energy, greenhouse gas and air pollutant reductions as part of Canada's Clean Air Regulatory Agenda. This email notice was forwarded to all on our CNC/CIE email list on 2008-April-14.

International Organization for Standardization (ISO): Canada is a member of ISO through the Standards Council of Canada (SCC). I have received requests for comments from the SCC for ISO draft international standards that have so far been CIE standards submitted to the ISO for publication as joint standards. As CNC/CIE Secretary I have been responding with the results of our CNC/CIE vote on that particular standard. This year I have responded to a request concerning the publication of CIE S 014-4/E:2007 *Colorimetry-Part 4: CIE 1976 L*a*b* Colour Space* as a joint standard.

5. Requests for Funding:

There were no requests for funding during this past year.

6. CNC/CIE website:

The website has been operating since 2005-October-26 at the web address of www.cie-cnc.ca. I have begun to receive requests for information through the website. If anyone has suggestions for corrections, updates, or additions, please contact the Secretary or J.A.!Veitch, our website coordinator. A report on the website will be given at this meeting.

7. Mailing Lists:

7.1 At present I maintain 3 mailing lists: Members (16), Advisory Members (46), General Interest (19). In general, the difference between the first two and the third is that the third list tends to receive only CIE material (press releases of CIE publications, *CIE NEWS*) and notices of international conferences. Members and Advisory Members receive, in addition to the CIE material, more CNC information such as various ballots, and the Minutes of the annual meeting and related information.

7.2 Electronic Mail: I have sent most documents to the CNC/CIE membership this year by email. I have been using a PDF format which should be more versatile in accommodating the various computer systems, and the reader can be downloaded free from the Adobe website. I now receive most information from the CIE-CB, such as Press Releases, in electronic format. I often receive announcements of meetings in electronic format, and I forward these electronically rather than sending a large paper mailing. At present my email mailing lists are: Members (16), Advisory Members (38), General Interest (18). Please keep me updated on your email address.

8. Membership:

A list of our Members and Advisory Members is available and will be discussed during the annual meeting for the purposes of making any changes.

8.1. Officers:

At last year's annual meeting a nominating committee, composed of three recent CNC/CIE Presidents (J.A. Love, S.M. McFadden and A.R. Robertson, with S.M. McFadden as Chair), was appointed to prepare a slate of nominees for the two positions of CNC/CIE President and Vice-President for the next four-year term starting in January 2008. A Call-for-Nominations was emailed to all Members and Advisory Members on 2007-October-31 with a deadline of 2007-November-09 for any nominations. The Nominating Committee assembled the nominations received (Dr. L.A. Whitehead for CNC/CIE President, and Dr. J.A. Veitch for CNC/CIE Vice-President) and requested the Secretary to send an email ballot, with a short biography of each candidate, to the CNC/CIE Members and Advisory Members for their approval of the nominees. This was

sent to Members (13) and Advisory Members (42) on 2007-November-13 with a deadline of 2007-December-15 for reply. Replies were received from all Members and 10 Advisory Members, all approving the two nominees. The names of these nominees were forwarded to Dr. James W. McLaren, Director-General of INMS, and appointment letters were sent on 2008-January-22.

8.2. Members:

At last year's annual meeting nine Member appointments were recommended by the CNC/CIE. Letters of appointment were sent to these people by Dr. James W. McLaren, Director-General of INMS. All have accepted. They are:

Mr.!J.!Bastianpillai for a four-year term until 2011-December-31
Dr.!J.D.Y.!Deslauriers for a four-year term until 2011-December-31
Dr.!B.D.!Jordan for a four-year term until 2011-December-31
Dr.!J.A.!Love for a four-year term until 2011-December-31
Mrs.!S.M.!McFadden for a four-year term until 2011-December-31
Dr.!C.!Suvagau for a four-year term until 2011-December-31
Mr.!M.K.!Timmings for a four-year term until 2011-December-31
Dr.!V.!Venkataramanan for a four-year term until 2011-December-31
Dr.!J.C.!Zwinkels for a four-year term until 2011-December-31

8.3. Advisory Members:

As a result of his appointment as a member of CIE TC1-70, the following was added to our Advisory Membership:

Dr. Alexander Rosemann, BC Hydro, Burnaby, British Columbia.

8.4. General Interest:

As a result of requests from the last annual meeting and from requests during the year, I have added the following to our General Interest mailings:

Dr. Marie-Claude Dubois, Université Laval, Québec, Québec
Michael Phillips, P.Eng., Stantec, Vancouver, British Columbia
Charles Poynton, consultant, Toronto, Ontario
Joseph Zulak, P.Eng., PWGSC, Gatineau, Québec

8.5 Removals:

The following people have been removed from our mailing lists:

W.K.!Adrian, Professor Emeritus, University of Waterloo, deceased
Roy Williams, Duha Group, Winnipeg, Manitoba, moved
Doreen Munsie, Reid Crowther and Partners Ltd., Calgary, Alberta, moved

Respectfully submitted,

A.A. Gaertner
Secretary, CNC/CIE
Institute for National Measurement Standards
Building M-36
National Research Council of Canada
1200 Montreal Road
Ottawa, Ontario K1A 0R6
Tel: (613) 993-9344
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Email: arnold.gaertner@nrc-cnrc.gc.ca

COMMISSION INTERNATIONALE DE L'ECLAIRAGE
INTERNATIONAL COMMISSION ON ILLUMINATION
INTERNATIONALE BELEUCHTUNGSKOMMISSION

Central Bureau: Kegelgasse 27 – 1030 Wien – Austria

Canadian National Committee of the CIE
c/o Dr.A.A.Gaertner
Institute for National Measurement Standards
National Research Council
Ottawa, Ontario, K1A 0R6
CANADA

Dear Dr Gaertner,

Prof. Adrian

I have learnt with great sadness of the loss to your Committee and to the worldwide lighting community of Prof Werner Adrian. Please convey my condolences on behalf of the whole CIE membership to his family and to the members of your National Committee.

Prof. Adrian was a stalwart amongst vision researchers and in the field of lighting and his internationally acclaimed work will remain a legacy for generations of practitioners in these fields. He was a Vice-President of your National Committee from 1992 – 2002 and his life-time involvement in the work of the CIE is a monument to his achievements.

On behalf of the CIE I salute a great colleague, scientist and human being.

Sincerely yours,

F. Hengstberger

Dr F Hengstberger
President

APPENDIX F

CNC/CIE 53rd Annual Meeting

2008-October-24

Financial and Publications Report

CNC/CIE PUBLICATION - CANADA
FINANCIAL REPORT
AS OF
September 30, 2008

CNC/CIE PUBLICATION - CANADA
FINANCIAL REPORT

INCOME STATEMENT **01/October/2007 - 30/September/2008**

Revenue		
Publication sale [year 2007-2008]	Nil	
Other Income	$ 3,605.10	
[CIE/CNC & CIE/USA joint meeting registration fees in 2007]		
Total Revenue		**$ 3,605.10**
Expense		
Bank charges [Oct/2007 - Sep/2008: $5.95 x12]	$ 71.40	
Central Bureau of CIE	Nil	
[re: publication purchase in year 2007-2008]		
SODEXHO - Hospitality for CIE/CNC & CIE/USA 2007 meeting	$ 1,932.81	
Cyberton - Web service	$ 309.90	
Total Expense		**$ 2,314.11**
Net Income (Loss)		**$ 1,290.99**

CNC/CIE PUBLICATION - CANADA
FINANCIAL REPORT

BALANCE SHEET **01/October/2007 - 30/September/2008**

Assets		
Bank/Cash	$ 23,134.46	
Outstanding cheque - Cyberton (check was cashed @Oct/15/2008)	$ (309.90)	
Accounts Receivable	Nil	
Total Assets		**$ 22,824.56**
Liabilities		
Accounts Payable	Nil	
Total Liabilities		**$ -**
Equity		
Balance, beginning @ 30/September/2007	$ 21,533.57	
Current Income(Loss)	$ 1,290.99	
Total Equity		**$ 22,824.56**
Liability & Equity		**$ 22,824.56**

CNC/CIE PUBLICATIONS BANK ACCOUNT - CANADA
Financial Report - Bank Account

CNC/CIE Publications Bank Account: 01/October/2007 - 30/Sep/2008 **(Canada)**

Date		Sales	Other Income	Payments to CB	Other Expenses	Balance
30-Sep-2007	Balance brought forward					$21,533.57
24-Oct-2007	Deposit: CIE/CNC & CIE/USA Joint meeting 2007- Reg. fee					
	(8 US cheque @ 0.9470) US$800.00 = Can$757.60		$757.60			$22,291.17
24-Oct-2007	Deposit: CIE/CNC & CIE/USA Joint meeting 2007 - Reg.fee					
	(11 CAN cheque plus cash)		$2,847.50			$25,138.67
31-Oct-2007	Bank monthly charge (October/2007)				$3.95	$25,134.72
31-Oct-2007	Bank record keeping fees (October/2007)				$2.00	$25,132.72
9-Nov-2007	SODEXHO - hospitality for 2007 meeting [CNC/CIE ck#109]				$25.55	$25,107.17
9-Nov-2007	SODEXHO - hospitality for 2007 meeting [CNC/CIE ck#110]				$1,907.26	$23,199.91
30-Nov-2007	Bank monthly charge (November/2007)				$3.95	$23,195.96
30-Nov-2007	Bank record keeping fees (November/2007)				$2.00	$23,193.96
31-Dec-2007	Bank monthly charge (December/2007)				$3.95	$23,190.01
31-Dec-2007	Bank record keeping fees (December/2007)				$2.00	$23,188.01
31-Jan-2008	Bank monthly charge (January/2008)				$3.95	$23,184.06
31-Jan-2008	Bank record keeping fees (January/2008)				$2.00	$23,182.06
29-Feb-2008	Bank monthly charge (February/2008)				$3.95	$23,178.11
29-Feb-2008	Bank record keeping fees (February/2008)				$2.00	$23,176.11
31-Mar-2008	Bank monthly charge (March/2008)				$3.95	$23,172.16
31-Mar-2008	Bank record keeping fees (March/2008)				$2.00	$23,170.16
30-Apr-2008	Bank monthly charge (April/2008)				$3.95	$23,166.21
30-Apr-2008	Bank record keeping fees (April/2008)				$2.00	$23,164.21
31-May-2008	Bank monthly charge (May/2008)				$3.95	$23,160.26
31-May-2008	Bank record keeping fees (May/2008)				$2.00	$23,158.26
30-Jun-2008	Bank monthly charge (June/2008)				$3.95	$23,154.31
30-Jun-2008	Bank record keeping fees (June/2008)				$2.00	$23,152.31
31-Jul-2008	Bank monthly charge (July/2008)				$3.95	$23,148.36
31-Jul-2008	Bank record keeping fees (July/2008)				$2.00	$23,146.36
30-Aug-2008	Bank monthly charge (August/2008)				$3.95	$23,142.41
30-Aug-2008	Bank record keeping fees (August/2008)				$2.00	$23,140.41
24-Sep-2008	Cyberton - Domain reg./Web service [CNC/CIE ck#111]				$309.90	$22,830.51
30-Sep-2008	Bank monthly charge (September/2008)				$3.95	$22,826.56
30-Sep-2008	Bank record keeping fees (September/2008)				$2.00	$22,824.56
30-Sep-2008	**Total**	**$0.00**	**$3,605.10**	**$0.00**	**$2,314.11**	**$22,824.56**

CNC/CIE PUBLICATION SALE - CANADA

CNC/CIE Publication Sale: 01/October/2007 - 30/September/2008 (Canada)					
Date/Inv. #	**Description/Title of Publication**	**Qty**	**Sale**	**Expense**	**Net Amount**
	No Sale		$ -	$ -	$ -
30-Sep-2008	**Total**		**$ -**	**$ -**	**$ -**

CNC/CIE PUBLICATION PURCHASE - CANADA

Publication purchase from Central Bureau of CIE: 01/October/2007 - 30/September/2008 (Canada)

Date	CIE Inv.	CIE Code	Title of Publication	Qty	Unit Cost	Total Cost	Discount	Running Total	Payment
					(Euro)	(Euro)	(Euro)	(Euro)	(Euro)
30-Sep-2007	Forward		**No Purchase**		$ -	$ -	$ -	$ -	**$ -**
			Total to date as of 30-September-2008			**$ -**	**$ -**	**$ -**	
			Payment to CB @ 30-September-2008						**$ -**
			Balance due as of 30-September-2008					**$ -**	**(Euro)**

CIE/CNC PUBLICATION STOCK LIST

2008-SEPTEMBER-30

CIE	Title	Year	Price	Price	Sales								Purchase						Current	CB
No.			Code	Cd$	97-98	98-99	99-00	2001	2002	2003	04/05	05-08	99-00	2001	2002	2003	04/05	05-08	Stock	X
1	Urban sky glow	1980	C	68															4	
2.2	Colours of light signals	1975	I	109		1													2	X
8	Street lighting & accidents	1960																	5	X
12.2	Road lighting for motor, traffic	1977	C	68							1								3	X
13.3	Colour rendering properties	1995	I	109		1		1											0	
15	Colorimetry (3rd edition)	2004	I	Euro															0	
15.2	Colorimetry	1986	H	98	1	3	1	3		2				1		4			2	X
16	Daylight	1970	I	109															5	
17.4	International lighting vocabulary	1987	X	Euro				1											0	
18.2	Physical photometry	1983	E	80	1	1				1									0	
19.21	Visual performance - volume I	1981	K	137															4	
19.22	Visual performance - volume II	1981	I	109					1										3	
20	Solar radiation	1972																	5	X
22	Luminance distrib. on clear sky	1973																	4	X
23	Motorway lighting	1972	C	68															5	
24	Luminaire photometry (indoor)	1973																	2	X
26	Recommendation for tunnel ltg	1973	I	109															5	X
27	Luminaire photometry(street ltg)	1973																	4	X
28	Sports ltg for colour tv broadcast	1975																	4	X
29.2	Guide on inteior lighting	1986	J	122															1	X
30.2	Calc. & Meas. (road lighting)	1982	L	166	1	1			1										0	X
31	Glare & uniformity (road lighting)	1976	C	68															0	
32A	Special road lighting (French)	1977	D	74															4	
32B	Special road lighting (English)	1977	D	74															5	
33A	Deprec.&install.road ltg (French)	1977	C	68															4	
33B	Deprec.&install.road ltg(English)	1977	C	68															5	
34	Road lighting installation data	1977	E	80							1								2	
35	Lighting of traffic signs	1978																	1	X
37	Exterior lighting in the environ.	1976																	5	X
38	Characteristics of materials	1977	L	166															4	
39.2	Surf.colours for visual signals	1983	I	109	1														3	
40	Interior lighting calculations	1978	G	91															4	
41	Light as true visual quantity	1978	E	80															4	
42	Lighting for tennis	1978	C	68															6	
43	Photometry of floodlights	1979	F	86															4	
44	Absolute reflection measurements	1979	H	98															2	
45	Lighting for ice sports	1979	C	68							1								4	
46	Material reflection stanadards	1979	J	122															4	
47	Road lighting for wet condition	1979	I	109							1								3	
48	Road traffic signals	1980	E	80				1											0	
49	Emergency lighting	1981	B	57															3	
51	Daylight simulators for colorim.	1981	D	74					1										1	X
51.2	Qual.of daylight simu.for colorimetr	1999	D	74									2						2	
52	Interior lighting calculations	1982	L	166															4	
53	Radiometers & photometers	1982	D	74	1	1	1	1						1					0	
54	Retroreflection - def./meas.	1982	D	74		1													1	X
54.2	Retroreflection:def. & measure.	2001	G	91					1					2					1	
55	Discomfort glare (interior)	1983	F	86															3	

CIE/CNC PUBLICATION STOCK LIST

2008-SEPTEMBER-30

CIE	Title	Year	Price	Price				Sales							Purchase				Current	CB
No.			Code	Cd$	97-98	98-99	99-00	2001	2002	2003	04/05	05-08	99-00	2001	2002	2003	04/05	05-08	Stock	X
56	Proceedings 1983/light&lighting	1983	L	166															5	X
57	Lighting for football	1983	B	57															4	
58	Lighting for sports hall	1983	A	43							1								3	
59	Polarization	1984	D	74															4	
60	Vision/visual display work station	1984	D	74															1	
61	Tunnel entrance lighting	1984	I	109			1												2	
62	Lighting for swimming pools	1984	C	68				1											1	
63	Spectroradiometry	1984	G	91		1	1	1		1				1		2			1	
64	Spectral responsivity of detect.	1984	H	98		1													2	
65	Absolute radiometers	1985	D	74															3	
66	Road surfaces & lighting	1984	H	98							1								1	
67	Photometry of sports lighting	1986	A	43							1								1	
68	Lighting of exterior working area	1986	H	98															4	X
69	Illuminance meters	1987	E	80	1		1			1						3			2	
70	Meas. of luminous intensity	1987	F	86															2	
71	Proceedings 1987-Volume I	1987																	1	X
71	Proceedings 1987-Volume II	1987																	1	X
72	Retroreflectors at night	1987	G	91						1									1	
73	Visual aspect of road markings	1988	G	91															1	
74	Roadsigns	1988	K	137															3	
75	Spectral luminous efficiency	1988	C	68															2	
76	Meas. of luminescent specimens	1988	H	98															2	
77	Electric light sources	1988	K	137															0	
78	Brightness-luminance relations	1988	M	195															2	
79	Road traffic lights	1988	C	68				1											0	
80	Observer metamerism	1989	C	68															2	
81	Mesopic photometry	1989	D	74															3	
82	CIE history (1913-1988)	1990	M	195															1	
83	Lighting of sports for tv&film sys.	1989	C	68							1								0	
84	Meas. of luminous flux	1989	F	86		1	1				1		1				1		0	
85	Solar spectral irradiance	1989	F	86						1						2			1	
86	1988 2 deg.spec.lum.eff.function	1990	B	57															2	
87	Self-luminous displays	1990	E	80					1										0	
88	Lighting for road tunnels&underpas	1990	F	86	1				1										0	X
88(2nd ed.)	Lighting for road tunnels&underpas	2004	D	Euro															0	
89	Technical collection 1990	1991	F	86															2	
90	Sunscreen testing (UV B)	1991	B	57															2	
91	Proceedings 1991-Volume I, P1	1991																	2	X
91	Proceedings 1991-Volume I, P2	1991																	2	X
91	Proceedings 1991-Volume II	1991																	2	X
92	Guide for lighting of urban areas	1992	D	74				1											0	X
93	Road lighting/accident counter mea	1992	J	122	1														3	
94	Guide for floodlighting	1993	H	98															1	
95	Contrast & visibility	1992	F	86					1										0	
96	Electric light sources	1992	C	68															0	
97	Maintenance/indoor ltg systems	1992	C	68															2	X
97(2nd ed.)	Maintenance/indoor ltg systems	2005	D	Euro															0	
98	Personal dosimetry of uv radiat.	1992	C	68															1	

CIE/CNC PUBLICATION STOCK LIST

2008-SEPTEMBER-30

CIE	Title	Year	Price	Price	Sales								Purchase						Current	CB
No.			Code	Cd$	97-98	98-99	99-00	2001	2002	2003	04/05	05-08	99-00	2001	2002	2003	04/05	05-08	Stock	X
99	Lighting education(1983-1989)	1992	B	57															1	
100	Visual task of night driving	1992	G	91															2	
101	Parametric effects/colour differ.	1993	B	57															0	
102	File format-photometric data	1993	C	68															1	
103	CIE technical collection 1993	1993	G	91															0	
104	Daytime running lights (DRL)	1993	B	57															1	
105	Spectroradiometry-optical radia.	1993	C	68	1	1													1	
106	Collection/photobio.& photochem.	1993	F	86															1	
107	Colours of signal lights	1994	E	80															1	
108	Daylight measurement	1994	F	86															1	
109	Corresponding colours	1994	B	57					1										1	
110	Spatial distribution of daylight	1994	D	74	1														0	
111	Variable message signs	1994	F	86					1										1	
112	Glare evaluation system-outdoor	1994	B	57		1					1								0	
113	Retroreflective road signs(night)	1995	G	91															1	
114	Collection-photometry&radiometry	1994	E	80															2	
115	Lighting of roads for motor ped.	1995	C	68		1					1								0	
116	Colour difference evaluation	1995	B	57			1												1	
117	Discomfort glare in interior lighting	1995	D	74	1														1	
118	Collection-colour & vision	1995	G	91															2	
119	Proceeding of New Delhi Vol.1	1995	X	Euro															0	
120	Proceeding of New Delhi Vol.2	1996	K	137															0	X
121	Goniophotometry of luminaires	1996	F	86		1			1	2						3			1	
122	Digital&colorimetric data for CRT	1996	C	68						1									0	
123	Low vision	1997	L	166															2	
123CD	Low vision: CD-ROM	1997	X	Euro	1														0	
124	Collection-colour & vision	1997	E	80															2	
125	Standard erythema dose	1997	A	43					1										1	
126	Minimizing sky glow	1997	B	57															2	
127	Measurement of LEDs	1997	C	68	1	2		1	3	3	1				4	4			1	
127	Measurement of LEDs	2007	D	Euro															0	
127	Measurement of LEDs(French)	2007	D	Euro															0	
128	Lighting of open cast mines	1998	C	68															2	
129	Lighting exterior work areas	1998	B	57				1											1	
130	Measurement of reflec.& trans.	1998	G	91			1												1	
131	CIECAM97s colour appearance	1998	B	57					1										1	X
132	Design methods for ltg of roads	1999	F	86															2	
133	Proc.24th ses.CIE,Warsaw	1999	X	Euro															0	
133CD	Proc.24th ses.CIE,Warsaw	1999	X	Euro															0	
134	Collection in photobi&photochem.	1999	F	86			1												1	
135	Vision and colour	1999	H	98									2						2	
136	Guide to lighting of urban areas	2000	D	74				1	1		1		2		1				0	
137	Conspicuity of traffic sign	2000	D	74									2						2	
138	Col.in photobiology & photochem.	2000	F	86			1						2						1	
139	Diurnal&seas. var.in humans	2001	G	91															0	
139CD	Diurnal&seas. var.in humans	2001	X	Euro															0	
140	Road lighting calculations	2000	D	74				1			1		2						0	
141	Test of suppl.systems of photo.	2001	I	109										2					2	
142	Impr.to ind.color-diff. evaluation	2001	B	57				1						2					1	

CIE/CNC PUBLICATION STOCK LIST

2008-SEPTEMBER-30

CIE	Title	Year	Price	Price				Sales							Purchase				Current	CB
No.			Code	Cd$	97-98	98-99	99-00	2001	2002	2003	04/05	05-08	99-00	2001	2002	2003	04/05	05-08	Stock	X
143	Colour vision req.for transport	2001	E	80				1	1					2					0	
144	Road surf. & marking refl.charact.	2001	D	74										2					2	
145	Cor.for vision&visual perform.	2002	E	80					2						2				0	
146/147	CIE collection on glare 2002	2002	C	68					1						2				1	
	146-CIE equations for disab.glare																			
	147-glare from small….sources																			
148	Action spect.of skin /w…lasers	2002	B	57											2				2	
149	Use of tungsten filament lamp	2002	C	68											2				2	
150	Guide..obtrusive light from outdr. lt	2003	E	80						2	1					2	1		0	
151	Spectral weighting of Solar UV	2003	D	74												2			2	
152	Proc.of 25th Session of CIE	2003	X	Euro															0	
152CD	Proc.of 25th Session of CIE	2003	X	Euro															0	
153	Interc.of luminous flux of HPS	2003	A	43												2			2	
154	Maint.of outdoor lighting system	2003	C	Euro						1	1					2			0	
154(Fren.)	Maint.of outdoor lighting system	2003	C	Euro															0	
155	Ultraviolet air disinfection	2003	G	91						1	1					2			0	
155(Fren.)	Ultraviolet air disinfection	2003	G	Euro															0	
156	....Gamut mapping algorithms	2004	C	Euro															0	
156(Fren.)	....Gamut mapping algorithms	2004	C	Euro															0	
157	..Museum object by optical rad.	2004	D	Euro															0	
157(Fren.)	..Museum object by optical rad.	2004	D	Euro															0	
158	Ocular light effects on human..	2004	F	Euro															0	
158(Fren.)	Ocular light effects on human..	2004	F	Euro															0	
159	Colour appearance..CIECAM02	2004	C	Euro															0	
159(Fren.)	Colour appearance..CIECAM02	2004	C	Euro															0	
160	Chromatic adaptation transfm.	2004	D	Euro															0	
161	Lighting ..for obstructed interior	2004	D	Euro															0	
161(Fren.)	Lighting ..for obstructed interior	2004	D	Euro															0	
162	Chromatic adaptation under mix.	2004	C	Euro															0	
163	Effects of fluo..of Imaging data	2004	B	Euro															0	
163(Fren.)	Effects of fluo..of Imaging data	2004	B	Euro															0	
164	Hollow light guide tech. & appli.	2005	D	Euro															0	
165	CIE 10 deg. photopic photometer	2005	C	Euro															0	
166	Cognitive colour	2005	C	Euro															0	
167	Recom..tabulating spectral data	2005	C	Euro															0	
168	Criteria..gamut colour encoding	2005	I	Euro															0	
168(Fren.)	Criteria..gamut colour encoding	2005	I	Euro															0	
169	..Sport events for col.tev.& film,	2005	H	Euro															0	
169(Fren.)	..Sport events for col.tev.& film,	2005	H	Euro															0	
170-1	.chromati. diag./w physio-part I	2006	F	Euro															0	
170-1(Fre.)	.chromati. diag./w physio-part I	2006	F	Euro															0	
171	Assess..lighting computer prog.	2006	I	Euro															0	
171(Fren.)	Assess..lighting computer prog.	2006	I	Euro															0	
172	UV protection and clothing	2006	F	Euro															0	
172(Fren.)	UV protection and clothing	2006	F	Euro															0	
173	Tubular daylight guidance syst.	2006	H	Euro															0	
173(Fren.)	Tubular daylight guidance syst.	2006	H	Euro															0	
174	Action spectr..previtamin D3..	2006	B	Euro															0	
174(Fren.)	Action spectr..previtamin D3..	2006	B	Euro															0	

CIE/CNC PUBLICATION STOCK LIST

2008-SEPTEMBER-30

CIE	Title	Year	Price	Price	Sales								Purchase						Current	CB
No.			Code	Cd$	97-98	98-99	99-00	2001	2002	2003	04/05	05-08	99-00	2001	2002	2003	04/05	05-08	Stock	X
175	Framework for meas.visual appear	2006	I	Euro															0	
176	Geometric toler.for color meas.	2006	C	Euro															0	
177	Colour render. of white LED	2007	B	Euro															0	
178	Pro.26th session.Beijing 2007	2007	K	Euro															0	
179	charact.tristimulus colorimeters	2007	B	Euro															0	
180	Road..lighting for dev. Countries	2007	free	-															0	
181	Hand protection..UV exposure	2007	D	Euro															0	
182	Calib..total radiance factor..	2007	F	Euro															0	
183	Def..cut-off vehicle headlights	2008	B	Euro															0	
	CIE Publications on Diskettes:																			
D001	Phot. & colorimetric data	1988	C	68	1		1			1			1			1			0	X
D001	Phot.&colorimetric data (18.2)	2006	C	Euro															0	
D002	Colorimetric&colour rend. data	2004	J	Euro															0	
D005	Daylight simulators for colorim.	1994	A	43															0	
D007	Corresponding colours	1994	F	86															0	
D008	Colour rendering index (13.3)	1995	X	53				2						2					1	
	Standards and Draft Standards:																			
ISO10526	Standard illuminants	1991	B	57			1												1	X
ISO10527/E	Colorimetric observers	1991	G	91			1												2	X
ISO10527/F	Colorimetric observers	1991		Euro															0	X
S003	Spatial distribution of daylight	1996	A	43	1														0	X
S004	Colours of light signals	2001	B	57															0	
S005/E	Illuminants for colorimetry	1999	B	57															2	
S005/F	Illuminants for colorimetry	1999		Euro															0	
S005/D	Illuminants for colorimetry	1998		Euro															0	
16508/S006	Road traffic light	1998	A	43	1														1	
17166/S007	Erythema action spectrum	1999	A	43			1		2						2				1	
S007/F	Erythema action spectrum	1999	A	Euro															0	
S007/D	Erythema action spectrum	1998	A	Euro															0	
8995/S008	Lighting of indoor work places	2001	C	68				3		4				3		5			1	
S009/E	Photobio.safety of lamp&system	2002	D	Euro															0	
S009/F	Photobio.safety of lamp&system	2002	D	Euro															0	
S009/D	Photobio.safety of lamp&system	2002	D	Euro															0	
S009/E&F	Photobio.safety of lamp&(bilingual	2006	I	Euro															0	
23539/S010	CIE syst.of physical photometry	2005	C	Euro															0	
15469/S011	Spatial distribution of daylight	2003	A	43						2						3			1	
S011/E	Spat. dis.of daylight-gen. sky	2003	A	Euro															0	
23603/S012	Spat.quli.of daylight simulators..	2004	C	Euro															0	
S013/E	Int'l stand.global solar UV index	2003	A	43															0	
S014-1/E	Colorimetry-1:colorimetric observe	2006	D	Euro															0	
S014-2/E	Colorimetry-2:illuminants	2006	B	Euro															0	
S014-4/E	Colorimetry-4:lab color spaces	2007	B	Euro															0	
S015/E	Lighting of indoor work places	2005	C	Euro															0	
S016/E	Lighting req.for safety & security	2005	A	Euro															0	
S019/E	Photocarcinogenesis act.spect	2006	B	Euro															0	
S020/E	Emergency lighting	2007	B	Euro															0	
DS007.4	Erythema action spectrum	1998	X	-	1														0	X
DS010.2/.3	CIE sys.of physical photometry	2001	X	31				2						2					0	X
DS012.2/E	Spectral quality of daylight simu.	2002	X	31															0	X
DS015/E	Ltg.of work places-outdoor work	2002	X	31						1						1			0	X
DS018.2/E	Format for lumin.photome.data	2007	draft																0	

CIE/CNC PUBLICATION STOCK LIST

2008-SEPTEMBER-30

CIE	Title	Year	Price	Price				Sales							Purchase				Current	CB
No.			Code	Cd$	97-98	98-99	99-00	2001	2002	2003	04/05	05-08	99-00	2001	2002	2003	04/05	05-08	Stock	X
	Special CIE Publications:																			
X001	SLG-Div.5 symposium	1989	B	57															0	X
X002	SLG-Div.4 symposium	1989	-																0	X
X003	Daylight & solar radiation meas..	1989	J	122															1	X
X004	Symp.light & radiation	1981	A	43		1													0	X
X005	Proc.seminar computer program	1992	J	122															0	
X006	Japan CIE/PRAKASH91	1991	B	57															0	
X007	Proc. symposium colorimetry	1993	X	Euro	1	1													0	
X008	Urban sky glow	1994	E	80															1	
X009	Proc.symposium photometry	1995	L	166															2	
X010	Proc.symposium image tech.	1996	L	166															0	
X011	Proc. 95 late papres	1996	F	86															0	
X012	Proc.NPL-UK conf.-visual scale	1997	I	109															0	
X013	Proc. LED symp. '97	1997	I	109	1	1		1	1					1					0	
X014	Proc.symposium'97-colour std.	1998	K	137															0	
X015	Proc. symp. lighting quality	1998	H	98															0	
X016	Meas.of optical radiation haz.	1998	X	Euro															0	
X017	Special 24th CIE, Warsaw 1999	2000	G	91															0	
X018	Proc.of CIE sym.'99-75 yrs.	1999	L	166															0	
X018CD	Proc.of CIE sym.'99-75 yrs.	1999	X	Euro															0	
X019	Proc.of 3 workshops-road lighting	2001	J	122															0	
X020	Proc.of CIE symp. 2001	2001	I	109				1						1					0	
X021	Proc.of CIE symp. 2000	2001	I	109															0	
X022	Proc. of 2nd symp. on LED	2001	J	122				2	1					2	1				0	
X023	Proc.of two CIE workshops	2002	J	122															0	
X024	Proc.of CIE/ARUP sym.on visual	2002	L	166						1						1			0	
X024CD	Proc.of CIE/ARUP sym.on visual	2002	X	Euro															0	
X025	Temporal & spatial aspects of light	2003	L	166															0	
X025CD	Temporal & spatial aspects of light	2003	X	Euro															0	
X026	LED light source:measr.& asses.	2004	N	Euro															0	
X027	Light & Health:non-visual effect	2004	X	Euro															0	
X028	Vision&lighting in mesopic cond.	2005	H	Euro															0	
X029	Proc.of 2nd symp.Meas.uncer	2006	M	Euro															0	
X030	75 yrs of CIE std color.observer	2006	M	Euro															0	
X031	Proc.of 2nd symp.ltg&health	2006	M	Euro															0	
X032	Proc.of symp.visual appearance	2007	N	Euro															0	
AIC1AB	AIC Proc. 93 A+B	1993		Euro															0	
AIC1AC	AIC Proc. 93 A+C	1993		Euro															0	
AIC1ABC	AIC Proc. 93 A+B+C	1993		Euro															0	
Misc.	CIE symposium Toronto 2000	2000		10						1									0	
	Total				**19**	**21**	**14**	**28**	**24**	**27**	**17**	**0**	**14**	**24**	**16**	**39**	**2**	**0**	**280**	

NOTE:

1) **CB x** - Withdrawn and/or out-of-print publications from Central Bureau of CIE.
2) There was no publication purchase from CNC/CIE for the period: Oct/01/2007 - Sep/30/2008.
3) There was no publication sale from CNC/CIE for the period: Oct/01/2007 - Sep/30/2008.
4) Central Bureau of CIE's website is *www.cie.co.at*
5) Total value of the publications in stock is around Can$21,519.00 (includng some CBx publications)

APPENDIX G

CNC/CIE 53rd Annual Meeting

2008-October-24

CNC/CIE Web Site Report

CNC/CIE Web Site Report
October, 2008

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

Usage
I have not yet received the usage statistics for 2008.

Content
At present the content is a thorough description of the CIE-CNC and of Canadian participation in CIE activities, with an additional page of links to lighting information for Canadians. In 2008 the content was updated to include the presentations from the 2007 technical conference; a list of all CIE publications with Canadian content since 1970; the Code of Procedure; meeting minutes; and updated information concerning technical committee activities.

Translation services for this information have been provided by the National Research Council of Canada.

History of Lighting in Canada
Since 2007 I have made no progress in further developing the information on the history of lighting in Canada. One effective way to do this would be to make this a student project, perhaps as a task for a summer or co-op student. If the CNC were to fund it, I would be happy to supervise a student to do this, and can provide space and equipment to support the work.

Maintenance
The cost for the domain registration, site hosting, and maintenance in 2008 was $309.90. Although Mr. Bridges has been very busy this year, he has been very accommodating with my requests. I recommend that we continue our relationship with him.

It has not been an onerous task to be the liaison for the web site, and I would be pleased to continue in that role for the coming year.

COMMISSION INTERNATIONALE DE L'ÉCLAIRAGE
INTERNATIONAL COMMISSION ON ILLUMINATION
INTERNATIONALE BELEUCHTUNGSKOMMISSION

Canadian National Committee Comité National Canadien

APPENDIX H

CNC/CIE 53rd Annual Meeting

2008-October-24

CNC/CIE Finance Subcommittee Report

Finance Sub-Committee Report

Terms of reference:

A sub-committee was set-up at the 2007 annual meeting of the CNC/CIE to consider various options the CNC/CIE could use in managing and directing its finances. The attendees at the meeting recommended that the sub-committee consider ways in which the CNC/CIE could make its CIE publications more accessible, promote CNC/CIE- and CIE-related activities, and invest in the future of lighting in Canada. Suggestions at the meeting included the investment of some of the CNC/CIE funds and the use of some of the subsequent interest for scholarships to support students in travel to CNC/CIE or CIE meetings, or for assistance in their university studies.

Members:

S.M. McFadden (Chair), K.F. Lin, J.A. Love, and V. Venkataramanan

Report:

The group considered several suggestions to improve the visibility of the CIE and the CNC/CIE and Canadian participation in the CNC/CIE. These are discussed below. The first suggestion was the one most thoroughly discussed by the sub-committee. Thus, it is recommended that it be implemented in the coming year and that the remainder be explored in further detail. Our discussion did not cover whether we should use funds directly or invest money and pay any scholarship/travel out of the investment as suggested at the last meeting.

Suggestions:

1) To raise our profile in the research community, particularly among lighting students, it was proposed to carry out an annual competition for a scholarship to a student that had published a journal or conference paper or conference presentation or other scholarly work (e.g., patent) on a topic within the scope of the CIE divisions.

Eligible submitters would be students at a Canadian University or Canadian citizens or landed immigrant studying outside the country, enrolled in an undergraduate or graduate degree program. There was some discussion about whether students studying abroad should be included. The applicant must have made a significant contribution to the submitted item.

The application due date would be May 1 of each year so the award could be adjudicated prior to the annual meeting and in time to include it in the biannual technical day program in years in which that is held. In those years, travel funds would also be provided to attend the technical day programme and make a presentation.

To ensure good participation, it was also recommended that the CNC/CIE develop a list of people to whom could be sent a reminder of the award around Feb of each year. Initial suggestions were:

1) IRC lighting group (it has students on coop, internships, etc), Guy Newsham
2) U of T Optometry Institute, Venkat (optics)

3) U of Montreal (Dr. Marie Dumont - health)
4) U. of Laval , architecture, daylighting, Dr. Claude Demers
5) Concordia University, Building Engineering, Dr. Andreas Athienitis, daylighting, energy
6) UBC Physicist, Dr. Lorne Whitehead (daylighting, high dynamic range systems)
7) U of Calgary, J. Love (daylighting, energy)
8) U of Calgary, D. Irvine-Halliday (LED lighting systems)

2) To raise our profile amongst student groups with a potential interest in CIE activities, it was suggested to give grants to student chapters of relevant societies such as theOptical Society of America to encourage projects related to lighting, color, and others.

3) Another suggestion received by the committee for increasing the visibility of CNC/CIE activities was to develop a PowerPoint presentation about lighting in Canada, in all its aspects, and why it is important - not just the obvious lighting applications but the things the general public doesn't think about, like the importance of colorimetry to the paper industry. This presentation could then be made available to CNC members who could deliver it to suitable audiences across Canada -- e.g., to high-school students, engineering or physics programs in universities, to local IESNA chapters, to any group who would have one of us as a speaker. It could also put it on the web site, either in PDF format, or even as a video of one of the members giving the talk. Possibly, funds could be allocated to support the travel of individuals giving the talk.

4) The fourth proposal was to offer the CIE reports at the reduced rate. However, to get the reduced rate, people or companies would have to register with the CNC/CIE. Then they would receive the password. The advent of the web shop has potentially reduced the visibility of the CNC/CIE as people no longer need to contact us to purchase documents. This process might also encourage people to more actively support the CNC/CIE. Information about the reduced rate and the process for getting it would be put on our website. This has the additional advantage, at least initially, of preferentially supporting our associate members and others who visit our website.

The drawback to this proposal is it would result in a substantive loss of income from the sale of documents. At the reduced rate, we would make only a quarter of what we make at the high rate. In recent years, these sales have formed only a minor part of our income. Thus, we would have to look at other ways of maintaining sufficient funds to cover existing activities and the new ones proposed above.

Respectfully submitted

Sharon McFadden

Chair, Finance Sub-Committee

APPENDIX I

CNC/CIE 53rd Annual Meeting

2008-October-24

Draft CNC/CIE Code of Procedure 2008-October-14

Canadian National Committee for the International Commission on Illumination

CODE OF PROCEDURE

1. Background

The International Commission on Illumination (abbreviated as CIE from its French title Commission Internationale de l'Eclairage) is a scientific, technical and cultural, non profit organization devoted to international cooperation and exchange of information among its member countries on all matters related to the science and art of light and lighting. The national adhering body for Canada is the National Research Council (NRC) which, within its allocated Grant budget for international affiliations, pays Canada's annual contribution to the CIE. However, subject to the level of the annual Treasury Board grant for international affiliation dues as well as consultation with the Committee on International Science, Engineering and Technology (CISET), NRC retains the right to determine the level of its contribution or to terminate it.

Under an agreement between NRC Corporate Services and the NRC Institute for National Measurement Standards (INMS), signed in 1993 and renewed in 1998 and 2004, INMS is responsible for the Canadian National Committee for the CIE (CNC/CIE).

2. Objectives of CIE

The objectives of the CIE, as expressed in its Statutes, are:

1. To provide an international forum for the discussion of all matters relating to the science, technology and art of light and lighting[*] and for the interchange of information in these fields between countries. To achieve these goals the Commission organizes scientific educational events and holds CIE Sessions, normally every four years.
2. To develop basic standards and procedures of metrology in the fields of light and lighting.

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[*] *Light and lighting in these objectives is to be understood in the broad sense of embracing such fundamental subjects as vision, photometry and colorimetry, involving natural and man-made radiation over the UV, the visible and the IR regions of the spectrum, and application subjects covering all usage of light, indoors and out, including environmental and aesthetic effects, as well as means for production and control of light and radiation. From 1999 onwards also 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 are covered by CIE.*

3. To provide guidance in the application of principles and procedures in the development of international and national standards in the fields of light and lighting.
4. To prepare and publish proceedings, standards, technical reports and other publications concerned with all matters related to the science, technology and art of light and lighting.
5. To maintain liaison and technical interaction with other international organizations concerned with matters related to the science, technology, standardization and art in the fields of light and lighting.

From 1999 onwards also 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 are covered by CIE.

3. Terms of Reference

The Terms of Reference of the CNC/CIE are:

1. To collect and reconcile the many views of the Canadian lighting community on relevant issues.
2. To identify, represent and promote the capabilities and distinctive competence of its Canadian lighting community internationally.
3. To enhance the depth and breadth of the participation of the Canadian lighting community in the activities and events of the CIE and related organizations.
4. To establish the mechanisms for communicating to the Canadian lighting community the views of the CIE and information about activities of the CIE.
5. To distribute appropriate documentation, including the newsletter of the CIE.
6. To attract and stage international events of value to the Canadian lighting community.

The CNC/CIE reports to the Director General of INMS.

These Terms of Reference include the responsibility to respond to all ballots of the CIE including the approval of new CIE Standards and Technical Reports.

4. Secretariat

The Secretariat of the CNC/CIE is located at INMS.

5. Members

The CNC/CIE consists of a maximum of nineteen Members appointed by the Director General of INMS. Terms of office are normally four calendar years beginning on January 1 and are staggered to provide continuity. It is expected that the Membership will be distributed with regards to geography, linguistics and

gender, and that it should ensure adequate representation of disciplines covered by the CIE as well as an appropriate turn-over to encourage the participation of young Canadian scientists and engineers. Members must be normally resident in Canada. In making appointments, the Director General takes account of the recommendations of the CNC/CIE.

In addition to the appointed Members, the CNC/CIE includes the following ex-officio Members:

1. The Director-General of INMS or his/her delegate.
2. Any Canadian resident who is an Officer of the CIE or a Director or Associate Director of a CIE Division.

The duties of Members are:

1. To contribute to the objectives of the CNC/CIE, as set out in its Terms of Reference.
2. To be an Officer of the CIE, to be an Officer of the CNC/CIE, to be the official Canadian Member of a CIE Division, or to assist the official Canadian Member of a CIE Division.
3. To attend meetings of the CNC/CIE.
4. To vote in letter ballots of the CNC/CIE.

The terms of office of Members are renewable for additional terms subject to the recommendation of the CNC/CIE and the approval of the Director General of INMS.

Before each Annual Meeting, the Secretary shall inform Members whose terms are expiring and ascertain whether they are willing to be re-appointed. At the meeting, Members and Advisory Members shall discuss and vote on the re-appointments and on new appointments. Potential nominees shall retire from the meeting during the discussion and voting. Following the meeting, the Secretary shall submit the nominations to the Director General of INMS for approval, accompanied by brief biographies highlighting the nominees' contributions to the CNC and the CIE. Nominations are normally for 4-year terms but shorter terms may be necessary to maintain reasonable staggering.

6. Officers

The Officers of the CNC/CIE are appointed by the Director General of INMS, on the recommendation of the CNC/CIE, from among its Members. The Officers include:

1. A President who is responsible for conducting the affairs of the CNC/CIE, calling and chairing its meetings, and reporting to NRC on its activities.
2. A Vice-President who is responsible for performing the duties of the President whenever the President is unable to perform them.
3. A Secretary, who is responsible for keeping the records of the CNC/CIE including the minutes of meetings, maintaining mailing lists (of Members,

Advisory Members and other interested persons), corresponding with the Central Bureau of the CIE, conducting letter ballots on questions which arise between meetings, and other related duties.

4. A Treasurer, who is responsible for maintaining a bank account in the name of the CNC/CIE and receiving and dispersing funds as directed by the CNC/CIE.
5. A Publications Officer, who maintains a stock of older CIE Publications and is responsible for all matters related to the sale of CIE Publications to Canadian residents.
6. Any other Officers that the CNC/CIE deems necessary.

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

The Offices of President, Vice-President and Secretary must be held by separate people, but the Offices of Treasurer and Publications Officer may be combined with each other or with that of Secretary.

~~The slate of Officers shall be reviewed by the CNC/CIE at its first meeting following a CIE General Assembly and any recommendations for change shall be submitted to the Director General of INMS.~~

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

The slate of Officers shall be reviewed by the CNC/CIE at each Annual Meeting and a Nominating Committee consisting of three Members shall be appointed if the terms of any Officers are due to expire at or before the end of the following year. For each position for which the term of office is expiring, the Nominating Committee shall make at least one nomination, which can be the incumbent if he/she is willing to accept re-appointment. The Secretary shall distribute the nomination(s) to all Members and Advisory Members at least two months before the next Annual Meeting with a request for additional nominations. Nominations shall close two weeks before the meeting and the Secretary shall inform all Members and Advisory Members of any additional nominations at least one week before the meeting. All nominations, including those by the Nominating Committee, shall be accompanied by a brief biography highlighting the nominee's contributions to the CNC and the CIE. The nomination must have the approval of the nominee. A single nomination for each position shall be approved by the CNC at the meeting and the Secretary shall submit the agreed nominations to the Director General of INMS for approval.

If the term of office of a new Officer extends beyond his/her term as a Member, the latter shall be extended to bring it into agreement.

7. Executive Committee

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

8. Advisory Members

The CNC/CIE may appoint any number of Advisory Members to assist it in its duties and to assure adequate representation of all interests. Advisory Members must be normally resident in Canada and may attend meetings and take part in discussions on an equal basis with Members. When an Advisory Member is appointed, the Secretary shall inform them in writing.

The duties of Advisory Members are to contribute to the objectives of the CNC/CIE, as set out in its Terms of Reference, for example by being a member of a CIE Technical Committee or by otherwise assisting at least one official Canadian Member of a CIE Division in his/her duties.

The term of office of an Advisory Members is normally four years and is renewable subject to review by the CNC/CIE. Shorter terms may be approved to maintain reasonable staggering. The term of office of an Advisory Member appointed "ex officio" under Sections 17 and 18 corresponds to his/her term as a member of a CIE Committee.

Before each Annual Meeting, the Secretary shall inform Advisory Members whose terms are expiring and ascertain whether they are willing to be re-appointed. At the meeting, Members and Advisory Members shall discuss and vote on the re-appointments and on new appointments.

9. Observers

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

10. Consultants

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

11. Meetings

The President may call a meeting of the CNC/CIE whenever he/she deems it necessary or at the request of at least five Members, or at the request of the Director General of INMS. In any case there shall be a meeting in the last quarter of each calendar year. Members must be given at least three weeks notice of any CNC/CIE meeting.

12. Quorum

A quorum consists of one-half of the Members, including proxies and ex-officio Members. Advisory Members are not counted in determining a quorum.

13. Voting

In dealing with matters at meetings and by letter ballots, Members and Advisory Members are treated equally. A simple majority of Members and Advisory Members is required to ensure the passage of a motion. Members who are unable to attend a meeting may assign their vote to a proxy provided that they give written notice to the Secretary before the meeting.

14. Letter Ballots

At the request of the President or at least five Members of the CNC/CIE, or to deal with matters referred to the CNC/CIE by the CIE, the Secretary shall send out letter ballots (electronically or by hard copy) to all Members and Advisory Members to ascertain their opinion on any question that arises between meetings.

The passage of any motion thus submitted requires:

1. A simple majority of those Members and Advisory Members who vote.
2. That the number of Members who vote constitute a quorum.
3. That all Members and Advisory Members be given at least three weeks notice of the closing date of the letter ballot.

Negative votes on a letter ballot shall be accompanied by an explanation.

As a matter of expediency, and at the discretion of the President, some letter ballots may be restricted to Members only.

15. Delegates to CIE General Assemblies

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

16. Members of CIE Divisions

The CNC/CIE, whenever possible, appoints a voting Member to each CIE Division. If the person appointed is not already a Member of the CNC/CIE, he/she shall be nominated to the Director General of INMS for appointment as a Member immediately.

The duties of the Division Members are:

1. To ascertain the views prevailing in Canada and to express these views in the deliberations of the Division either by correspondence or at meetings.
2. To report in writing to the CNC/CIE, at its annual meeting, on the activities of the Division.
3. To advise the CNC/CIE on matters pertaining to the Division and its associated Technical Committees.
4. To encourage Canadian experts to be active members of Technical Committees within the Division.
5. To inform the Secretary of all Canadians who become members of Technical Committees within the Division.

If the Canadian Division Member is unable to attend a Division meeting, he/she~~the President~~ may appoint a substitute voting member. If he/she does not do this, the President may do so. The Division Member or the President must inform the CIE Division Secretary or Director of this appointment. The substitute must present a report of his/her actions to the regular Member after the meeting.

The Member's annual report to the CNC/CIE should include the latest Activity Report of the Division (or a pointer to an electronic version), a summary of issues of particular importance to Canada, and a list of Canadian members of Technical Committees within the Division.

Division Members are normally appointed for four-year terms. The terms of office are renewable for additional terms. The slate of Division Members shall be reviewed by the CNC/CIE at each Annual Meeting.

~~The term of office of a Division Member shall end at the first meeting of the CNC/CIE following a CIE General Assembly. However, the~~ A retiring Division Member's term as a Member of the CNC/CIE is subject to the terms of Section 5 and may continue after his/her term as a Division Member ends.

To assist each Division Member, the CNC/CIE, whenever possible, appoints a minimum of two other Members or Advisory Members to assist him/her.

17. Members of CIE Technical Committees

Members of CIE Technical Committees are appointed by the Technical Committee Chair. The CNC/CIE, in consultation with the appropriate Division member, may nominate a member for a CIE Technical Committee on which it is not already represented. This right should only be used if a competent person is available and prepared to be active. Any Canadian member of a CIE Technical Committee, whether appointed directly by the Technical Committee Chair or nominated by the CNC/CIE, who is not already a Member or Advisory Member of the CNC/CIE, automatically becomes an Advisory Member.

18. Members of Other CIE Committees

Canadian Members of other CIE Committees, such as the Finance Committee, who are not already Members or Advisory Members of the CNC/CIE, automatically become Advisory Members.

19. CIE Publications

The CNC/CIE receives royalties from the CIE for CIE Publications sold to residents of Canada. In addition, the CNC/CIE has purchased certain older CIE Publications from the Central Bureau and sells them in Canada with an appropriate mark-up. Proceeds from these royalties and sales, after deduction of costs, are used to support activities of the CNC/CIE.

20. Funding

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

The NRC International Relations Office will, subject to the availability of funds, contribute to the travel costs of university-based Canadian delegates to a CIE General Assembly.

21. Amendment of Code of Procedure

This Code of Procedure may be amended by an affirmative vote of a simple majority of the Members of the CNC/CIE, at a meeting or by letter ballot, provided that notice of motion has been given at least two months before the date of the meeting or the closing date of the letter ballot, and that the number of Members who vote constitute a quorum. Adoption of the amended Code requires the approval of the Director General of INMS.

COMMISSION INTERNATIONALE DE L'ÉCLAIRAGE
INTERNATIONAL COMMISSION ON ILLUMINATION
INTERNATIONALE BELEUCHTUNGSKOMMISSION

Canadian National Committee Comité National Canadien

APPENDIX J

CNC/CIE 53rd Annual Meeting

2008-October-24

Report on CNC/CIE 2007
Annual Performance Review by NRC-IRO/CISET

COMMISSION INTERNATIONALE DE L'ÉCLAIRAGE
INTERNATIONAL COMMISSION ON ILLUMINATION
INTERNATIONALE BELEUCHTUNGSKOMMISSION

Canadian National Committee Comité National Canadien

CNC/CIE 2007 Annual Performance Review
Report to the 53rd annual meeting

A.A. Gaertner, Secretary

The NRC International Relations Office has developed an Annual Performance Review (APR) questionnaire, requested by the NRC advisory Committee on International Science, Engineering and Technology (CISET), that focuses on assessing the impact of Canada's international affiliations supported through the NRC Grant Transfer Program. The questionnaire is distributed to all NRC Partners/CNCs. Annual dues and any other payments will be withheld until receipt and successful review of the questionnaire by CISET. We received this APR questionnaire on 2007-November 22 (Appendix 1). After extensive work by J.A. Love, J.A. Veitch, S.M. McFadden, J.C.!Zwinkels and other CNC/CIE Members, we submitted the final APR to NRC-IRO on 2008-February-21. (The deadline for returning the APR to NRC-IRO had been extended to 2008-February-29.) A copy of this CNC/CIE APR2007 (*Annual Performance Review of International Affiliations*) is attached to this report.

On 2008-April-04 I received a telephone reply from Mr. Marc Watters, a Research Policy Officer with the NRC-IRO, to discuss with me the results of our CNC/CIE APR2007 submission. The following report follows from notes I made during, and immediately after, the conversation. I have not received a written report to date.

Mr. Watters stated that his intent was to explain to me our rating, the reasons for it and how we could increase this rating for the next review. He indicated that since this was the first time for this type of review, it was important that we all (there are many other Canadian national committees also submitting APRs) come to an understanding of what was expected in the review, and the intent of the conversation was to assist us in presenting ourselves well on this review. Therefore he was primarily concerned with discussing the areas of the review in which we did not receive a high rating.

The APR has been reviewed by CISET. The results are the average of the reviews given by three reviewers. As indicated in the APR, the assessment rating was for three levels: High/Medium/Low, with points 5/3/1 respectively. Therefore, for a total of 9 questions, the maximum rating would be 45 points. A passing rating was assigned to be 27 points. It is my understanding that CISET will fund all those who have a passing rating. The rating that the CNC/CIE received was 34:

We received a Medium-to-High rating for questions 1a and 1b,
We received a Low-to-Medium rating for questions 2a and 2b,
We received a High rating for questions 3, 4, 5a, and 6, and
We received a Medium rating for question 5b.

Our discussions were then concerned with the reasons for the ratings less than High:

Question 1a (Medium-to-High rating): my understanding of the comments here was that we showed support for basic areas that supported the S&T priorities, rather than supporting the S&T priorities directly themselves.

Question 1b (Medium-to-High rating): while we indicated a high level of government and university involvement, the reviewers would like to see information concerning private sector involvement in R&D.

Questions 2a and 2b are our weak points, probably in that information is missing, as opposed to lack of activity on our part:

Question 2a (Low-to-Medium rating): We have shown that we disseminate information well to our Canadian community. We have not shown how we gather information from the Canadian community, what we do with this information and how we then present this information into the CIE internationally. i.e. how do local concerns get 'up' into the CIE? I think this translates into how do our Division Members gather information from Canadians, and then how do they present this information at CIE meetings.

Question 2b (Low-to-Medium rating): they were looking for 3 examples and we only presented 2. In addition, they wished to know what our representation did for Canada – what were the results of our representations at the General Assemblies?

Question 5b (Medium rating): While we gave 5 examples of our activities, we did not provide any follow-up to indicate that we Canadians are the experts in these activities and that the world looks to us as experts. The implication is that they want to know whether our presentations are just reviews of work that has been done elsewhere, or are they presentations of our original research.

Mr. Watters then asked if there were any comments that the CNC/CIE wished to present at this time. I noted that most of the items looked at a 5-year or longer time period and I questioned why the APR needed to be a yearly consideration. Mr. Watters indicated that if there were not large changes from year to year, it was reasonable to only modify the report slightly. They are particularly interested in whether committees may have special requests in certain years, such as for funding for presenting international conferences or for attending international meetings. I also noted that many of our Division Members were unable to attend international meetings because of funding problems. He indicated that this was the type of concern about which they were interested in hearing.

Appendix 1
NRC-IRO request to CNC/CIE for CIE 2007 Annual Performance Review

From: Gattola, Sandra [Sandra.Gattola@nrc-cnrc.gc.ca]
Sent: Thursday, November 22, 2007 15:10
To: Gaertner, Arnold (INMS) (SMTP)
Cc: Pinard, Denis
Subject: Annual Performance Review Questionnaire

Dear Dr. Gaertner,

As you are aware, the National Research Council of Canada (NRC) is the Adhering body to ICSU for Canada. In order to fulfill its mandate in relation to federal government regulations and ICSU, the NRC maintains partnership agreements with various societies, unions, and organizations in Canada in support of International Affiliations.

Recently, in response to the Government's focus on transparency on federal programs, the NRC's International Affiliations program has come under review. In July 2007, the NRC's advisory Committee on International Science, Engineering and Technology (CISET) met to discuss issues pertaining to the International Affiliations program and decided that an annual performance review (APR) questionnaire will now be sent out to all NRC Partners/CNCs. This questionnaire will be used by NRC and CISET to help determine which partnership agreements have the most pronounced and positive impacts and are the strongest candidates for continued support.

Please complete the attached questionnaire and return to Sandra Gattola by 31 January 2008. Please note, that payment of annual dues will be withheld subject to receipt and successful review of the questionnaire.

In order to assist you in the completion of various sections of the questionnaire, we have included below some useful web links.

Canadian S&T Strategy Documents:

Federal S&T Strategy: Mobilizing Science and Technology to Canada's Advantage
http://www.ic.gc.ca/cmb/welcomeic.nsf/vRTF/PublicationST/$file/S&Tstrategy.pdf

NRC S&T Strategy: Science at Work for Canada
http://www.nrc-cnrc.gc.ca/aboutUs/corporatereports/pdf/NRC_strategy_2011_e.pdf

NSERC Strategy: Towards a Country of Discovers and Innovators
http://neumann.hec.ca/cfbsd/nserc.pdf

SSHRC Strategy: Knowledge Council
http://www.sshrc.ca/web/about/publications/strategic_plan_e.pdf

CIHR Strategy: Investing in Canada's Future: A Blueprint for Health Research and Innovation
http://www.cihr-irsc.gc.ca/e/pdf_20268.htm

Thank you very much for your assistance.

Sandra Gattola
Office Coordinator / Coordonnatrice de bureau
International Relations Office /
Bureau des relations internationales
National Research Council of Canada /
Conseil national de recherches Canada
Government of Canada / Gouvernement du Canada
100 promenade Sussex Drive, 1038F
Ottawa, ON K1A 0R6
Tel. +1.613. 991.5942
Fax. +1.613.952.9696

Annual Performance Review of International Affiliations

Assessment of the Partnership between the National Research Council of Canada (NRC) and the NRC Institute for National Measurement Standards (INMS) in support of Canada's affiliation with the Commission internationale de l'éclairage (CIE)

Submitted by the Institute for National Measurement Standards/Canadian National Committee (CNC) for CIE to the NRC ICSU Secretariat and the Committee on International Science, Technology, and Engineering (CISET)

The Annual Performance Review provides a means for the NRC ICSU Secretariat and CISET to assess the impact of Canada's International Affiliations. The APR is conducted through a Questionnaire and Response Assessment Framework focused on evaluating two unique criteria: The relevance of the International Affiliation within a Canadian context (Importance), and; the capacity of the supporting NRC Partner/CNC to generate beneficial results and outcomes for Canadians (Effectiveness). International Affiliations demonstrating a high level of importance within a Canadian context, and whose NRC Partners/CNCs effectively generate multiple beneficial results and outcomes for Canadians, will have the most pronounced and positive impacts, and will be considered as the strongest candidates for continued support.

The APR is a mandatory assessment and questionnaire responses should be submitted to the ICSU Secretariat and CISET by the Institute for National Measurement Standards/CNC for CIE before the 31st of January 2008. Failure to submit a questionnaire response will result in the cancellation of support within the International Affiliation Grant Transfer Program (IAGTP).

The APR Questionnaire and Response Assessment Framework will also be used to evaluate the candidacy of new applicants requesting support within the IAGTP. Applicants should answer Section 1 as outlined, and for Section 2, provide a description of the specific steps or strategic plan that would be implemented to generate the desired results and outcomes.

Questions should be answered concisely and in point form.

Reviewer Contact Information

Name	Dr. Arnold Gaertner
Title	Secretary, CNC CIE
Organization	NRC Institute for National Measurement Standards
Email	arnold.gaertner@nrc-cnrc.gc.ca

General Information on the CIE

Name of Union/affiliation	Commission internationale de l'éclairage
Name of Canadian Partner	NRC Institute for National Measurement Standards
Annual Due *Specify type of currency_____	7,270.00 EUROS (2007) _____
Category of Membership Adherence _____	Member _____

Annual Performance Review Questionnaire

Section 1: Assessment of the Importance of the CIE

1. Is the CIE important within a Canadian context?

a) Does the field of science represented by the CIE support Canada's identified S&T Priorities and Policy Objectives?
Describe how the field of science represented by the CIE supports the S&T priorities affirmed by the Federal Government in the 2007 S&T Strategy and/or advances the S&T policy objectives of Canadian institutions and organizations such as NSERC, SSHRC, CIHR, NRC, etc. (Federal priorities for Canadian S&T investment focused on environmental science and technologies, health and related life sciences and technologies, information and communications technologies, and natural resources and energy)

- In 2005, Canadians spent about $3.5 billion on electricity for lighting, just one metric of the importance of lighting in Canadian society. The CIE is devoted to worldwide cooperation on all matters relating to the science and art of light and lighting, colour and vision, and image technology as it relates to colour and vision.
- This scope corresponds closely to the following federal priorities:
    - Health and related life sciences: Division 6 (Photobiology and Photochemistry) develops consensus information about health risks and benefits associated with light exposure: e.g., current research on light exposure in shift work and incidence of cancer. Divisions 3-5 make recommendations affecting health and safety.
    - Information and communication technologies: Division 8 (Image Technology) addresses the many issues raised by digital imaging, such as colour accuracy across media from electronic displays to print.
    - Natural resources and energy: Divisions 3-5 address interior, transport, and exterior lighting. Activities in these divisions develop consensus recommendations that influence lighting energy use and greenhouse gas emissions.
    - Measurement standards of light underpin all lighting activities: Division 2 studies and develops procedures and equipment for evaluating optical radiation and optical properties of materials and luminaires.
- Furthermore, the CIE is the internationally recognized standards-writing body for lighting. Canadian membership in the CIE is required for our participation in the development of lighting-related standards that are important to Canadian industrial competitiveness.
- The CIE is the only organization that knits together the varied disciplines related to the art and science of lighting, from physics and metrology through psychology and medicine to architecture and engineering. It embodies the priority of co-ordination of resources and activities set by the Presidents of NSERC, CIHR, and SSHRC (http://www.nserc.gc.ca/about/initiatives/Tri-Agency/message_e.htm).

SECTION TO BE FILLED IN BY REVIEWER

Assessment Rating for 1.a) Response: Provide rating here

High:
The Institute for National Measurement Standards/CNC for CIE has demonstrated that the field of science represented by the International Affiliation strongly supports the Canadian S&T Priorities affirmed in the Federal Governments 2007 S&T Strategy and/or the S&T policy objectives of Canadian organizations such as NSERC, SSHRC, CIHR and the NRC.

Medium:
The Institute for National Measurement Standards/CNC for CIE has demonstrated that the field of science represented by the International Affiliation moderately supports the Canadian S&T Priorities affirmed in the Federal Governments 2007 S&T Strategy and/or the S&T policy objectives of Canadian organizations such as NSERC, SSHRC, CIHR and the NRC.

Low:
The Institute for National Measurement Standards/CNC for CIE has not demonstrated that the field of science represented by the International Affiliation supports the Canadian S&T Priorities affirmed in the 2007 Federal Strategy or the S&T policy objectives of Canadian organizations such as NSERC, SSHRC, CIHR and the NRC.

Provide additional comments here if necessary. Limit 1000 characters.

b) Does the CIE support a critical and highly developed Canadian scientific network?
or
Does the field of science represented by the CIE hold the potential to bring forth scientific advancements that would benefit Canadians, thereby warranting the creation a new Canadian scientific network?

Describe the key components and features of the Canadian S&T network, highlighting the number of public and private scientists active in the field (students, professors, researchers, and doctors), the number of public institutions and private companies engaging in basic research, applied research, and/or commercialization activities (and the total value of their investment in each activity), and the capacity of global markets to acquire related products and services.
or
Describe the S&T advancements (knowledge related, products and services, processes and applications) proposed and in development that could impact favorably on Canadians, enhancing our quality of life, ability to contribute to global challenges, environmental performance and sustainability, global competitiveness, international relations, and economic performance and prosperity.

- Relative to the importance of the field, the number of Canadian researchers is small but their impact is high. There are approximately 30 permanently employed Canadian researchers doing lighting-related work. The subject matter they investigate touches every Canadian every day.
- The CNC/CIE membership and contacts list includes 87 people from 69 institutions and firms across Canada. The CNC provides links between researchers and the varied industry and business interests related to lighting.
- The CNC/CIE meets annually to review the activities of all seven CIE Divisions. Minutes are distributed to all associate members.
- Technical documents and draft standards are reviewed and voted on by relevant members of the Canadian science community.
- Members of the Canadian scientific community are invited to participate in technical committees set

up by the various CIE Divisions. The CNC has been working to develop a syllabus for a university course on lighting, to promote lighting education in Canada.

- Examples of lighting research contributions to Canada are:
  - NRC-INMS researchers contribute to the international competitiveness of the paper industry, as well as industries such as textiles and plastics, that require traceable accurate measurements of fluorescent materials (http://www.nrc-cnrc.gc.ca/highlights/2008/0801metro_e.html).
  - NRC-INMS scientists are carrying out research on an ultra high-temperature blackbody source, which will be one of the world's most accurate systems to measure ultraviolet (UV) light. UV measurements are critical for a wide range of environmental and health issues, emerging industrial technologies, and regulatory requirements pertaining to global trade. (http://www.nrc-cnrc.gc.ca/highlights/2006/0602blackbody_e.html).
  - The NRC Institute for Research in Construction (NRC-IRC) has included lighting research among its Indoor Environment Research program activities since 1977, recognizing the importance of lighting effectiveness and efficiency to the productivity, health, and safety of Canadians. NRC-IRC researchers have won many international awards in recognition of their contributions to science.
  - A 2007 international journal article reported a collaborative field assessment by NRC-IRC and BC Hydro staff of a Canadian designed office lighting system that reduced lighting energy use about 50% from other systems evaluated to date.
  - At UBC, the NSERC/3M Chair in Structured Surface Physics is developing a daylight guidance system with the potential for dramatic energy savings. The lab has previously developed a novel technology for high-dynamic-range imaging that has resulted in a spin-off company being formed (recently acquired by a major manufacturer).

SECTION TO BE FILLED IN BY REVIEWER

Assessment Rating for 1.b) Response: Provide rating here

High:
The Institute for National Measurement Standards/CNC for CIE has demonstrated that the International Affiliation supports a critical and highly developed Canadian scientific network comprising large numbers of public and private scientists, an extensive base of public and private companies engaging in basic research, applied research, and/or commercialization, and connected to global markets with a pronounced demand for related products and services

or

The Institute for National Measurement Standards/CNC for CIE has described a suite of knowledge growth opportunities, products, services, processes and applications currently being developed within the relevant field of science, and has clearly demonstrated their potential to bring forth scientific advancements that would benefit for Canadians in areas related to quality of life, contribution to global challenges, environmental performance and sustainability, global competitiveness, international relations, or economic performance and prosperity.

Medium:
The Institute for National Measurement Standards/CNC for CIE has demonstrated that the International Affiliation supports moderately developed Canadian scientific network comprising intermediate numbers of public and private scientists, a significant base of public and private companies engaging in basic research, applied research, and/or commercialization, and connected to global markets with the potential to acquire related products and services.

or

The Institute for National Measurement Standards/CNC for CIE has described a proposed suite of knowledge growth opportunities, products, services, processes and applications that could be developed in future within the relevant field of science, and has clearly demonstrated their potential to bring forth scientific advancements that would benefit for Canadians in areas related to quality of life, contribution to global challenges, environmental performance and sustainability, global competitiveness, international relations, or economic performance and prosperity.

Low:

	The Institute for National Measurement Standards/CNC for CIE has not demonstrated that the International Affiliation supports a scientific network that is relevant and developed in Canada. **or** The Institute for National Measurement Standards/CNC for CIE has not described any current or proposed future knowledge growth opportunities, products, services, processes or applications that could bring forth scientific advancements that would benefit Canadians in areas related to quality of life, contribution to global challenges, environmental performance and sustainability, global competitiveness, international relations, or economic performance and prosperity. Provide additional comments here if necessary. Limit 1000 characters.

Section 2: Assessment of the Effectiveness of the Supporting NRC Partner/CNC for CIE

2. Does the Institute for National Measurement Standards/CNC for CIE ensure the representation, promotion, and protection of Canadian interests in the international scientific community?

a) Does the Institute for National Measurement Standards/CNC for CIE consult with the domestic science community to identify and consolidate opinions, concerns, suggestions, and perceived challenges, and does it ensure their presentation to and support within the International Affiliation?
Document the consultative processes, meetings and assemblies, surveys and questionnaires, and discussion forums employed to obtain input from Canadian stakeholders, and describe the subsequent actions taken to promote and support stakeholders' interests within the International Affiliation.

- The Secretary of the CNC maintains postal and e-mail lists of the various member categories as defined in our Code of Procedure. He regularly mails (or e-mails) information to the various groups. Documents on which a CNC vote or comment is required are sent to Members and are made available to Advisory Members. Responses are collated by the Secretary and returned to the CIE Central Bureau.
- The CNC meets annually to review activities and to conduct its business. All Members, Advisory Members, and General Interest members are invited to participate.
- The voting Membership in the CNC is balanced for coverage of topic areas and geographic representation.
- The CNC meets biannually with the USA National Committee of the CIE (in odd-numbered years), and on those occasions holds a one-day technical conference. Through this venue we have located and involved lighting researchers in various fields.
- Our web site (http://www.cie-cnc.ca) is a means to inform all Canadians as to the activities of the CNC-CIE.

SECTION TO BE FILLED IN BY REVIEWER

Assessment Rating for 2.a) Response: Provide rating here

High:
The Institute for National Measurement Standards/CNC for CIE engages in consultative processes such as meetings and assemblies, surveys and questionnaires, and discussion forums, outside of regular membership meetings, at least once a year. The Institute for National Measurement Standards/CNC for CIE has demonstrated that stakeholder input gathered during consultative processes is promoted and supported within the International Affiliation.

Medium:
The Institute for National Measurement Standards/CNC for CIE engages in consultative processes such as meetings and assemblies, surveys and questionnaires, and discussion forums, outside of regular membership meetings, at least once every two years. The Institute for National Measurement Standards/CNC for CIE has demonstrated that stakeholder input gathered during consultative processes is promoted and supported within the International Affiliation.

Low:
The Institute for National Measurement Standards/CNC for CIE does not engage in consultative processes, outside of regular membership meetings. The Institute for National Measurement Standards/CNC for CIE has not demonstrated that stakeholder input gathered during consultative processes is promoted and supported within the International Affiliation.

Provide additional comments here if necessary. Limit 1000 characters.

b) Does the Institute for National Measurement Standards/CNC for CIE ensure that Canadian Delegates participate strategically in the conduct of General Assemblies of the CIE?

Describe the contributions of Canadian Delegates to the General Assemblies of the CIE. Highlight contributions (note whether presentation, discussion, debate, vote, etc) that lead to the selection of research priorities, conference and symposium themes, areas of focus for international projects and collaborations, proposed constitutional amendments, etc, reflective of Canadian interests.

- The CIE General Assembly meets every two years. A full CIE Session was held in Beijing, China, July 4-11, 2007. The CNC nominates two delegates from the CNC to attend each General Assembly. These delegates actively participate in the General Assembly and report back to the CNC as well as NRC International Affairs. At the General Assembly meeting on July 4:
  - CNC Vice-President Joanne Zwinkels represented Canada at the GA meeting in Beijing. She submitted a report on this meeting to NRC International Affairs.
  - Past CNC President Sharon McFadden concluded her four-year term as director of CIE Division 1 (Vision and Colour). This gave her a seat at the General Assembly as a member of the Board of Administration.

SECTION TO BE FILLED IN BY REVIEWER

Assessment Rating for 2.b) Response: Provide rating here

High:
The Institute for National Measurement Standards/CNC for CIE has provided three examples where it has encouraged Canadian Delegates to present, discuss, debate, or vote on issues at General Assemblies of the CIE. The Institute for National Measurement Standards/CNC for CIE has demonstrated that the contributions of Canadian delegates led to the successful selection of research priorities, conference and symposium themes, areas of focus for international projects and collaborations, proposed constitutional amendments, etc, that reflect and support Canadian interests.

Medium:
The Institute for National Measurement Standards/CNC for CIE has provided three examples where it has encouraged Canadian Delegates to present, discuss, debate, or vote on issues at General Assemblies of the International Affiliation. The Institute for National Measurement Standards/CNC for CIE has not demonstrated that the contributions of Canadian delegates lead to the successful selection of research priorities, conference and symposium themes, areas of focus for international projects and collaborations, proposed constitutional amendments, etc, that reflect and support Canadian interests

Low:
The Institute for National Measurement Standards/CNC for CIE has not provided three examples where is has encouraged Canadian Delegates to present, discuss, debate, or vote on issues at General Assemblies of the International Affiliation.

Provide additional comments here if necessary. Limit 1000 characters.

3. Does the Institute for National Measurement Standards/CNC for CIE ensure the promotion of Canadian contributions to international decision making?

Does the Institute for National Measurement Standards/CNC for CIE successfully encourage Canadian scientists to rise to leadership and decision making positions within the CIE?

Identify Canadians that have successfully attained executive, committee, work-group, commission, or panel positions, and describe the beneficial outcomes they have generated or supported reflective of Canadian interests.

- Canadian members hosted two of the seven CIE expert symposia held in the 2004-2007 quadrennium.
- Canadians currently serve on ~37 of the ~130 CIE technical committees.
- Dr. Jennifer Veitch began in 2007 a four-year term as Secretary of Division 3 (Interior Environment and Lighting Design).
- Dr. Lorne Whitehead of UBC served as chair of the technical committee that developed CIE Publication 164:2005 *Hollow Light Guide Technology and Applications*. Dr. Whitehead holds a related patent "Enhanced Effective Refractive Index Total Internal Reflection Image Display", U.S.A. Patent No. 6,304, 365, issued Oct 16, 2001. The CIE publication contributes to standardization of methods that facilitates adoption of the technology.
- Mrs. Sharon McFadden is chair of CIE technical committee TC1-64 "Terminology for Vision, Color, and Appearance".
- Dr. Joanne Zwinkels of NRC-INMS served as chair of the CIE technical committee TC 2-25 that developed CIE Publication 182:2007 *Calibration Methods and Photoluminescent Standards for Total Radiance Factor Measurements*. This technical report was issued in December 2007.
- Dr. Alan Robertson, Visiting Scientist with NRC-INMS, serves as Chair of the technical committee CIE TC 1-57 that is preparing four International Standards that will define and normalize fundamental colorimetric calculations and specifications. In September 2007, "Part 4: CIE 1976 L*a*b* Colour Space" was published as Standard S014-4/E:2007.
- Dr. J. Veitch was chair of TC 6-11 that produced the first consensus report concerning the effects of light on human health: CIE158:2004 *Ocular Lighting Effects on Human Physiology and Behaviour*. She also chairs the new TC 3-46, which will develop a research road map to support the application of this knowledge into lighting practice.
- Dr. J. Veitch also chairs TC 3-34 "Protocols for Describing Lighting", which is developing specific measurement routines for applied lighting research to improve inter-laboratory comparability.

SECTION TO BE FILLED IN BY REVIEWER

Assessment Rating for 3.) Response: Provide rating here

High:
The Institute for National Measurement Standards/CNC for CIE has provided three examples where it has successfully encouraged Canadian scientists to attain executive, committee, work-group, commission, or panel positions. The Institute for National Measurement Standards/CNC for CIE has demonstrated that members attaining leadership and decision making positions have advanced Canadian interests and generated beneficial Canadian outcomes.

Medium:
The Institute for National Measurement Standards/CNC for CIE has provided three examples where it has successfully encouraged Canadian scientists to attain executive, committee, work-group, commission, or panel positions**.** The Institute for National Measurement Standards/CNC for CIE has not demonstrated that members attaining leadership and decision making positions have advanced

Canadian interests and generated beneficial Canadian outcomes.

Low:
The Institute for National Measurement Standards/CNC for CIE has not provided three examples where it has successfully encouraged Canadian scientists to attain executive, committee, work-group, commission, or panel positions.

Provide additional comments here if necessary. Limit 1000 characters.

4. Does the Institute for National Measurement Standards/CNC for CIE encourage and support Canadian scientists to take advantage of emerging international networking opportunities?

Are Canadian scientists developing international relationships, partnerships, and collaborations through participation in the International Affiliation?
Identify key contacts and relationships cultivated, and international partnerships or collaborations established, between Canadian scientists and other world class scientific leaders and experts

- Dr. Joanne Zwinkels of NRC-INMS has collaborated with researchers in the USA (Dr. J. Travis), Spain (Dr. J. Acosta), Hungary (Dr. G. Andor), France (Dr. J. Bastie), Switzerland (Dr. P. Blattner), the UK (Dr. C. Chunnilall), South Africa (Dr. F. Hengtsberger), and Korea (Dr. C. Kim) in the international evaluation of an intrinsic wavelength standard.
- Dr. Joanne Zwinkels of NRC-INMS has collaborated with researchers in the USA (Dr. P. DeRose) and Germany (Drs. Ute-Resch-Genger, B.Ebert, W. Bremmer) in determining the state-of-the-art measurement capabilities in fluorescence spectroscopy and evaluating instrument calibration procedures and candidate spectral fluorescence standards.
- Dr. Réjean Baribeau of NRC-INMS is collaborating with researchers in the USA (Drs. G. Eppeldauer and Y. Ohno) in the research and development of a prototype primary-level tristimulus colorimeter.
- Dr. Donald Kline of the University of Calgary is collaborating with scientists in Japan (Dr. Sagawa) on standardization of different methods of assessing visual capability.
- Mrs. Sharon McFadden is working with scientists in Spain and the USA to develop a standard contrast sensitivity function. This function is required to develop better transforms to ensure consistent colour appearance of images across different media.
- The NRC-IRC Lighting subprogram is developing a new proposal for collaboration with the Danish Building Research Institute through contacts made at CIE.
- A new proposal for collaborative work between NRC-IRC and NRC-IBD has advisory support from Dr. George Brainard of the USA, through his involvement in TC 6-11 (Dr. J. Veitch).
- NRC-IRC regularly hosts undergraduate students from France through contact with Dr. Marc Fontoynont of ENPTE (currently CIE VP).

SECTION TO BE FILLED IN BY

Assessment Rating for 4.) Response: Provide rating here

High:
The Institute for National Measurement Standards/CNC for CIE has identified and described 4 to 5 relationships, international partnerships, or collaborations established with world class scientists, fostered through participation in the International Affiliation, and has provided key contact information.

Medium:

The Institute for National Measurement Standards/CNC for CIE has identified and described 1 to 3 relationships, international partnership, or collaboration established with world class scientists, fostered through participation in the International Affiliation, and has provided key contact information.

Low:
The Institute for National Measurement Standards/CNC for CIE has not identified any relationships, international partnerships, or collaborations established with world class scientists, fostered through participation in the International Affiliation.

Provide additional comments here if necessary. Limit 1000 characters.

5. Does the Institute for National Measurement Standards/CNC for CIE encourage an support Canadian scientists to take advantage of opportunities to showcase Canadian achievements, technologies, and capacity?

a) Does the Institute for National Measurement Standards/CNC for CIE host Major Scientific Conferences in Canada?

Provide a concise overview of any major scientific conferences hosted in Canada in the last 15 years, providing information on the conference's themes and objectives, number of attendees, participating countries, key speakers and presenters and the substance of their discussions and presentations, spin-off developments, feedback from participants, and identify any major conference outcomes with Canadian or Global implications. (If no major scientific conferences have been hosted in the last 15 years, provide information on any unsuccessful bids made in the last 5 years)

- The hosting by CNC members of two of the seven expert symposia held under CIE auspices in the 2004-2007 quadrennium offered excellent opportunities for Canadian scientists to showcase Canadian achievements, technologies, and capacity.
- "75 Years of the CIE Standard Colorimetric Observer" (May 16-17, 2006, Ottawa). This Symposium included 27 presented papers, divided amongst 9 sessions, 5 posters and 1 round-table discussion. Over 90 delegates attended with 20 countries represented. Session topics included the standard colorimetric observer, colour matching functions, instruments and standards, temporal and spatial issues, application of the standard observer, colour appearance, colour differences, and colour management. There were 8 Canadian attendees and 3 papers had Canadian authors. The final session was a lively round-table discussion chaired by Mrs. Sharon McFadden of Defence Research & Development Canada (DRDC). Mrs. McFadden also presented a final paper, summarizing the conclusions of the Symposium.
- 2nd CIE Expert Symposium on Lighting and Health (Sept. 7-8, 2006, Ottawa). More than 160 people from 26 countries attended, 33% higher than expectations. Financial support from major corporations was greater than for previous CIE symposia, and permitted all invited speakers' expenses to be paid. The event attracted media attention from CBC Radio One and television, Radio Canada International, CFRA radio, Ottawa *Citizen*, and *Le Droit*. NRC-IRC awarded its employees the Public Awareness award in 2007 for their work hosting this international event.

SECTION TO BE FILLED IN

Assessment Rating for 5.a) Response: Provide rating here

High:
The Institute for National Measurement Standards/CNC for CIE has successfully hosted at least one major scientific conference in Canada in the last 15 years. The Institute for National Measurement Standards/CNC for CIE has provided a complete and concise overview of conference activities, confirming its status as a major scientific conference, and has demonstrated that the conference

produced beneficial results and outcomes for Canadian scientific advancement and Canadian scientists.

Medium:
The Institute for National Measurement Standards/CNC for CIE has competently bid to host at least one major scientific conference in Canada in the last 5 years. The Institute for National Measurement Standards/CNC for CIE has provided a complete and concise overview of the activities undertaken during the bidding process, and has demonstrated a well planned, organized, and strategic attempt to position Canada as a potential conference venue.

Low:
The Institute for National Measurement Standards/CNC for CIE has not hosted (in the last 15 years) or competently bid to host (in the last 5 years) any major scientific conference in Canada.

Provide additional comments here if necessary. Limit 1000 characters.

b) Does the Institute for National Measurement Standards/CNC for CIE encourage Canadian scientists to take active roles in international conferences, symposia, and workshops?

Identify Canadian scientists that have spoken, presented, or advised at international conferences, symposia, and workshops and describe their accomplishments highlighting opportunities taken to showcase exemplary Canadian S&T achievements, demonstrate Canadian S&T knowledge and expertise, express Canadian S&T ideas and perceptions, and set forth recognized strengths in Canadian S&T capacity

- Dr. Jennifer Veitch served on the organizing committee for the 2nd CIE Expert Symposium on Lighting and Health held in Ottawa Sept. 7-8, 2006, and presented an invited talk at the event.
- NRC-IRC staff provided all of the local arrangements for the event, which were highly praised by attendees and by the then-CIE President, Wout van Bommel.
- Among the 22 invited presentations at the 2nd CIE Expert Symposium on Lighting and Health were three by Canadians (J. Veitch, M. Dumont, and A. Levitt). There were also 2 posters by Canadians (of 29 posters in total).
- Dr. Joanne Zwinkels and Dr. Alan Robertson played leading roles in the organization of the CIE Expert Symposium on “75 Years of the CIE Standard Colorimetric Observer" held in Ottawa May 16-17, 2006. Dr. Zwinkels was the symposium session chair and Dr. Robertson was the symposium technical programme chair. Dr. Robertson presented a paper on the “Colour of the Canadian Flag” and co-authored a paper, presented by Boris Oicherman, on “Test of the transformation of primary space forward- and inverse-matrix methods”. Dr. Thomy Nilsson of the University of Prince Edward Island presented a paper on “Standards for Colour Legibility”. Dr. Robertson and Dr. Zwinkels also contributed invited chapters to the CIE book entitled “Colorimetry – Understanding the CIE System” which was published by Wiley-Interscience in July 2007. A preprint of this publication was made available to the attendees of the Symposium in Ottawa.
- Dr. Veitch presented a paper “Office Lighting Appraisal, Performance And Well-Being: A Linked Mechanisms Map” at the 2007 CIE quadrennial meeting in Beijing.
- Dr. Veitch presented the Division 3 perspective on lighting and health at a joint Division 3 / Division 6 workshop on Lighting and Health in Beijing.
- Mrs. Sharon McFadden of DRDC chaired the Beijing conference session on “100 Years of Solid State Electroluminescence, A Challenge for the CIE”.

SECTION TO BE FILLED IN BY REVIEWER

Assessment Rating for 5.b) Response: Provide rating here

High:
The Institute for National Measurement Standards/CNC for CIE has provided 5 examples of Canadian scientists that have spoken, presented, or advised at international conferences, symposia, and workshops. The Institute for National Measurement Standards/CNC for CIE has outlined their activities and has documented opportunities taken to showcase exemplary Canadian S&T achievements, demonstrate Canadian S&T knowledge and expertise, express Canadian S&T ideas and perceptions, and set forth recognized strengths in Canadian S&T capacity

Medium:
The Institute for National Measurement Standards/CNC for CIE has provided 3 examples of Canadian scientists that have spoken, presented, or advised at international conferences, symposia, and workshops. The Institute for National Measurement Standards/CNC for CIE has outlined their activities and has documented opportunities taken to showcase exemplary Canadian S&T achievements, demonstrate Canadian S&T knowledge and expertise, express Canadian S&T ideas and perceptions, and set forth recognized strengths in Canadian S&T capacity

Low:
The Institute for National Measurement Standards/CNC for CIE has not provided at least 3 examples of Canadian scientists that have spoken, presented, or advised at international conferences, symposia, and workshops.

Provide additional comments here if necessary. Limit 1000 characters.

6. Does the Institute for National Measurement Standards/CNC for CIE disseminate important scientific knowledge and information to Canadian stakeholders?

Does the Institute for National Measurement Standards/CNC for CIE consistently distribute important reports, presentations, press releases, workshop toolkits, and, conference, committee, panel, commission, workgroup, and general assembly conclusions, recommendations, and summary reports to Canadian stakeholders? Document the mechanisms of distribution used to inform stakeholders (such as regular membership meetings, website updates, newsletters, summary and annual reports, etc) and briefly describe the type of knowledge and information being disseminated.

- The CNC maintains a web site (www.cie-cnc.ca), through which anyone may obtain information about CIE activities. We are working to augment the site with more information and regular postings.
- CIE Publications may be purchased through the CIE on-line shop (www.cie.co.at). Older publications are available in hard copy from the CNC directly.
- INMS provides the secretariat for the CNC; communications regarding CIE initiatives (e.g., draft standards) are regularly emailed to CNC members. Examples of communications, in addition to draft standards, include press releases of all CIE publications and the quarterly CIE Newsletter.
- CNC annual meetings are rotated through larger cities. At these, the local lighting community is invited to events held in association with annual meetings (e.g., presentations, technical workshops).

SECTION TO BE

Assessment Rating for 6.) Response: Provide rating here

High:
The Institute for National Measurement Standards/CNC for CIE holds at least 1 membership meeting per year. The Institute for National Measurement Standards/CNC for CIE has a website to inform

members of current issues and content is update at least twice a year and/or the Institute for National Measurement Standards/CNC for CIE distributes a newsletter to members at least twice a year. The Institute for National Measurement Standards/CNC for CIE publishes an annual report updating members of key actions, publications, decisions, and events related to the CIE

Medium:
The Institute for National Measurement Standards/CNC for CIE holds at least 1 membership meeting per year. The Institute for National Measurement Standards/CNC for CIE has a website to inform members of current issues and content is updated at least once a year and/or the Institute for National Measurement Standards/CNC for CIE distributes a newsletter to members at least once a year. The Institute for National Measurement Standards/CNC for CIE publishes an annual report updating members of key actions, publications, decisions, and events related to the CIE

Low:
If Institute for National Measurement Standards/CNC for CIE fails to complete the actions expected within the Medium category, then it will receive a rating designated Low

Provide additional comments here if necessary. Limit 1000 characters.

Section 3: Membership Adherence

7. Is the level of membership to which the NRC Partner/CNC for CIE adheres within the CIE appropriate?

- The CIE provides a single level of full membership for national committees from industrialized countries. No other level is available.

Provide an overview of the membership adherence levels available within the related CIE, and include a breakdown of the resulting benefits and associated dues that correspond to each individual adherence level. Additionally, note the level to which the Institute for National Measurement Standards/CNC for CIE currently adheres. An example has been provided.

Table 1.

International Union Name	Levels of Adherence Available	Dues Associated with Adherence level	Resulting Benefits for Adherence Level
CIE	1 **(current level of adherence)**	7270 euros (2007)	1 vote at General Assemblies

Section 4: NRC Partner/CNC Feedback

8. How can the NRC Secretariat and CISET better serve the scientific community and the Institute for National Measurement Standards/CNC for CIE?

- NRC can facilitate communication between CISET members to promote interdisciplinary communication on international science matters. Further opportunities for interdisciplinary research might develop because of such improved communication.
- NRC can keep the scientific community apprised of opportunities for Canadian involvement in international S&T networks or projects.

NRC PARTNER/CNC FOR CIE COMMENTS

- Provide any comments on the APR questionnaire here. Limit 3500 characters. Not rated or required.

APPENDIX K

CNC/CIE 53rd Annual Meeting

2008-October-24

CNC/CIE Members and Advisory Members

COMMISSION INTERNATIONALE DE L'ÉCLAIRAGE
INTERNATIONAL COMMISSION ON ILLUMINATION
INTERNATIONALE BELEUCHTUNGSKOMMISSION

Canadian National Committee Comité National Canadien

CNC/CIE MEMBERS

CNC/CIE			TERM (expiry)	CIE
President	L.A. Whitehead	British Columbia	2011-12-31	
Vice President	J.A. Veitch	Ontario	2011-12-31	Division 3
Secretary	A.A. Gaertner	Ontario	2009-12-31	
Publications/Treasurer	K.F. Lin	Ontario	2008-12-31	
	R. Baribeau	Ontario	2010-12-31	Division 8
	J. Bastianpillai	Ontario	2011-12-31	Division 4
	J.D.Y. Deslauriers	Québec	2011-12-31	Division 6
	B.D. Jordan	Ontario	2011-12-31	
	J.A. Love	Alberta	2011-12-31	
	S.M. McFadden	Ontario	2011-12-31	Division 1
	I.C. Pasini	Ontario	2010-12-31	
	C. Suvagau	British Columbia	2011-12-31	
	M.K. Timmings	Ontario	2011-12-31	Division 5
	V. Venkataramanan	Ontario	2011-12-31	
	J.C. Zwinkels	Ontario	2011-12-31	Division 2
ex officio	A.R. Robertson	Ontario		NRC/INMS Member

CNC/CIE ADVISORY MEMBERS

~~W.K. Adrian~~	~~Ontario~~
Nolie Agellon	Ontario
Santo Aguanno	Ontario
Eduard Alf	Ontario
Chantal Arsenault	Ontario
Ian Ashdown	British Columbia
M.G. Bassett	Ontario
Chrisnel Blot	Québec
Mario Bucci	Ontario
J. Allyson Chrysler	Ontario
Vince Cimino	Ontario
W.B. Cowan	Ontario
Biman Das	Nova Scotia
R.V. Day	Ontario
Walter T. Delpero	Ontario
Marie Dumont	Québec
Marcin Gorzkowski	Ontario
John W. Harron	Ontario
Kurt Ising	British Columbia
S.M. Kaye	Manitoba
Donald Kline	Alberta
Barbara Kolesnik	Ontario
R. Lakowski	British Columbia
André Laperrière	Québec
Denis Lavoie	Québec
Ken Loach	Ontario
P. Manning	Nova Scotia
J. Bruce McArthur	Ontario
S.W. McKnight	Ontario
Arthur H. Mendel	Québec
Guy Newsham	Ontario
Keith Niall	Ontario
T. Nilsson	P.E.I.
Karen Pero	Québec
Pascale Reinhardt	Québec
J.B. Roberge	Québec
Alexander Rosemann	British Columbia
Mankajee Shrestha	British Columbia
Andrew D. Silbiger	Ontario
Dyoni Smith	Ontario
Ralph A. Smith	New Brunswick
Nikolay Stoev	Ontario
Eli Szamosi	Ontario
B.W. Tansley	Ontario
Thanos Tzempelikos	Québec
R.W. White	Québec
~~Roy Williams~~	~~Manitoba~~
Ernest Wotton	Ontario

2008-October-20

NRC·CNRC
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COMMISSION INTERNATIONALE DE L'ÉCLAIRAGE
INTERNATIONAL COMMISSION ON ILLUMINATION
INTERNATIONALE BELEUCHTUNGSKOMMISSION

Canadian National Committee Comité National Canadien

Canadian Division Members' Reports

CNC/CIE 53rd Annual Meeting

2008-October-24

CIE Division 1

Vision and Colour

Division 1: Vision and Colour

Report to CNC/CIE Annual Meeting

Sharon M. McFadden
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Email: sharon.mcfadden@drdc-rddc.gc.ca

The annual meeting of Division 1 was held 15 June 2008 in Stockholm, Sweden. The meeting was attended by all 4 officers, 15 country representatives, and 13 Technical Committee (TC) Chairs. Approximately 32 people attended the meeting in total. Canada was not represented at the meeting. Five TCs met in conjunction with the meeting: TC1-58 Visual Performance in the Mesopic Range, TC1-61 Categorical Colour Identification, TC1-63 Validity of the Range of CIEDE2000, TC1-68 Effect of Stimulus Size on Colour Appearance and TC1-69 Color Rendition by White Light Sources.

Highlights

One TC and two Reporterships were proposed. These are:

TC1-73: Real Colour Gamut (C)

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

Chairman: Changjun Li, CN

R1-46: Evaluation of Whiteness (C)

Terms of Reference: To review the current status of whiteness measurement and recommend future requirements.

Reporter: Joanne Zwinkels, CA

The establishment of this Reportership was requested by Joanne Zwinkels as part of her liaison with ISO/TC6/WG3. The WG had met during the week prior to this Division meeting and a need for clarification of, and perhaps change in the use the CIE Whiteness formula had become apparent.

R1-47: Hue Angles of Elementary Colours (C)

Terms of Reference: To review the current literature on elementary (unique) hues for potential imaging applications.

Reporter: Thorstein Seim, NO

The establishment of this Reportership was requested as part of the liaison with ISO/JTC1/SC28 Office Equipment.

Five Reporterships were closed – R1-23 Guidelines on planning a mesopic photometry investigation, R1-35 Irregularities in $ybar_{10}(\lambda)$, R1-38 Concept and application of equivalent luminance, R1-41 Adaptation transforms, and R1-45 Luminous efficiency functions.

Future Meetings

2009: Budapest, Hungary in conjunction with the Interim meeting of the CIE.

Canadian Participation in Division 1

Based on the latest information available to me, Canada has representatives on 15 Technical Committees and 2 Reporterships in Division 1. They are as follows:

TC1-27	Alan Robertson
TC1-37	W. Cowan
TC1-42	S. McFadden
TC1-44	J. Zwinkels
TC1-54	D. Kline
TC1-55	A. Robertson
TC1-56	A. Robertson
TC1-57	A. Robertson (Chair), J. Zwinkels
TC1-60	S. McFadden
TC1-64	S. McFadden (Chair)
TC1-66	B. Jordan, J. Zwinkels
TC1-67	B. Tansley
TC1-69	I. Ashdown
TC1-71	B. Jordan, A. Robertson
TC1-72	L. Cormier, J. Zwinkels
R1-44	S. McFadden
R1-46	J. Zwinkels

J. Zwinkels is also a liaison between Division 1 and ISO TC6/WG3. If anyone is interested in participating in one of the TCs, please contact Sharon McFadden.

Summary of Progress of Technical Committees and Reporterships

The following summaries of activities in the various Technical Committees of Division 1 are based on the minutes from the 2008 Division 1 meeting. In most cases, only brief summaries are provided. More complete summaries can be found in the Minutes themselves or in the 2008 Activity Report. Both are available in PDF format on the Division 1 website at http://www.cie.co.at/div1/. The activity report includes the terms of reference and membership for all Technical Committees and Reporterships.

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

TC1-36: Fundamental Chromaticity Diagram with Physiologically Significant Axes (F. Viénot): Completion of Part 2 is awaiting journal publication of a paper on a proposed XYZ representation of the cone fundamentals.

TC1-37: Supplementary Systems of Photometry (K. Sagawa): A draft TR was prepared at the beginning of June 2008, and will soon be distributed to members and those others concerned (TC1-58) for comments.

TC1-41: Extension of $V_m(\lambda)$ beyond 830 nm (P. Walraven): No report. It was agreed that the Associate Director (AD) Vision will write to the chairman setting a deadline for completion of this work – if it is still considered necessary.

TC1-42: Colour Appearance in Peripheral Vision (M. Ayama): The first draft of a Technical Report (TR) will be ready in July 2008. It is 80% complete at the present.

TC1-54: Age-Related Change of Visual Responses (K. Sagawa): The TR is to be merged into the CIE Guidelines for Accessibility which contains vision data and design guidelines for better visibility and lighting for older persons and persons with disabilities.

TC1-58: Visual Performance in the Mesopic Range (L. Halonen): The fourth draft of the final report has been distributed to TC members, and was discussed in the TC meeting on June 14 where comments were discussed and actions were explained. Additional references need to be added.

TC1-60: Contrast Sensitivity Function (CSF) for Detection and Discrimination (E. Martinez-Uriegas): Members of the TC are working on different parts of the report. Most sections are about 75% complete. The Chair is working on the integration of the different sections.

TC1-67: The Effects of Dynamic and Stereo Visual Images on Human Health (H. Ujike): This TC is considering three different aspects of the subject: photosensitive seizures (PSS), visually induced motion sickness (VIMS) and visual fatigue caused by stereoscopic images (VFSI). Separate reports are being prepared on each aspect.

R1-19: Specification on Individual Variation in Heterochromatic Matching (H. Yaguchi): The report has been submitted to the editor and is being reviewed for publication in the CIE collection.

R1-23: Guidelines on Planning a Mesopic Photometry Investigation (P. Trezona): No report. It was agreed to disband this Reportership.

R1-35: Irregularities in $ybar_{10}(\lambda)$ (P. Walraven): No report. It was agreed to disband this Reportership.

R1-36: Action Spectra for Glare (J. Fekete): The minutes contain a report summarizing the literature published during 2007 on the interrelationship between visibility and produced glare. It was decided to give the reporter the option of preparing a report with recommendations for future work based on the literature reviewed to date or to continue the review for a further period.

R1-37: Definition of the Visual Field for Conspicuity (N. Itoh): The reporter is continuing to prepare a report on this topic based on the existing literature. Recent work has focused on the analysis and classification of various functional fields such as Detection and Perception, Discrimination, Recognition, and Performance/Behavior.

R1-38: Concept and Application of Equivalent Luminance (Y. Nakano): This Reportership was formed when TC 1-46 was closed during the meeting of Division 1 in León, Spain in May 2005. There has, however, been no update since that time although a report had been written. It was agreed to pass the report to TC1-37 for harmonization with and possible inclusion in their technical report and to close this Reportership.

R1-40: Scene Dynamic Range: (J. Holm): A preliminary report was submitted to the 2007 Activity Report of Division 1. The Division Secretary will contact the Reporter about future activities.

R1-43: Standard Deviate Observer (B. Oicherman): A report is being prepared. The reporter showed the structure of the report which overviews data, methods, and literature concerning observer metamerism. It will contain chapters on variability of colour matching functions, observer metamerism and real-world metamers, and optical modelling of observer metamerism.

R1-44: Limits of Normal Colour Vision (S. McFadden): A report on the information available to establish the limits of normal colour vision has been prepared and submitted to the AD Vision for submission to the Division 1 members at their 2008 meeting: it is attached to these Minutes as Appendix 2. The recommendations in the report are as follows: · Continue the review for another year to more thoroughly evaluate the available data. Contact researchers, clinicians and practitioners working in the field of colour vision deficiency to determine if they have relevant unpublished data and if they would be interested in contributing to a Technical Committee on this topic.

R1-45: Luminous Efficiency Functions (Y. Nakano): No report. It was agreed to disband this Reportership.

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

TC1-27: Specification of Colour Appearance for Reflective Media and Self-Luminous Display Comparison (P. Alessi): Much of the work of this TC was completed several years ago and passed on to Division 8. However, the TR has just recently been completed and is being checked by one of the Division officers. It will then be sent to the TC members for ballot. It is hoped that it will be published before the next Division meeting.

TC1-44: Practical Daylight Sources for Colorimetry (R. Hirschler): The Chair is currently preparing a third draft. It will be significantly shorter than the second draft. A more detailed summary of the content of the second draft is available in the minutes.

TC1-55: Uniform Colour Space for Industrial Colour Difference Evaluation (M. Melgosa): Unfortunately, the chairman's request for existing experimental datasets on color differences has not received any response. Recently the chairman has contacted by email different TC members to encourage submissions of new experimental datasets. At the present time it seems that, in addition to the four datasets used in the development of CIEDE2000, they will be only able to add the dataset obtained by Quiao & Berns at RIT and perhaps only one or two new datasets.

TC1-56: Improved Colour Matching Functions (M. Brill): This TC has had extensive discussions over the past year on the issue of the failure of Grassman additivity. Recent data seem to confirm the failure of Grassman additivity even at higher luminances. A detailed summary of these discussions is available in the minutes.

TC1-57: Standards in Colorimetry (A. Robertson): S 014-5 Colorimetry – Part 5: CIE $L^*u^*v^*$ colour space is currently out for final NC ballot. A second draft of Part 3 (Tristimulus values) was sent to the TC in January 2008. Comments were generally favourable but a third draft will be needed. Most of the changes relate to abridged methods for 10- and 20-nm intervals where care must be taken to follow the recommendations of CIE Publication 15:2004 and not to pre-empt the work of TC 1-71 (Tristimulus integration). The new draft has been delayed to allow time for discussions within TC 1-71 but the way is now clear to write it very soon. This third draft will refer to the weighting-function method for 10- and 20-nm intervals but will state clearly that this method produces results that may differ from the standard method (1-nm interval, 1-nm bandwidth) and that (for the time being); it is the user's responsibility to determine suitability for their purpose. We will refer to published work (ASTM, Li, Ohno etc) but only as "informative" references, not as "normative" references. Hopefully, the work of TC 1-71 will pave the way for a second edition of the Standard in the future which will deal with "abridged" input data.
The related work of TC 2-60 (Effect of instrumental bandpass function and measurement interval on spectral quantities) is also being monitored to be sure that the Standard does not conflict with potential recommendations of that TC. The final work of the TC will be Part 6 (CIEDE2000). A first draft will be produced within a few months.

TC1-61: Categorical Colour Identification (T. Ishida): The current work plan is to write a draft of the TR and circulate it via email to the TC members. The documents (presentation, TR draft, and data) will be uploaded on to the chairman's website. An outline of the contents of the report and a list of the available colour categorization data sets can be found in the minutes.

TC1-63: Validity of the range of CIEDE2000 (K. Richter): The results of the work completed to date by this TC are available in the minutes. It met in Stockholm in conjunction with the Division 1 meeting.

TC 1-64: Terminology for vision, colour and appearance (S. McFadden): The latest version of the ILV has been distributed for BA ballot. The updated ILV will be very different in appearance from the current version. The numbering system used in the existing version will no longer exist; all the terms will be listed alphabetically. Moreover, in addition to a paper version, the ILV will appear on the CIE

website. Given the new formats and the desire to keep the ILV more current than in the past, the BA hopes to develop a new process for reviewing existing terms and adding new terms. To be prepared for this process, the members of TC1-64 are currently reviewing a list of new terms for possible inclusion in the next update to the ILV. The list includes terms proposed during the Division 1 ballot of the current vocabulary and new terms which have appeared in recent Division 1 technical reports. If anyone else is interested in reviewing these terms or would like to submit additional terms for inclusion in the ILV, please contact the Chair.

TC1-66: Indoor daylight illuminant (J. Schanda): The TR of the TC has been sent to Division 1 and the BA for ballot. Votes and comments were due by August 2008.

TC1-68: Effect of Stimulus Size on Colour Appearance (P. Bodrogi): The TC requested a change in their terms of reference, but this change was not accepted. Draft 1 of a technical report has been prepared and discussed by members. An outline of the report is available in the minutes.

TC1-69: Colour Rendering of White Light Sources (W. Davis): This TC met in Stockholm. Since the last meeting, members intending to conduct vision experiments relevant to the work of the TC completed experiment questionnaires, detailing their plans. These were submitted to the Chair and distributed to the entire TC. Fifteen experiments are planned by six different research groups. At the meeting in Stockholm the status of several experiments were reported. A summary of these reports is included in the minutes.

TC1-70: Metameric Samples for Indoor Daylight Evaluation (B. Kranicz): The task of this TC is to investigate the derivation of a set of metameric samples to enable the evaluation of indoor daylight simulators. A short report on the investigations to date by this TC is included in the minutes.

TC1-71: Tristimulus Integration (C. Li.): During the past year there has been email correspondence within the TC. There have been generally two voices. Voice 1 says that for accurately computing the CIE tristimulus values and for the best agreement among laboratories, we need a unified method. Voice 2 says that we do not need to standardise any method, but the measured bandpass error to the measured reflectance must be corrected. A summary of these alternative proposals together with a way ahead are provided in the minutes.

TC1-72: Measurement of Appearance Network: MApNet (M. Pointer): MApNet is now active. There has been substantive progress over the pass year. Eight subject areas have been decided - physical aspects of appearance, non-imaging appearance metrology, image appearance metrology, gloss, colour, translucency, texture, and total appearance. Technical Leaders have been appointed for each subject group. Joanne Zwinkels is the Leader for physical aspects of appearance. A database of relevant published work has been made available by one member. Offers have been received to host the next CIE Expert Symposium. Consideration is being given to establishing two TCs. By the end of the year, major reports are expected from the Technical Leaders and the location of the next Expert Symposium will be decided.

R1-32: Emotional aspects of colour and light (G. Derefeldt): The Reporter requested a one year extension.

R1-39: Alternative Forms of the CIEDE2000 Colour-Difference Equations (M. Pointer): This Reportership was established to investigate the validity of the work reported in the paper entitled *A Lightness, Chroma and Hue Splitting Approach to CIEDE2000 Colour Differences* by J H Nobbs which showed that the four terms of the present formulation of the CIEDE2000 colour-difference equation could be re-worked into three terms. Completion of the Reportership is problematic in that the paper to which it refers is still not published in a recognised and available journal. It was proposed and agreed that the report go forward for Division and BA ballot and then be published in the CIE Collection.

R1-41: Adaptation Transforms (B. Oicherman): The Reporter stated that he had not been able to work on this report and would not be able to do so in the foreseeable future. Therefore he recommended closing the Reportership and this was agreed.

R1-42: Extensions of CIECAM02 (C. Li): The purpose of this Reportership is to evaluate potential additions to CIECAM02. These additions are being pursued under TC 8-11. This TC ensures that D1 remains apprised of the work of TC8-11. The Reporter held an open meeting on the topic at the Color and Imaging Conference. A summary of the outcome of that meeting is provided in the minutes. In addition, there is a summary of some recent publications on CIECAM02.

Liaisons

Liaison reports are available in the minutes.

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Canadian National Committee Comité National Canadien

Canadian Division Members' Reports

CNC/CIE 53rd Annual Meeting

2008-October-24

CIE Division 2

Physical Measurement of Light and Radiation

Division 2: Physical Measurement of Light and Radiation

Report to CNC/CIE 53rd Annual Meeting
Toronto, Ontario, October 24, 2008

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The most recent CIE Division 2 General and TC meetings were held 9-11 July 2008 in Turin, Italy in conjunction with a CIE Expert Symposium on Advance in Photometry and Colorimetry. I was unable to attend this meeting, but Arnold Gaertner was given my proxy as Canadian member at the CIE D2 meeting and also attended several D2 TC meetings as member/observer. The following report is some of the meeting highlights. The detailed minutes of the meeting should be available shortly at the web-site: http://cie.co.,at/div2.

Ten Technical Committees (TCs) and one ad-hoc group met in Turin: TC2-40 Characterizing the performance of luminance and illuminance standards (Blattner); TC2-43 Uncertainty (Sauter); TC2-47 Characterization and calibration methods of UV radiometers (Sperling); TC2-48 Spectral responsivity measurement of detectors, radiometers, and photometers (Eppeldauer); TC2-49 Photometry of flashing light(Ohno); TC2-53 Multi-geometry colour measurements of effect materials (Roesler); TC2-56 CIE/ISO standard on retroreflection measurements (Miller); TC2-58 Measurement of LED radiance and luminance ((Kohmoto); TC2-59 Characterization of imaging luminance measurement devices (Blattner); TC2-62 Imaging photometer based near field goniophotomety (Steudtner) and ad-hoc on Measurement of high-power LEDs (Ohno).

The General D2 meeting had 46 participants from 19 countries, including 15 country members. There were no changes in the D2 officers..

The DD plans to develop a framework to improve and assist TC activities for faster progress and efficiency, following general directions from the CIE VP Technical.

Highlights
One TC, TC2-25, and one Reportership, R2-36 were closed..
Two new TCs: and three new Reporterships were initiated (see details below).

Editorial and publication activities over the past year:

• Draft reports were edited from TC2-32, 2-37, 2-52 and 2-17 and editorial comments were made on the revamped ILV.
• CIE 182:2007 “Calibration methods and photoluminescent standards for total radiance factor measurements” (report from TC2-25, chaired by J. Zwinkels) was published. .

Proposals for New Technical Committees and Reporterships

TC2-63 Optical measurement of high-power LEDs
Chair: Yuqin Zong (USA)
TR: Develop a CIE recommendation on methods for the operation of high-power LEDs in DC and in pulse mode, at specified junction temperatures, for optical measurements.
Note: this new TC was proposed and discussed in depth at the ad-hoc group meeting on July 10.

TC2-64 High speed testing methods for LEDs
Chair: Guenther Heidel (Germany)
TR: Prepare a technical report on high speed testing methods for electrical, thermal and optical quantities during the production of LEDs and the conversion of the values to DC operational conditions including the related time-dependent functions.
Note: this new TC was proposed as an outcome from the reportership, R2-36 and will be linked with the other new TC on high power LEDs..

R2-40 Spectral and colorimetric electronic data exchange
Reporter: Mike Pointer (UK)
TR: To monitor progress in ISO/TC 38: Textiles, who are working on a standard to specify the form of electronic data interchange between spectral and colorimetric measuring instruments.

R2-41 Retroreflection intercomparison
Reporter: Cameron Miller (USA)
TR: To investigate the interest in the international retroreflection community to participate in an intercomparison according to the requirements of the new CIE/ISO standard. The goal is to develop a list of participants.

R2-42 Photometry of curved surface sources
Reporter: Hsueh-Ling Yu (Taiwan)
TR: To report on the measurement requirements for the photometric characterization of extended sources having curved surfaces.
(The start of this reportership is pending CIE membership of the reporter).

Those interested to become a member of the new TCs, should fill out the form on the D2 website (www.cie.co.at/div2, under DOCUMENTS and FORMS near the bottom) and send it to tC chair following instructions in the form.

New Liaison functions established:

- **ISO/TC 145/SC2: N519** Safety colours and safety signs – Specification of colorimetric and photometric properties of materials (J. Zwinkels, CAN)
- **IEC/SC 34A MT PRESCO – IEC TR 62504**: Terms and definitions for LEDs and LED modules in general lighting (Y. Ohno, USA)
- **IEC TC 110** Flat Panel Displays WG5?OLED display (T. Mou, China)

Changes in TCs and Reporterships

- The Chair of TC2-32 (Measuring retroreflectance of wet horizontal road markings) has been changed to Norb Johnson (USA)
- The TR of TC2-49 has been changed to "Produce a CIE recommendation for measurement of effective intensity of flashing light".
- The TR of TC2-58 has been slightly changed to: "To prepare a CIE Technical Report recommending measurement methods for the luminance and radiance of LEDs, taking particular account of the specific requirements of relevant photobiological safety standards."

Dissolution of TCs and Reporterships

- TC2-25 Calibration methods and photoluminescent standards for total radiance factor measurements (J.Zwinkels) is closed, as CIE 182:2007 was published.
- R2-36 Measurement requirements for solid state light sources (G. Heidel) is closed, as a new TC was established.

Summary of Progress of Technical Committees and Reporterships

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

Progress in TCs: 29, 37, 40, 43, 46, 47, 48, 58, 59, 60 and 62 (Sauter, AD)

TC2-29 Linearity (Larason). No report was received from TCC. Ohno reported that there has been no activity since 2006 meeting in Brauschweig.

TC2-37 Detectors as transfer standards (Ohno). Draft 8 of document was edited by Sauter and D2 Editor and 2nd TC ballot was closed 30 April 2008. The comments received will be addressed in a new draft for D2 ballot.

TC2-40 Characterization of luminance/illuminance meters (Blattner). The TCC held two meetings with 8 members and 39 observers. and received additional info at the Symposium. Another meeting is planned later this year and it is hoped to have the document ready for TC ballot by 2009 in Budapest; the issue of f2 is the main open problem.

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TC2-43 Uncertainty (Sauter). The TC met in Turin. It was decided that this should be the last meeting and allow only 3 more weeks for any more input to document and then prepare for TC ballot. Several TCs need to refer to this document, as well as contribute

to future versions. It was noted that the CIE needs to discuss this type of "growing" document and a TC may need to deal with this issue..

TC2-46 Standard on LED intensity measurement. (Scarangello). No report was received from TCC. There has been no recent activity and if no progress soon, it will be closed. Yoshi, Sauter and Schanda will work on options to convert CIE 127 from a recommendation to a Standard..

TC2-47 UV meters (Sperling). The TC met in Turin. The TC had received an input from the NC of Japan to broaden the scope to UV below 250 nm. It was noted that they need measurements re f1' and to classify parameters to go in an Annex.

TC2-48 Spectral responsivity measurement (Eppeldauer). TC met in Turin and had 42 participants. Draft 11 of the report was discussed, which has 3 new subjects, changes to the uncertainty chapter, and the measurement setup section has been divided into two parts. Sperling and Sauter are to contribute to the BSR method and Eugene Zong is to contribute to the spectral stray light and fluorescence issues. It is planned to extend report to include further data and examples.

TC2-58 Measurement of LED radiance/luminance (Kohmoto). TC met in Turin and there were 35 attendees. Small changes have been made to the TR to providing recommendations. Draft 2 of the report was discussed and there were comments about how to measure effective radiance and whether the details which specific equipment should be removed. It is planned to circulate Draft 2 for more comments until the end of 2008..

TC2-59 Characterization of imaging luminance measurement devices (Krüger). TC met in Turin with 16 attendees. This was the 4th meeting of this TC and TCC is looking for new members. TCC presented 2 working documents on references and on a working paper with selected discussion points. A detailed Table of Contents and list of Appendices has been prepared and volunteers are asked to contribute to these various chapters until Jan. 2009. A completed 1st draft of the report is planned before the Budapest meeting.

TC2-60 Effect of instrumental bandpass function and measurement interval on spectral quantities (Wooliams). The TCC plans to hold a meeting at NEWRAD2008 and to discuss the 4th draft of TC report. The TC has had considerable discussion using the e-mail reflector and inputs from several members to the current draft.

TC2-62 Imaging-photometer-based near-field goniphotometry (Steudntner) – TC met in Turin for the 1st time n Turin and there were 10 members and 35 observers; 2 of which became new members. Two manufacturers made presentation of possible solutions and a Table of Contents for the report was prepared. The 1st draft of this report is to be completed before the Budapest meeting.

Progress in TCs: 2-23, 49, 50, and 52 (Vandermeersch, AD)

TC2-23 Photometry of street lighting luminaires (Vandermeersch). There has been little progress on this TC since Leon (3 years ago) . The TCC is requested to get info from D4 re CIE Publication 115 and to finish report ASAP. It was proposed to set up a Reportership to review new developments.

TC2-49 Flashing lights (Ohno) TC met in Turin with 49 participants and discussed Draft 4 of the TC report. The report has a new title "Measurement of effective intensity of flashing lights" and new TR: "to produce a CIE recommendation for measurement of effective intensity of flashing lights". A presentation was made by D. Couzin on an analysis of the Schmidt-Claussen's original thesis data which showed that all methods gave the same result. It is planned to receive new e-mail comments and start a new draft in one month's time and submit for TC ballot in a few months.

TC2-50 LED clusters & arrays (Schütte) No report was received from TCC. Sauter reported that there was progress in Beijing and that the TC is still active.

TC2-52 Emergency lighting (Vandermeersch). This document was sent for D2 ballot in July 2008.

Progress in TCs: 2-17, 19, 25, 28, 32, 42, 51, 53, 56, and 57 (Johnson, AD)

TC2-17 Simulated solar radiation (Zerlaut) Ohno read report from TCC. It was noted that there is insufficient UV data fixed via SMARTS2. The report is being edited into CIE format but no date was specified for next version..

TC2-19 Spectral coefficient of retroreflection (Johnson) The TCC reported that the draft report has been sent to the D2 Editor and that there will be a meeting in August to finish the draft. It is planned to have document ready for TC ballot by Budapest.

TC2-25 Fluorescence measurements (Zwinkels, *Canada*). This TC is now closed because of publication of final TC report (CIE Publication 182:2007).

TC2-28 Characterization of spectrophotometers (Goodman) Ohno read report. This TC report is under revision and may need some parts deleted. It is planned to circulate a proposal to TC members to have a final draft for TC ballot in a few months. The Uncertainty Section is particularly problematic since it does not conform to current GUM or TC 2-43 recommended practices.

TC2-32 Wet horizontal road markings (Hodson) This TC needs a new TCC. Norb Johns volunteered and this was approved. The TC report is currently with the D2 Editor.

TC2-42 Colorimetry of visual displays (Vassiel). This TC was closed in Beijing.

TC2-51 Multi-channel spectrometers (Austin) The TCC gave report. There have been 2 TC meetings since Beijing; in New Zealand in July/Aug. 2007 and in Australia in Aug.

2007. The TC has new TR from Beijing meeting. The outstanding items are to create tasks but with assigned members, to have a web-based meeting in Sept. 2008, and to find a replacement TCC and schedule a transition time or finish the report.

TC2-53 Multi-geometry measurements (Roesler) The TC met in Turin with 14 participants, including 5 members. The TC needs to address issues of new instrumentation and need for new terminology for out-of-plane viewing directions. Part 1 of the document is a description of recommended measurement geometries, with an overview of previously published metrics (e.g. DIN 6172-2), whereas Part 2 will be a detailed description of possible new metrics (e.g. XDNA is a new method). There is a need to separate the application from the formulation errors. .It is planned to finish Part 1 of the document for Budapest meeting.

TC2-56 Standard on retroreflectance (Miller) TC met in Turin with 4 members and 8 guests. Reviewed the resolutions from Beijing meeting and developed an action item list with assigned members. There is a need to resolve an issue about apertures and this input will be received until April 2009 and incorporated in new version of TC document for Budapest meeting.

TC2-57 Revision of CIE S014-2 (*Robertson*) Ohno gave report from TCC. There are problems re interpolation of D65 to be smooth. A new TC was proposed to make all systems consistent – S0, S1, S2, D65, D50 and other D illuminants. There was a question whether manufacturers would be okay with this proposal. D2 supported this proposal and Ohno will write to D1.

Progress of Reporterships

R2-23 Standards for the measurement of reflectance and transmittance (Rich). Ohno read report from Rich. There is an issue whether CIE 130 should be made into a Standard. There are 3 Standards proposed: secular diffuse reflectance (45:0), spectral regular transmittance (5:0) and spectral regular reflectance (6:6, 45:45, 60:60).

R2-32 Visual appearance measurement (Pointer). Sperling gave a verbal report based on report from TC 1-72. There are 8 subject groups and *J. Zwinkels* is a Technical Leader for one of these groups.

R2-33 Laser-based projection displays (*Niall, Canada)* No report was received.

R2-34 Photon-Counting regime (Rastello). Rasstello gave report and noted that these methods are mainly used in photobiology and optical communication and there is a growing need for these methods, including applications in fundamental metrology. It is considered that the CIE does not have enough experts in this field and that the work will be done outside the CIE. However, it was recommended to maintain a CIE Reporterships as the work will affect CIE. Rastello is willing to continue in this role.

R2-36 Solid state light sources (Heidel). This Reportership was closed as a new TC was established.

R2-38 Measurement of spectral properties of photometers and colorimeters (Pan). Verbal report was given. It is proposed to continue this Reportership for another year.

R2-39 Display measurement standard – liaison with ICDM (Vassie). Reporter sent a written report that will be attached to the meeting Minutes.

Reports of Liaisons

CCPR (Ohno) Detailed report given including the status of the key comparisons and the liaison activities between the CCPR and CIE;

CIE D8 (Kravetz) No report.

ISO/TC6 (*Zwinkels*) Detailed written report will be included as attachment to D2 minutes. A. Gaertner gave highlights in verbal report. Of note:

> There is one new work item that is being balloted: a revision of ISO 2469:2007: *Measurement of diffuse radiance factor* to include the following statement: " A filter or other means shall be provided to ensure that the ultraviolet intensity is negligible for wavelengths shorter than 300 nm". This revision is proposed to improve inter-instrument agreement due to the fact that the instruments used to measure the fluorescent radiance of fluorescent papers have different relative amounts of UVA and UVB and it has been shown that the fluorescence excited in these papers is due to a combination of UVA and UVB. Thus, for a one-point UV-A adjustment procedure, as in ISO 2469:2007, to be valid, the instrument source should produce negligible UVB intensity. This revised procedure will also give closer agreement with CIE standard illumination conditions which specify a zero value below 300 nm.

IEC TC34 Lamps and related equipment (G. Vandermeersch) No report.

ISO on reflectance and transmittance (Rich) Written report received from Rich will be attached to the meeting Minutes.

IDA (Rennilson) No report. It was discussed whether to discontinue this liaison and replace with liaison to D4.

OIML(Sauter) Sauter recommends a new liaison officer. Reported that there was not new business at this time.

IALA (Tutt) Detailed report given. Of note: LED flashing lights are being checked; this work is related to TC 2-49.

IEC TC100 Colour measurement and management in multimedia systems (Rich) Written report received from Rich will be attached to the meeting Minutes.

Dissolution of TCs and Reporterships

- TC2-42 Colorimetric measurements for visual display (K. Vassie): Closed due to inactivity. Related activity will continue under a new Reportership.
- R2-28 Evaluation of colorimeter spectral responsivity (B. Kranicz): Closed due to inactivity for several years.
- R2-37 Industrial lighting requirements for a D65 illuminant (E. Pierson): A report was submitted in 2006 with no TC proposal. Activity has been completed and Reportership closed.

Future D2 Meetings and Symposia

2009 Budapest, Hungary, June 1-3, as a part of the CIE Midterm Session, May 24 – June 3. The Conference on Light and Lighting (May 27-29) will include sessions on measurements of LEDs/SSL.

2010 Bern, Switzerland has been proposed. Other proposals for D2 meeting and for associated Expert Symposium are welcome.

2011. Sun City, South Africa (27th Quadrennial Session).

Canadian Participation in Division 2

Canada has representation on 8 Technical Committees:

TC2-28	J.C. Zwinkels, A.R. Robertson (NRC)
TC2-35	A.R. Robertson
TC2-43	A. Gaertner (NRC)
TC2-47	L.P. Boivin (NRC), B. McArthur (AES)
TC2-48	L.P. Boivin , R. McArthur
TC2-53	J.C. Zwinkels
TC2-57	A.R. Robertson (*Chairman)*, J.C. Zwinkels
TC2-60	A.R. Robertson, J.C. Zwinkels, R.Baribeau (NRC)

Two Liaisons:

ISO TC6: Paper, Pulp, Board:	J.C. Zwinkels (NRC)
ISO TC 145/SC 2 Safety colours and safety signs	J.C. Zwinkels (NRC)

One Reportership:

R2-33: K, Niall (DCIEM)

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CIE Division 3

Interior Environment and Lighting Design

COMMISSION INTERNATIONALE DE L'ECLAIRAGE
DIVISION 3 – INTERIOR LIGHTING AND LIGHTING DESIGN

2008 Activity Report to the Canadian National Committee

Jennifer A. Veitch, Ph.D. – Canadian Delegate
2008-October-23

jennifer.veitch@nrc-cnrc.gc.ca

2008 Division 3 Meeting
The meeting was held on October 7, 2008, in Ljubljana, Slovenia. I was in attendance. Minutes of the meeting will be available from me, and should shortly be posted on the Division 3 web site (http://www.cie.co.at/div3).

Current Division 3 Activities
Completed reports and publications
Since the last report there has been one technical committee report ballot, for the draft standard produced by TC 3-43, titled "Calculation and Presentation of the Standard CIE UGR Table for Indoor Lighting Luminaires". I consulted with another Canadian with expertise in the area and we voted in favour. The report was approved by both the Division and the Board of Administration. The TC Chairman has completed the editorial changes required to be consistent with current ISO terminology and the report is now proceeding to final production at the Central Bureau. When published it will be CIE DS 021.1/E:2007.

Active TCs and Reporterships
There are 10 active technical committees and 5 open reporterships in Division 3. Terms of Reference and current status of the committees are available on the Division 3 web site. At its 2008 meeting the division voted to create two new TCs. These proposed TCs are currently before the BA for approval. The new activities are shown in italics.

TC	Title	Chairman	Started	End?	Product
3-25	Coordination and development of the IDMP and its data	D. Dumortier	1991	2004	Web Server
3-34	Protocols for describing lighting	J. Veitch	1999	2005	Guide
3-36	Use of satellite images to derive daylight data	D. Dumortier	2000	2007	Standard
3-37	Guide for the application of the CIE general sky	D. Dumortier	2000	2007	Guide
3-39	Discomfort glare from daylight in buildings	W. Osterhaus	2002	2005	Guide
3-42	Workspace application guide	(L. Bedocs)	2006	2009	Guide
3-43	Determination of discomfort glare	L. Bedocs	2006	2010	Guide
3-44	Lighting for older people and people with visual impairment in buildings	G. Cook	2007	2010	Guide
3-45	Luminance-based design approach	Y. Nakamura	2007	2010	Guide
3-46	Research roadmap for healthful interior lighting applications	J. Veitch	2007	2011	Guide
	Climate-Based Daylight Modelling	J. Mardaljevic			
	CIE standard method of UF table calculation for indoor luminaires	P. Thorns			

TC 3-43 is expected to be closed in 2009 following the publication of its report.

R #	Title	Reporter	Start	End?	Product
3-13	Lighting vocabulary	Y. Koga	2002	2004	Publication
3-23	Lighting control and energy efficiency	P. Dehoff	2004	2005	Review
3-24	Assessment of overhead glare	T. McGowan	2004	2005	Review
3-26	Climate based daylight analysis	J. Mardaljevic	2005	2007	Statement
3-28	Lighting requirements for night-shift workers	M. Knoop-Velds	2007	2011	Report

Two reporterships were closed in 2008:

R #	Title	Reporter	Start	End?	Product
3-25	Lighting and health	M. Fontoynont	2006	2006	Statement
3-27	CIE Method for the calculation of utilization factor	L. Bedocs	2007	2008	Report

R 3-26 produced an extensive report in 2008. It resulted in the creation of a new TC. The report is likely to be published in a CIE compendium, following which R 3-26 will be closed.

Current Canadian Participation in D3 Technical Committees (October 2008)

TC#	Title	Canadian Members
3-34	Protocols for describing lighting	J. Veitch (Chairman); D. Smith (Corresponding Member)
3-37	Guide for the application of the CIE general sky	I. Ashdown
3-42	Workspace application guide	proposed member: K. Pero
3-46	Research roadmap for healthful interior lighting applications	J. Veitch (Chairman)

TC 3-34, which I chair, is undergoing revision prior to the TC ballot. The goal is to be ready for Division and BA balloting in spring 2009.

TC 3-46 is new, having been approved by the Board of Administration at the post-Session meeting on July 12, 2007. Its first meeting was held in Ljubljana, and resulted in guidance on the structure of the report. A draft report is to be discussed at the Budapest meeting in late May 2009.

Other D3 Activities
I am Secretary of Division 3 for the 2007-2011 term.

Issues for Division 3
As in most divisions and all volunteer organizations, task completion is a challenge. TC 3-37's original chairman resigned, and the Associate Director – Daylighting agreed to act as chair in order to shepherd the draft report to completion. However, the TC's two editors have been unable to progress with the work. Similarly, the chairman of TC 3-42 resigned this year because of other commitments. There is an Acting Chairman (L. Bedocs of the UK) to keep the activity moving between now and the mid-term meeting, but a new chairman is sought.

Division 3 also had an extensive discussion about future activities during its 2008 meeting. Although there is not yet agreement on how to proceed, future activities are likely to include a TC addressing lighting controls to reduce energy use and another addressing the integration of electric light and daylight in design.

Next Meeting
Budapest, Hungary, June 2 or 3, 2009; TC meetings June 1, 2009. (http://www.cie-hungary.hu/)

———— End ————

COMMISSION INTERNATIONALE DE L'ÉCLAIRAGE
INTERNATIONAL COMMISSION ON ILLUMINATION
INTERNATIONALE BELEUCHTUNGSKOMMISSION

Canadian National Committee Comité National Canadien

Canadian Division Members' Reports

CNC/CIE 53rd Annual Meeting

2008-October-24

CIE Division 4

Lighting and Signalling for Transport

CIE Canadian National Committee
Division 4 Lighting and Signalling for Transport
Report

Division meeting was held in Helsinki, 30 August to 3 September, 2008

Minutes are available in CIE Div. 4 website

New Division Officers:

Division Director: Ad de Visser, NL
Associate Director: Tapani Nurmi, FI
Division Secretary: Hans Huijben, NL
Division Editor: Doug Simpson, UK

The following TCs were established:

TC 4-47 Application of LED's in transport signalling and lighting.
Chair: Stephen Jenkins, USA
Terms of Reference: To review the application of LED's in transport lighting and signalling in as far as they affect the visual performance of the users.

TC 4-48 White light on road lighting.
Chair: Stephan Voelker, DE.

Terms of Reference: To define and study the effects of white light under mesopic conditions in road lighting.

Change in TC Chairs:
TC4-24: Calculation and measurement of tunnel lighting quality criteria
New TC Chair: Marcel Justin, BE
TC4-32: Surface colours of traffic signs
New TC Chair: David Burns USA

The following new reporter ships were established:
R4-31: Inventory D4 publication on possible energy efficiency improvements review. Hans Huijben, NL

R4-32: Reflection properties of road surfaces. Cyril Chain, FR

R4-33: Review of CIE 72-1987 “Guide to the properties and uses of retro reflectors at night”. Norbert Johnson, USA

R4-34: Retro-reflective and other passive devices as energy savers. Norbert Johnson USA

New CIE Publication: “Road Transport Lighting for Developing Countries” CIE 180:2007

OBITUARIES

We lost two of our valued CNC TC4 members:
Werner Adrian
Tony Ketvirtis

Submitted by

Joe Bastianpillai

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CIE Division 5

Exterior Lighting and Other Applications

CIE Division 5 Activity

1. The last CIE Division 5 meeting was held in Helsinki in Sept

2. The editor is working on editing the latest drafts for TC 5-20 Guide for Sports Lighting and TC 5-21 Urban Masterplanning

3. TC 5-22 – **Beam Patterns for Exterior Floodlighting Luminaires** Draft 2 of the report was reviewed in Helsinki along with the IESNA TM-15-07 *Luminaire Classification System for Outdoor Luminaires.* The decision was made to prepare a method to use TM-15-07 with floodlights based on the vertical aiming angle of the floodlight. A Draft 3 will be prepared for review.

4. TC 5-23 – **Guidelines for use of Semi Cylindrical Illuminance in Outdoor Application** A draft of the report was reviewed and assignments were made to prepare additional information that will be compiled into a Forth Draft

5. UNESCO has prepared a draft document *Starlight Reserve Concept* as a result of the conference they held on the Island of La Palma in April 2007. This draft is available on line at www.starlight2007.net/pdf/StarlightReserveConceptDraft.pdf

6. IESNA has contacted the CIE to establish liaison related to roadway lighting quality issues

7. It was suggested that the material in CIE 128 (Open Cast Mines) should be incorporated into the work of TC 5 -18

8. Work Programs:

a. TCs to be dissolved – none

b. New TCs – Established in Beijing

Guide for Architectural and Decorative Lighting

Terms of Reference – To review CIE Publication # 94 and produce a new guide that reflects both the technical and aesthetic values required for architectural and decorative lighting taking into account both the efficient use of energy and the effect that lighting has on the environment.

Chairman – Mujgan Serefhanoglo Sozen (She has the list of the many present that want to serve on this committee.) This committee met in Helsinki and the initial activity is to determine the changes required in CIE 94.

TC 5-27 ***Lighting Effects on Wildlife (Natural Environment)***
Terms of Reference – To prepare a technical report and make recommendations on methods to better manage the impact of artificial lighting on wildlife. This would be accomplished making recommendations on lighting levels, spectral distributions and other specific considerations for a broad range of organisms as well as habitants.
Chairman – Scott Davis and committee members T. Novak (CZ), Y Akashi (Japan) J. Pimenta (Brazil) and B. Weis (Germany).

First meeting was to have been held in Helsinki; Chairman S. Davis has just left the lighting industry to go back to school to prepare for a new career. He has been replaced by P. Strasser who reported that the committee met in Helsinki to establish a plan of action for the work of this committee.

> This committee needs members; I will blitz contacts in Canada to see if we can get some Canadian representation

Revise CIE # 67, ***Guide for the Photometric Specification and Measurement of Sports Lighting Installations***
Terms of Reference – To prepare a revision of the 1986 report to better relate to CIE # 169 and the new Sports Lighting Guide.
Chairman – T. Lemons and committee members K. Austin and J. Lecocq.

Revise CIE # 83 ***Guide for the Lighting of Sports Events for Colour Television and Film Systems***
Terms of Reference – To prepare a revision of the 1989 report to better relate to CIE # 169 and the present state of the art of HDTV.
Chairman – T. Lemons and committee members K. Austin and J. Lecocq.
TC 5-26 Guide for the Lighting of Sports Events for Colour TV and Film Systems (Revise CIE 83) will be established when Chairmen and committee members are established.
.

The need to revise CIE 150 on **Obtrusive Light** will be chaired by N. Pollard and he requested that interested committee members should contact him.

> This is another opportunity for Canadian membership activity

10. Future directions of Division – Each Division 5 Member is requested to identify how their National Committees functions and answer the following questions:

a. do they have their own lighting standards/recommendations and how are these bodies linked to the CIE?

b. or do they use regional material such as CEN documents and how are these bodies linked to the CIE?

c. or do they rely on CIE documents and how is Division 5 member linked into this system?

d. is there any subject that they would request Division 5 to address?

11. Future Meetings:

a. 2009 Mid-Term Meeting in Budapest with Board of Administration Meeting 25 May, General Assembly Meeting 26 May Conference 27 – 29 May and TC & Division meetings 1-3 June

b. 2010 It was proposed that a joint Division 4 & 5 Meeting should be held in the USA in May in conjunction with LightFair which will be held in Las Vegas, NV.

e. 2011 Quadrennial meeting in July in Sun City, South Africa.

CIE - 5 ACTIVITY REPORT

APRIL 2008

Director: Nigel Pollard **Editor: Mary Crawford** **Secretary: Tom Lemons**

DIVISIONAL MEETING
HELSINKI, FINLAND

*****

31 August – 3 September 2008

Our host is **The Finish National Committee of the CIE** from which all information can be obtained from the Divisional web site: www.cie.co.at
We will be meeting/staying in the centre of the City at the Scandic Simonkenttä Hotel.

We have 7 TC's meeting plus one pre-meeting (see following pages) and it would be helpful if you would contact the TC Chair to confirm which meetings you will be able to attend and whether you would like copies of the latest drafts to comment on.

Joint activities are as follows:

Sunday 31August	All day	-	TC 4.11 (Social get-together)
Monday 1September	part morning	-	D 4& 5 pre meeting
	Evening	-	Helsinki by Night
Wednesday 3 September	Morning	-	Divisional Meeting

- TC Meeting Schedule – Monday Tuesday 1- 2 September 2008

TC 5.18 Practical design guidelines for the lighting of exterior work areas
Chairman Kelvin Austin (UK)
MONDAY AM

TC 5.20 Sports Lighting Guide
Chairman Tom Lemons (US)
MONDAY PM

TC 5.21 Urban Masterplanning
Chairwomen Mujgan Serefhanoglu (TU)
TUESDAY AM

TC 5-22 Beam Patterns for Exterior Floodlighting Luminaires
Chairman Scott Davies/Tom Lemons (US)
MONDAY AM

TC 5.23 Guidelines for the use of different Illuminance parameters in Outdoor Applications
Chairman Patrick Rombauts (BE)
TUESDAY PM

TC 5.24 Architectural and Decorative Lighting
Chairwomen Mujgan Serefhanoglu (TU)
TUESDAY AM

TC 5-27 Lighting Effects on the Natural Environment
Chairman Scott Davies (US)
TUESDAY PM

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- From the Director

I trust you have all settled down to normal after our amazing 26th Session in China and are ready to work hard both to finish our existing TC's and put fresh efforts into our new TC's that we agreed in Beijing.

We have several new Members to welcome, one of which will need no introduction as Past President/Director **Wout van Bommel** returns as the representative of The Netherlands replacing C.D. Spiering who we thank for all his work and past support.

We also welcome **Murray Cronje** of South Africa as their new representative and again thank Dennis Culley for his long and valuable service both as a representative and past Editor. And finally we welcome **Henrik Gidlund** of Sweden as their new representative and again thank Jan-Erik Jerieke for all his work and past support.

As you will have seen from the TC Schedule above, we are running short of working Chairs and members and I would welcome some help from those of you with expertise in the respective fields to take these forward.

In addition, as you will also be aware, CIE Rules state that all Publications have to be reviewed every 5 years and that one of our most successful ones, Pub.150:2003 The Guide on the Limitations of Obtrusive Light from Outdoor lighting Installations is now at that stage. This Guide is now quoted and referred to world wide and as Chair of the old TC 5.12 that helps produce it I believe that most of it is still relevant and up to date. However, there are some small sections that may need updating and to give consideration to them I intend to hold a pre-meeting, probably in partnership, with TC. 4.21, which can then be discussed further at the Divisional meeting.

- News on TCs.

TC 5.18 Practical design guidelines for the lighting of exterior work areas
Chairman Kelvin Austin (UK) will be holding a meeting of this re-convened committee that now contains security lighting.

TC 5.20 Sports Lighting
Chairman Tom Lemons (US) Twelfth draft to be worked on at Helsinki meeting.

TC 5.21 Urban Masterplanning
Chairwomen Mujgan Serefhanoglu (TU) is working on what is intended to be the final Draft (8.1) for a short discussion and agreement on in Helsinki.

TC 5-22 Beam Patterns for Exterior Floodlighting Luminaires
Chairman Scott Davies (US) will hold the third meeting of this committee in Helsinki at which we can further modify the ideas from the IESNA's TM 15.07 document.
(Director's Note: maybe this TC needs to find a new Chair?)

TC 5.23 Guidelines for the use of different Illuminance parameters in Outdoor Applications
Chairman Patrick Rombauts (BE) will hold the third meeting of this committee in Helsinki.

TC 5.24 Guide for Architectural and Decorative Lighting

Chairwomen Mujgan Serefhanoglu (TU) will hold its first meeting in Helsinki working on a 1st draft taken from the work of TC 5.21

TC 5-25 Guide for the Photometric Specification and Measurement of Sports Lighting Installations.

Awaiting Chair and membership

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

Awaiting Chair and membership

TC 5-27 Artificial Lighting and its impact on the Natural Environment
Chairman Scott Davies (US) will hold the first meeting of this committee in Helsinki.

- **Date of future Meetings**

May	2009	Budapest, Hungary
?	2010	?
July	2011	Sun City, South Africa

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CIE Division 6

Photobiology and Photochemistry

DIVISION 6

PHOTOBIOLOGY AND PHOTOCHEMISTRY

Report to the Canadian National Committee
October 24, 2008

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Introduction.

The Division 6 Annual Meeting took place on June 22, 2008 in Burlingame, CA, USA, in conjunction with the 34th meeting of the American Society for Photobiology. The meeting gathered 17 participants from 10 countries.

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

Division Officers.

The Division Officers are:

Director:	Dr. Ann R. Webb (UK)
Associate Director, Photobiological Standards:	Dr. Kohtaro Kohmoto (JP)
Associate Director, Photobiological Measurements and Dosimetry:	Dr. Karl Schulmeister (AT)
Associate Director, Photodermatology:	Vacant
Secretary (new):	Dr. Andrew Smedley (UK)
Editor:	Dr. John O'Hagan (UK)

Division News.

New Division Secretary: Dr. Andrew Smedley, Manchester University, UK; (Solar UV spectroradiometry specialist).

Changes at the CIE Central Bureau (CB):

1. New website developed by CIE with Division websites centrally located. Division Secretary has editing rights for much more direct control over web content.

2. CB editor position is vacant; new Editor being sought.
3. A personnel rollover took place at the CIE meeting in Beijing.
4. On-going modernization and streamlining movement to speed up voting procedures through internet technology. TCs encouraged to accelerate efforts, with new guidelines on TC membership proposed from Division 2.
5. Editing still required for the International Lighting Vocabulary still requires some editing. Process slowed due to the absence of an Editor at CIE CB. Editing has gone back to the Divisions. Division 6 now has an active Editor. Ensure that documents are edited by the Division Editor before they are sent to CB.
6. Few votes are received from the National Committees. CB and Division Directors exhort National Committees to support their Division and exercise their voting rights when TC reports are circulated for approval.

Template for TC Reports is available for TC Chairs from Division Editor or Secretary for formatting and finalizing reports. Further assistance available from Division Editor for scientifically reports.

New National Committee members are being sought for Germany, New Zealand and Switzerland.

A new Division Director will be needed by 2010. Dr. Ann Webb plans to retire as the Director, having served the maximum 2 terms. She is asking if anyone had any thoughts for possible directors, as it would be worthwhile to think about the choices now.

From the editor:
TC 6-24 report on UV-A Protection and Sunscreens is completed.
Reports tend to go directly to the CB; should go to him first.
Several reports promised for December 2007 have not arrived yet.

Progress Reports and Updates.

6-03 Photo-kerato-conjunctivitis.
TCC: Bernhard Steck (GER).
New information is available to update this technical committee. Copies of original document requested from DDC by Dr. Sliney.

6-08 Guidelines for Obtaining Action Spectra.
TCC: David Sliney (USA).
TCC is expecting copies of earlier versions of reports. Former Division secretary Mr. Wengraitis has integrated several documents into the current draft. Final draft was expected in September.

6-15 A Computerized Approach to Reflection, Transmission and Absorption Characteristics of the Human Eye.
TCC: David Jack Lund (USA).
TCC contacted by Dr. Sliney and had volunteered to help. Data is available in a spreadsheet, and it is requested that Division Editor Dr. O'Hagan partially fill out the CIE TC document template and send it to TCC for finishing the report.

6-20 Phototoxity in Domestic and Industrial Environments.
TCC: Neil Gibbs (UK).
Drs. Sliney and Cesarini have moved the TC report forward. TCC has enthusiastically taken over this effort. Central Bureau has approved to use the work from a phototoxicity working group and have a report co-written.

6-21 Cataractogenesis by Low-Level Exposure to Ambient Ultraviolet Radiation.
TCC: David Sliney (USA).
Draft is completed and being circulated amongst TC members. No major revisions expected.

6-23 Develop Generalized Action Spectra for Plant Responses to Wavebands from 280 to 1100 nm.
TCC: Patrick Neale (USA).

The original idea of a generalized action spectra was proposed by Martyn Caldwell. There are variable responses for plants and biological effects. It is not believed that "generalized" action spectra could be developed across such a wide waveband. TCC indicates that he could be a contributing member of the TC, but not the TC chair. It is suggested that a "state of the art" report might be written, but a generalized action spectrum can not be developed. There is some indications that an action spectrum developed by Flint, which is defined in the UV range, could be a candidate action spectrum for this report. Division Director prefers to close the TC, given that no report has been completed in 20 years and that no "generalized" action spectrum is likely to be developed. It is suggested that this effort be transferred to 6-61, which is of greater interest to the lamp and plant industry. The motion was seconded, and carried. TC Closed.

6-24 Sunscreen and UVA.
TCC: Jean-Pierre Cesarini (FR).
TC report balloted and now in editing.

6-25 Spectral Weighting of Solar Ultraviolet Radiation.
TCC: Stephen Wengraitis (USA)
Update being prepared and will include the CIE previtamin D3 action spectrum.

6-28 Standardization of Sunscreen Testing: Method of UV-A Sunscreen Testing.
TCC: Jean-Pierre Cesarini (FR).
TC is waiting on the completion of the 6-24 report. There are cooperative efforts between CIE and ISO on this subject. There are protocols for cooperative efforts, to rapidly complete efforts, ISO being a standards body for industry, and CIE being more of a scientific body for the standards. The symbiotic relationship could accelerate the efforts by ISO. Several in vivo and in vitro methods of varying degrees of complexity exit, and more work is needed on some of these methods. ISO standards are only based on reviews of what is published in existing literature, and they are harmonizing the data from these publications. A published CIE report is being considered. A draft exists and additional text could be added to finish the report. The original intent was to collect the literature on various techniques, but that no consensus could be reached. A "state of the art" report should be written instead of a consensus. In vivo methods are fairly well accepted, but the in vitro methods need some more development. A draft was promised within six months.

6-31 Immediate Pigment Darkening.
TCC: Jean-Pierre Cesarini (FR).
TC to be closed due to the fact that this method is no longer viable. It is suggested that the current information be incorporated into the 6-28 report.

6-32 Action Spectrum for Photocarcinogenesis (non-melanoma skin cancers).
TCC: Donald Forbes (USA).
Action spectrum has been accepted as an ISO standard, and is being considered as an IEC standard as well.

6-33 Photoimmunological Effects Mediated through the Skin.
TCC: Edward C. de Fabo (USA).
TCC is waiting on the completion of some research. But research is published and actions are taken to complete the effort.

6-36 UVR Protective Materials Used in Shading.
TCC: Natasha van Tonder (South Africa).
TCC to provide a report.

6-37 Light and Retinal Disease.
TCC: David Sliney (USA).
TC met recently in London, and is seeking more epidemiological data. Report is near completion, and was supposed to be completed by the end of summer.

6-39 UV Radiation in Lighted Environments.
TCC: Kohtaro Kohmoto (Japan).

Comments have been received on the current draft. Concerns have been expressed to the effect that the TC report would soon be overtaken by other documents. Those documents should be referenced in the CIE report. TCC is asked to send the available draft so that the Division Editor team can help with this topic.

6-40 Erythema Reference Action Spectrum and Standard Erythema Dose.
TCC: Brian Diffey (USA).
Standard was published in 1999 (S007/E: 1999), no further action required.

6-41 A Proposed Global UV-Index.
TCC: Elizabeth C. Weatherhead (USA).
Standard was published in 2003 (S013/E: 2003), no further action required.

6-42 Lighting Aspects for Plant Growth in Controlled Environments.
TCC: Mojtaba Navvab (USA).
New TCC is contacting TC members and collecting more up-to-date references. Updated draft should be circulated soon.

6-43 UV Water Disinfection.
TCC: Alexander Cabaj (Austria).
Dr Richard Vincent has been pushing for word from Cabaj on this TC.

6-44 Illuminators for Treatment of Infant Hyperbilirubinemia.
TCC: Vacant ().
Prof. Riccardo Pratesi was to be approached as a new TCC but has been out of contact. There is indication that there is a hyperbilirubinemia action spectrum but that it needs revision. Such an action spectrum has been needed for several years. It is suggested that the TC be closed if Prof. Pratesi can not be contacted. It is indicated that the need still exists. Archival information is being searched for the report, and for other contact information that may exist. Dr. Giovanni Agati, a colleague of Pratesi, could be contacted to serve as chair. There is agreement that there is a real need for this effort to continue in some guise but in its present form it has been stalled for many years. Final efforts will be made to contact Pratesi / Agati, and if this fails the TC in its current form will be closed.

6-45 Optical Radiation Hazard Measurements in the Work Space.
TCC: Robert Angelo (GER).
CEN produced a report on this subject. CIE agrees that the science is solid, but that the report needs language editing. There is ongoing discussion as to whether the report would be a CIE/CEN report, and TCC is waiting for approval from CEN to edit the report into a CIE format. CIE will not accept the glossary section of the report, because it does not agree with CIE's International Lighting Vocabulary.

6-46 Standard Action Spectrum for UV Disinfection.
TCC: Petra Rettberg (GER).
Chair can no longer continue as TCC. Dr. Richard Vincent is offering to help finish this report but wishes to complete 6-59 first. Mr. Wengraitis is offering to assist in the work.

6-47 Photobiological Safety of Lamps and Lamp Systems.
TCC: Rolf Bergman (USA).
Division Editor is planning on meeting with CENELEC. Dr. Schulmeister has restructured the document to have it accepted in IEC, so that the IEC document would be less of a scientific document, and more of a product-oriented document. The TC planned to meet after CEN meeting.

6-48 Typical Minimal Erythema Doses.
TCC: Janusz Z. Beer (USA).
Chinese data has been provided to the TC. Dr. Beer is still serving as chair, although he is in poor health. It is noted Dr. Diane Godar is working in the same lab and might help with contact. It is also suggested that Ms. Sharon Miller be contacted as a new chair. Ms. Barbara Zminski is another possible chair.

6-49 Infrared Cataract.
New TCC: Tsutomu Okuno (Japan).
TCC is officially approved as the new chair, and hopes are high that this TC will move forward.

6-50 Photodegradation of Pharmaceuticals.
TCC: Steven Baertschii (USA).
Hanne Hjorth Tennesen (NOR) is suggested as a TCC replacement, and has corresponded with Division Director to expressed her interest in the role of chair. This motion is going to BA. Old draft for this TC is available.

6-51 Standardized Solar Simulator Spectral Irradiance for Sunscreen Testing.
TCC: Robert M. Sayre (USA).
Report was supposed to be provided by the middle of September if template access was possible. There is a strong interest in moving this effort forward.

6-52 Proper Measurement of Passive UV Air Disinfection Sources.
TCC: Richard Vincent (USA).
Activities are on hold until 6-59 completed. Report expected by fall 2008.

6-53 Personal Dosimetry for UV Radiation.
New TCC: Vacant ().
TCC has resigned. Dr. Elizabeth Thieden is suggested as a possible new chair and will be contacted by Division Director.

6-54 Standardised Action Spectrum for Vitamin D Synthesis in Human Skin.
TCC: Michael Holick (USA).
Activity completed and published as CIE Document 174:2006. Done and published.

6-55 Light Emitting Diodes.
TCC: Werner Horak (GER).
The produced document needs to be supported by Division D2 Physical Measurement of Light and Radiation. Measurement procedure has been developed and will presented to the 2-58 technical committee. There are concerns regarding the title and eye hazards; collection of some material on the visual effects is still needed. The measurement system should be developed; an updated report should be provided by the end of the year. 6-55 is not precluding the efforts by 2-58 since the latter described measurements in a physical sense beyond the requirements for photobiological safety; 6-55 is moving forward.

6-56 Infrared Warming Cabins.
TCC: Jan Stolwijk (USA).
TCC contacted and recommended closing the TC. TC Closed.
Note: IR warming cabins were still widely used, so a report might still have relevance.

6-57 Standardization of Terms and Action Spectra for Blue Light and Retinal Thermal Hazard Functions.
TCC: K. Kohmoto (Japan)
Report is 50% completed. One of the action spectra in the report is out of date and should be updated.

6-58 A Recommendation on Lower Limits for UV Exposure.
TCC: Wim Passchier (NL).
The TC recently met in Bath, U.K.. It is hoped that the final draft will be completed before the end of the year.

6-59 UVC Photocarcinogenesis Risks from Germicidal Lamps.
TCC: Richard Vincent (USA).
Draft sent to Drs. Sliney and Webb. Dr. De Gruijl is interested and a draft will be sent to him. Content to be discussed soon.

6-60 Spectral Weighting of UVR from Solar Surrogate Sources.
TCC: P. Donald Forbes (USA).

There are problems with manufacturer's that are unwilling to supply "typical" lamp spectra. It is uncertain that this TC can proceed. TCC is considering measuring the lamps and applying the action spectra, and further publishing in a technical journal, at which point the data will be used by the TC. TC may be placed on hold and see if the situation improves in a year's time.

Recently formed TCs (No reports available at this time).

6-61 Measurement of Radiation Using the Phytometric System for Plant Applications.
TCC: Gilberto J.C. da Costa (Brazil)
Terms of reference: To prepare a document intended to provide growers, lamp manufacturers, greenhouse and growth-chamber designers, lighting engineers, architects, and plant scientists and engineers with a concise reference for the use of the phytometric system for measuring radiation for plant photosynthesis and related processes.

6-62 Action Spectra and Dosimetric Quantities for Circadian and Related Neurobiological Effects.
TCC: Howard Cooper (France)
Terms of reference: To evaluate currently available biological research data relating to action spectra for human neurorendocrine effects, alerting effects and chronobiological effects with the aim of providing guidance to the lighting community for assessing the impact of different spectral distributions of lighting upon non-visual effects in humans. The historical studies of chronobiology will be briefly mentioned to provide a historical perspective. The eventual aim will be to provide a recommended standard action spectrum (or spectra) for melatonin suppression and for assessing the health impact of light. Dosimetric quantities related to biologically effective radiance and irradiance will also be developed.

6-63 Photobiological Strategies for Adjusting Circadian Phase to Minimize the Impact of Shift Work and Jet Lag.
TCC: Stephen Lockley (USA)
Terms of reference: To evaluate currently available biological research data relating to chronobiological effects and neurorendocrine effects, to include alerting effects with the aim of develop strategies for countering the effects of shift work and jet lag, as well as other sleep-wake disorders. The report shall provide guidance to the lighting community for assessing the impact of different light sequencing and spectral distributions of lighting for the environments where this can be used for humans. The historical studies of chronobiology will be briefly mentioned to provide a historical perspective.

New TC proposals.

Guidelines for Protection for Xeroderma Pigmentosum Patients.
TCC: Vacant ().
Idea approved at Division level, but lacking a TCC and terms of reference.

Division Director indicates that cooperative efforts on TCs across Divisions need to improve. There is no support mechanism for cooperative efforts. D6 has two nominally joint TCs:
1-67 The effect of dynamic and stereo visual images on human health, TCC: Hiroyasu Ujike (Japan),
and a proposal from **8-XX Vertical illuminance and spectral output of domestic imaging appliances**.

Optical Safety of Infrared Eye Trackers applied for Extended Durations.
TCC: David Sliney (USA).
A group called COGAIN is proposing this TC. This is for disabled persons who can use computers using infrared eye trackers – the safety of these devices has not been evaluated. Dr. Sliney has had much input and is the de facto chair, and will soon have a TC meeting. Action will be forwarded for BA approval.

Characterization of Sources Used in Photobiological Research.
TCC and terms of reference required.
Proposed by Dr. Dowdy, with concerns in particular about photodiode spectroradiometers and their suitability for measuring light sources used in photobiological research. Use of the resulting spectra by the unwary could lead to erroneous conclusions. If people follow CIE recommendations on the spectroradiometric measurement of

light sources, the problems could be eliminated. It is suggested that, as this is a measurement issue, then Division 2 may be the proper avenue for this effort. As photobiological researchers are the primary audience for this effort, then perhaps Division 6 will be a suitable avenue for the effort, if presented as a guide for non-metrologists, applying D2 recommendations. The TC could reference current Division 2 documents on the subject. There is interest in the TC, but some details need to be better formulated i.e. TCC and terms of reference are required. It is suggested that this activity maybe better presented has a reportership. Feedback to be provided to Dr. Dowdy.

Dosimetry of low-level-laser (light) therapy.
TCC and terms of reference required.
Aimed at exploring exposure doses, and internal tissue doses. Interest and impetus from American Society for Laser Medicine and Surgery meeting on LLLT. In principle, it is agreed that this is a worthwhile effort for Division 6 to pursue, but a TCC is required. A Division 1 TC is supposed to exist on this subject (No reference found). Again the CIE CB plans to address the mechanism for complementary and cooperative efforts across multiple Divisions.

Reportership.

A survey of action spectra in the scientific literature:
Alois Schmalweisser (Austria)
Division Director indicates that this document is moving along.

Canadian members of D6 Technical Committees

TC 6-49 A.P. Cullen

TC 6-55 J.D.Y. Deslauriers

TC 6-62 M. Dumont

Future Division Meeting

2009 - The Division is encouraged to hold a meeting along the CIE mid-term meeting in Budapest, Hungary possibly in May.

2011 - The next Quadrennial meeting will be held in Sun City, South Africa in July of 2011.

COMMISSION INTERNATIONALE DE L'ÉCLAIRAGE
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Canadian Division Members' Reports

CNC/CIE 53rd Annual Meeting

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CIE Division 8

Image Technology

The CIE Division 8 "Image Technology" and its Activities in 2007/2008

Report to the CNC-CIE, 24 October, 2008

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1- Highlights

The CIE Division 8 Image Technology held its division meeting at the IS&T/SID Color Imaging Conference in Albuquerque, NM., 6 Nov. 2007 . This was not an official meeting and the purpose was to inform a more general public about the activities of the different TCs, and to solicit ideas for new TCs that work on problems relevant to the color imaging community. There was a free form general discussion where the following Division 1 and 2 related works of interest were mentioned:

1. Clarify and communicate the validity of the colour matching functions. Address observer metamerism and physiological colour matching functions.
2. Vision understanding related to the contrast sensitivity function.
3. Parameterization of surface and sub surface reflection, absorption, and emission behavior as a function of illumination SPD and incident angle – with the goal of understanding how these contribute to visual appearance. Can the surface + near surface reflection and absorption behavior be described using surface element orientation, two layers of "surface" color, opacity of outer surface, texture map of surface, BRDF? How is visual appearance dependent/independent of location of light source?

It was also suggested looking at vision from a more subjective point of view to understand its role in images preserving appearance instead of just re-rendering for optimization purposes. Prof. Luo finally proposed that a gamut be recommended for real surface colours with associated spectral reflectance data, as this is important to the surface colour industries (e.g., textiles) who would like to determine the set of display primary colorants (the display gamut) needed to represent the full gamut of surface colors. The lack was pointed out of fundamental work in determining the gamut of real colors in situ as characterized by their spectral radiances. More details of TC discussions are included in Paragraph 3 below.

A draft report "Methods for Deriving Colour Differences in Images" was recently produced by TC8-02 and is currently under Division 8 internal ballot.

Division 8 will hold its next meeting during the IS&T/SID Color Imaging Conference in Portland, OR. , which will take place Nov. 10-15, 2008. The proposed date is November ?, from ? to ?. This will be an official Division meeting.

2- Organization

Terms of Reference:

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.

Domaine d'activité:

Etudier les méthodes et préparer des recommandations et des normes, relative aux aspects optiques, visuels et métrologiques de la communication, du traitement et de la reproduction des images, applicables à tous les types de dispositifs d'acquisition, de conservation et de restitution, aussi bien analogiques que numériques.

Web site: http://www.colour.org/

A moderated Divisional email list exist and is intended to reach all those who actively participate in Division 8 of the CIE: Division officers, Division members, and TC members. It can be reached by mailing to ciedivision8-L@vivid.colour.org .

2.1 Division Officers

Director of Division	Sabine Susstrunk
Secretary of Division	Nathan Moroney
Editor of Division	Ann McCarthy

2.2 Official Division Members

Canadian Member: Réjean Baribeau

2.3 Liaisons

CIE Division 8 has liaisons with the following organizations and liaison officers:

ISC/TC42: Photography (Mike Pointer)
ISO/TC130: Graphic Technology(Danny Rich)
ISO/IEC/JTAG2:Joint Technical Advisory Group (JTAG) 2 for Imagery(J. Schanda)
ICC -- International Colour Consortium (Cacant)
IEC/TC100 Multimedia Equipment and (Danny Rich)
ASTM/E12 Color and Appearance (Mike Pointer)

2.4 Publications and Technical Reports from Division 8

CIE 156-2004, Guidelines for the Evaluation of Gamut Mapping Algorithms (TC8-03)
CIE 159:2004, A Colour Appearance Model for Colour Management Systems:
CIECAM02. (TC8-01)
CIE 162:2004, Chromatic Adaptation Under Mixed Illumination Condition When
Comparing Softcopy and Hardcopy Images (TC8-04)
CIE 163-2004, The Effects of Fluorescence in the Characterization of Imaging Media (R8-05)
CIE 168:2005, Criteria for the evaluation of extended-gamut colour encodings
(TC8-05)
The work of TC8-06, Vocabulary, has become part of the revision of CIE
Publication 17, International Lighting Vocabulary.

2.5 Technical Committees

TC8-02: Colour Difference Evaluation in Images
TC8-07: Multispectral Imaging
TC8-08: Spatial Appearance Models for High dynamic range Images
TC8-09: Image Archiving
TC8-10: Office Illumination for Imaging
TC8-11: CIECAM02 Mathematics

TC8-12: Video Compression Assessment

2.6 Reporterships

R8-05 Reportership on Image Appearance (M. Fairchild)
R8-07 Reportership on an alternative chromatic adaptation transform for CIECAM02 (Sabine Susstrunk)

3- Technical Committees work in progress

TC8-02: Colour Difference Evaluation in Images

Terms of Reference:
To study, develop and standardize methods to derive colour differences for images.

Chair: Ronnier Luo
Web site: http://www.colour.org/tc8-02/

This TC's technical draft report "Methods for Deriving Colour Differences in Images" is currently under Division 8 internal balloting. The Summary/Résumé are:

SUMMARY
This technical report is concerned only with the evaluation of colour differences between two nominally similar images where the output media and the output viewing conditions are similar for both images. It is based on previously published work by CIE and other experts in this field. The report begins by reviewing the factors affecting the evaluation of these colour differences. Various methodologies are described to evaluate colour differences using both visual and instrumental methods. A series of reference colour digital images are presented. A method for statistically analyzing average colour-differences is described. All the activities of this TC are finally summarized and recommendations are made to apply either CIELAB(2:1) or CIEDE2000(2:1) for evaluating colour differences for a pair images displayed in the same medium side by side under the same illumination conditions. A worked example with optional optical filters is also given to supplement the described recommendations.

RÉSUMÉ
Ce rapport technique décrit les facteurs influant sur l'évaluation des différences de couleur entre deux images nommément semblables, entre une scène originale et une reproduction de cette scène, ou au sein d'une image. Il est fondé sur des travaux déjà publiés par la CIE et par d'autres experts dans cette discipline. On décrit différentes procédures pour évaluer les différences de couleur en recourant aussi bien à des méthodes visuelles qu'à des techniques instrumentales. Une série d'images numériques en couleur sont présentées. On décrit une méthode d'analyse statistique des différences de couleur moyennes ainsi que le calcul d'une série d'indices de reproduction des couleurs. Des exemples avec solution sont donnés pour compléter les procédures décrites.

TC8-07: Multispectral Imaging

Proposed Terms of Reference:
To study, develop, and recommend encoding techniques and data formats for the exchange of multispectral images, and to provide test procedures for the evaluation of multispectral imaging systems..

Chair: Dr. Jussi Parkinen

This TC was formed in 2002 and was to cover the following subjects:
1. Spectral test sets

1.1 data sets for simulation and testing,
1.2 definition and fabrication of an experimental spectral test chart,
1.3 test chart of pairs of metameric colors.

2. Definition of sets of color matching functions of typical human observers to be used in multispectral imaging systems for the definition of observer metamerism.
3. Encoding of multispectral image data
   3.1 linear encoding and quantization,
   3.2 nonlinear encoding and quantization,
   3.3 mixed spectral and spatial encoding.
4. Definition of data formats for the exchange of multispectral image data.
5. Recommendations for the definition of quality of a multispectral system and test procedures.

Nothing was reported from this TC at the Albuquerque meeting. Last year the report was that: As the first task, the standard for the multispectral color images was set as a goal. Two new candidate standards have been proposed: One by the Aixpert and Aachen University of Technology, German and the other by Natural Vision Project, later Tokyo Institute of Technology, Japan. Also JPEG2000 has been tested for the purpose. Furthermore, the committee has decided to focus on extended visual range of the spectrum with good spectral resolution images. Testing software (in Matlab and Java) has been produced and spectral images have been offered at the web-site http://www.multispectral.org . There is also a discussion forum and a feedback form for testing results. The idea is to collect real world information about the usability of the standards. The next step in autumn will be to activate the testing of standards in real world situations, after which the selection of a standard should be made.

TC8-08: Spatial Appearance Models for High dynamic range

Terms of Reference:
To study high-dynamic range imaging and to provide methods and examples for evaluating spatial appearance models for such images. The priorities are to provide the community with techniques for testing and improving existing algorithms, as well as providing a repository for hosting HDR images and tone-mapped versions (as well as experimental results) of said images.

Chair: Garrett Johnson

The TC had previously recognized the following priorities:

- Define the vocabulary, in particular, define “perceptible contrast ratio” and which tone curve to use for this definition.
- Methods for testing HDR scenes.
  - Preference scaling: Techniques for scaling preference without an original.
  - Accuracy scaling: Comparing tone-mapping algorithms against an "original" scene.
  - Accuracy scaling: Using and HDR display as the original...is it the same or equivalent to real scene.
  - Visibility/Perceptibility scaling: Techniques for measuring scientific usefulness of HDR rendering.
- Defining a "standard" scene for testing algorithm performance
  - Built out of common items.
  - Blueprint for construction of identical scene in a variety of locations.
  - Providing measurement (3D geometry, BRDF, spectral, luminance, colorimetric, and appearance scaling data).
  - Providing HDR images of standard scene.
- Providing a repository for unprocessed HDR scenes.
- Providing experimental tone mapped images and results for future comparisons.
- Providing guidelines for testing new algorithms against existing results.

It was recently noted that qualifying the display that will be used to evaluate the images is critical to this work. If the display itself is limited then HDR judgment will be impaired.

TC8-09: Image Archiving

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

Chair: Robert Buckley

The TC chair had been trying to get the right people together to work on this – users as well as academic developers. This TC was still calling for participation at the Albuquerque meeting.

TC8-10: Office lighting for imaging

Terms of Reference:
To report on the spectral power distribution and illuminations levels used to view images in office lighting conditions. The report is to be based on empirical research.

Chair: Todd Newman
The TC has so far

- developed guidelines for the experiment,
- developed a questionnaire to use with each measurement set,
- conducted a pilot study to test the methodology
- revised methodology based on pilot study
- held workshop at CIE Session to start the worldwide study.

The TC is now to conduct the worldwide study – measure lighting in many offices - and analyze the results.

It has been asking for volunteers to do spectral measurements in various office locations around the world.

TC8-11: CIECAM02 Mathematics

Terms of Reference:
To improve CIECAM02 model to avoid the mathematical inconsistencies; to enable CIECAM02 to work in colour management applications.

Chair: Changjun Li (GB).

The following points were brought during the Albuquerque meeting:

1. The colours that are causing the issue are near the spectral locus. Some consider these colours to have little practical importance. The correction needed is to clarify the mathematics.
2. Perhaps these colours are important for next generation displays.
3. Part of the discussion in this TC will be to define the applicability of the CIECAM02 model (e.g., PCS, colour difference, spectral colours).
4. The McCann data set was discarded in making the current CIECAM02. It does not fit well to the overall model. Perhaps that data set should be an indicator of the correction that is needed.
5. There is debate regarding whether narrow band imaging is intended to be included in CIECAM02. This TC would appreciate contributions of data sets of narrow band colours.
6. What is needed is canonical closed form method to handle all PCS CIELAB and CIEXYZ colours in colour management systems.

7. Will the CIECAM02 correction be a mathematical modification within the current structure, or will behavior need to be changed to address narrow band colour.
8. Perhaps the approach should be for a short term fix (tweak the mathematics) but also to look at future needs for spectral imaging.
9. Tweaking the mathematics (CAT) will not address the issues of dealing with the full range of PCS colours.

TC8-12: HVS-based quality assessment for video imaging Video Compression Assessment

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

Chair: Christine Fernadez-Maloigne (FR).

The addressed domains of this TC are small devices like mobile phones, www multimedia content, HD television, digital cinema.

It is proposed to study the role of human perception in the task of quality assessment, to define assessment protocols adapted to different media and different viewing conditions, and to provide quality assessment databases that allow to study the correlation of developed metrics.

Liaison has been established with SC29/WG1. New liaison was recommended with IEC TC100 TA11. The TC may also need liaisons with I3A CPIQ and MIPC, if cell phones / mobile devices are included.

4- Reporterships

R8-05 Reportership on Image Appearance.
Prof.. M. Fairchild

The terms of reference would be:
To investigate and report on research extending colour appearance models to include properties of spatial vision for static images and scenes with particular focus on
1 Spatial filtering of image difference metrics
2 Spatial adaptation for image rendering
3 Potential interaction between 1 and 2

Dr. Fairchild wishes to keep this reportership open, but there was no report this year. The last report was that there continues to be incremental research in this area both in the open scientific literature and through activities of various CIE technical committees. It remains safe to say that there is no fully-defined image appearance model that has been published to date and that seems to be a logical prerequisite to forming a TC to explore possible CIE recommendations in the area. The iCAM framework that was one motivating factor for the formation of this reportership remains a topic of active research by its original authors and others. It shows promise, but still remains very immature relative to a formal CIE recommendation like CIECAM02. This process of gradual evolution and refinement will likely carry on for many years. Regarding items 1 and 2 in the terms of reference, CIE activities in TCs 1-60, Contrast Sensitivity Function for Detection and Discrimination, and 8-02, Colour Difference Evaluation in Images, 8-08, Testing of Spatial Colour Appearance Models, are providing some advancements in this area. These committees seem to be adequate for at this time. Formation of a new TC specifically on image appearance should wait for further research and the availability of comparable visual data and model structures from multiple research groups.

R 8-07 Color adaptation transforms in CIECAM02
Sabine Susstrunk

Terms of reference:
Investigate and report on alternate chromatic adaptation transforms for CIECAM02 that do not create computational problems in boundary conditions.

Since the publication, two years ago, of an alternate chromatic adaptation transform that solves this problem but leaves other issues unsolved, a new technical committee (TC8-11) has been formed to investigate CIECAM02 mathematics.

5- Canadian Participation

Byron Jordan	TC8-10
J. A. Veitch	TC8-10