



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

Canadian National Committee Comité National Canadien



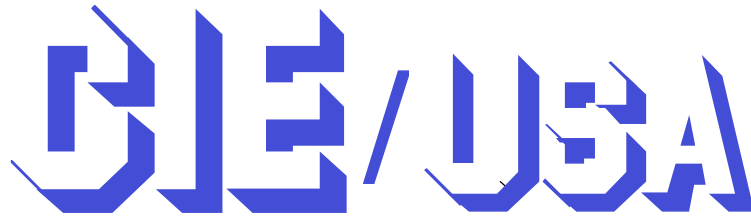
CNC/CIE Annual Report 2005

CNC/CIE and CIE/USA

Technical Conference and Joint Meeting

2005–October–27 to 29

- Program
- Minutes of CNC/CIE 50th Annual Meeting
- CNC/CIE Division Members' Reports



COMMISSION INTERNATIONALE DE L'ECLAIRAGE
INTERNATIONAL COMMISSION ON ILLUMINATION
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CIE/USA 2005 Annual Meeting and Technical Conference
Joint with Canadian NC of the CIE

OCTOBER 27 – 29, 2005

Cleveland, Ohio

Invitation

I take this opportunity to invite every CIE/USA member and interested guests to attend our annual meeting in Cleveland this coming October. The Cleveland area normally has wonderful weather that time of year. The foliage will be at the peak of its color and Lake Erie provides a wonderful backdrop. The Holiday Inn is in the suburbs but does provide vans to take people to various events, such as shopping or museums. This may be very useful information for those spouses who accompany our members.

The Friday technical paper session and the Saturday annual meeting are joint with the Canadian National Committee of the CIE. We welcome our Canadian colleagues. Our technical paper sessions have been very informative so you would likely learn a thing or two about light and lighting. Carl Anderson, CIE/USA Vice President, and Jim Love, Canadian National Committee President, have worked hard to put together the session shown below. I think the breadth of the topics covered is very good and should interest people in many different areas. The abstracts of the papers are found at the end of this information section.

We have two exciting tours planned. On Thursday evening we are invited to a tour followed by cocktails at a new facility for the Canadian Standards Association (CSA) in the Cleveland area. The hotel will provide van transportation free of charge to anyone interested in going. On Friday evening GE Lighting will host a cocktail and dinner reception, including a tour of the newly renovated Lighting Institute. I thank both GE and CSA for their generosity. Their sponsorship helps offset the cost of the annual meeting.

So why not find the registration form, fill it out and send it to our treasurer, Jim Sultan. Some meals, coffee breaks and snacks are included in the registration costs.

Finally, I remind all the CIE/USA members to send in their votes for the new board members to Secretary Ron Gibbons.

*Regards,
Rolf Bergman,
CIE/USA President*

Hotel Venue:

HOLIDAY INN, CLEVELAND EAST

28600 RIDGEHILLS DRIVE WICKLIFFE, OH 44092

(800) 752-2582 PHONE (440) 585-1911 FAX

www.holiday-inn.com/cle-east

Excellent rates with the hotel have been arranged at \$ 80 per night (+ 12.75 % tax), single or double occupancy.

Reserve now and ask for the “CIE” rate.

The cutoff for reservations at this rate is Friday, October 12, 2005.

Conference Venue:

Fill out attached registration form for conference registration

Thursday, Oct 27

9:00 – 12:00 noon	CIE/USA Technical Council
1:30 – 4:30 PM	CIE/USA Executive Committee
5:00 PM	Hotel vans depart for CSA facility
6:00 – 7:30 PM	Tour and cocktails at CSA facility in Independence
7:45 PM	Transportation back to hotel (dinner on your own)

Friday, Oct 28 **Technical Session**

7:30 – 8:30 AM	Registration
8:30 AM – 4:30 PM	Technical Session
5:00 PM	Hotel van transportation to GE’s Nela Park facility
5:30 – 9:00 PM	Cocktails, Tour of Lighting Institute and Dinner
9:00 PM	Transportation back to hotel

Saturday, Oct 29

8:30 – 10:00 AM	Annual CIE/USA and Canadian NC meeting in separate rooms
10:00 AM	Coffee Break
10:30 – 12:00 AM	Joint US and Canadian NC meeting
12:00 noon	Adjourn

**Program for the 2005 Joint Meeting
U.S. and Canadian National Committees of the CIE**

Friday, October 28, 2005

Friday, October 28

- | | |
|--------------------|-----------------------------------------------------------------------------------------------------------------|
| 7:30 – 8:30 AM | Registration Opens – Coffee, Juice, Muffins |
| 8:30 – 8:35 AM | Opening Remarks |
| 8:35 – 9:20 AM | Session #1 – Jim Love
Energy Use for Sign Lighting in North America |
| 9:20 – 10:05 AM | Session #2 – Wendy Davis
NIST Vision Science Program |
| 10:05 – 10:20 AM | Coffee, Juice Break |
| 10:20 – 11:05 AM | Session #3 – Yukio Akashi
An Energy-efficient Street Lighting Demonstration |
| 11:05 – 11:50 AM | Session #4 – Mojtaba Navvab
High Color Temperature Lighting Improves Near Acuity |
| 11:50 AM – 1:00 PM | Lunch |
| 1:00 – 1:45 PM | Session #5 – Cameron Miller
Improvements in the Measurement of LEDs and LED Arrays |
| 1:45 – 2:30 PM | Session #6 – Yukio Akashi
An Evaluation of the Safety Impacts of Roadway Lighting |
| 2:30 – 2:45 PM | Coffee, Beverage, Cookies Break |
| 3:30 – 4:15 PM | Session #7 – Sharon McFadden
Colouring the Electronic Chart |
| 3:30 – 4:15 PM | Session #8 – Terry McGowan
How Light and Health Research Affect Electric Lighting and Lighting Design |
| 4:15 PM- | Travel for dinner and tour at General Electric Nela Park facilities |

Abstracts

Energy Use for Sign Lighting in North America
James Love, DArch, PEng, MRAIC, LC, LEED AP
Associate Dean (Research and Outreach)
School of Environmental Design
University of Calgary

While ambient illumination is a key element of energy standards for buildings, little attention has been paid to sign lighting. This presentation reviews the information sources, relative magnitude of energy use, and opportunities for improved efficiency in sign lighting.

NIST Vision Science Program
Wendy Davis, PhD
Vision Scientist
Optical Technology Division
National Institute for Science and Technology (NIST)

The NIST director has recently awarded a group of researchers in the Optical Technology Division five years of funding to establish a vision science program to support photometry and colorimetry. This funding will be used to add a full-time permanent vision scientist to the staff and build a state-of-the-art experimental facility. This facility will house a high-flux spectrally tunable light source. Near-term vision science research projects will include: a series of experiments to validate and improve a proposed metric for color quality of light sources, intended to support the development of solid-state lighting for general illumination, and vision experiments to develop an empirically-derived photometric system for flashing lights.

An Energy-efficient Street Lighting Demonstration
Yukio Akashi, PhD
Senior Research Scientist
Lighting Research Center

A demonstration was conducted to gauge user acceptability of a street lighting system designed following the principles of the unified system of photometry. A fluorescent lamp and a luminaire were selected to provide approximately equal unified luminance as the existing high pressure sodium (HPS) lighting system. The fluorescent lighting system required approximately 30% less power to deliver the same unified luminance. Residents of the street were asked to provide before-and-after impressions of the fluorescent lighting on their street. The results of the evaluations suggested that under the fluorescent lighting: (1) the street appeared brighter and more comfortable; (2) the luminaires caused less glare; (3) colors of traffic signs appeared more clearly; (4) vegetation colors looked more natural; (5) pavement visibility, pedestrian visibility, and perception of safety while driving were improved; (6) pedestrian visibility, facial recognition, and perception of security while walking were improved. These results suggest that it is possible to extend the principles of the unified system of photometry beyond visual performance

High Color Temperature Lighting Improves Near Acuity

Mojtaba Navvab, PhD, FIES
Associate Professor of Architecture
College of Architecture and Urban Planning
University of Michigan

Bailey-Love letter charts were used to evaluate reading performance of school children at a 40 cm distance with common fluorescent lamp types of varying correlated color temperature (CCT) values. The acuity evaluations were conducted on school premises by a licensed optometrist under specially designed luminaires that simultaneously house both lamp types. Similar studies were carried out with young adults. Results showed improved performance under higher CCT lamps.

Improvements in the Measurement of LEDs and LED Arrays

C. Cameron Miller, PhD
Research Chemist
Optical Technology Division
National Institute for Science and Technology (NIST)

CIE Division 2 currently has four technical committees that are concerned with the measurement of LEDs and LED arrays. NIST has been very active in developing new procedures and performing research in support of these [technical committees](#). The most recent research involves the measurement of LED arrays in steady and flashing [states](#). A summary of this research and future directions will be presented.

An Evaluation of the Safety Impacts of Roadway Lighting

Yukio Akashi, PhD
Senior Research Scientist
Lighting Research Center

States have to justify roadway lighting in the face of competing issues such as budget shortfalls, public safety concerns, environmental impacts, and energy consumption. An evaluation of the safety benefits of roadway lighting across a range of conditions and roadway classifications is being undertaken in order to facilitate a readily understandable and defensible benefit/cost analysis for key decision-makers. Under National Cooperative Highway Research Program , guidelines will be developed for determination of appropriate roadway lighting for existing and planned facilities based on safety benefits and total costs.

Colouring the Electronic Chart

Sharon M. McFadden, PhD
Defence R&D Canada – Toronto

The use of digital image technology is increasing in military applications and moving into a range of civilian applications. This raises a host of issues related to vision and illumination, some of which are explored through examination of a challenge in this area. In the mid eighties, the International Hydrographic Organization (IHO) initiated the development of a standard for electronic charts. An important part of this standard was the interface. The IHO wanted to insure that as mariners moved from ship to ship the look and feel of the interface would be similar and critical information would be clearly visible under all conditions. This presentation will focus on the implementation of the colour scheme currently specified in the standard and the problems encountered. The chart had to be visible under high ambient

illumination and yet not adversely affect the dark adaptation of the mariner. Ideally it would be similar in appearance to a paper chart while providing all of the real time information that was possible with the use of a computer-based system. Establishing the framework for a suitable colour scheme was relatively straightforward. Successful implementation has proven more elusive. Problems include a creating an acceptable nighttime display, the reliable reproduction of a nighttime display, maintaining the same appearance across different systems, and maintaining the visibility of critical information

How Light and Health Research Affect Electric Lighting and Lighting Design

Terry McGowan, FIES, LC

Executive Director

Lighting Research Office

The implications of recent research on light and health for lighting design will be discussed, based on the CIE Expert Symposium on Light and Health held in Vienna in fall, 2004 and the presenter's recent work in this area.

REGISTRATION FORM
2005 CIE/USA ANNUAL CONFERENCE

To register, fill out the form and send it with your check to:

James Sultan, Treasurer

11410 NE 124th St., PMB 325
Kirkland, WA 98034-4305
Tel: (206) 284-3417
Email: jsultan@studiolux.com

You may also print, fill out, make a PDF and e-mail your registration and pay at the conference.

Name: _____

Address: _____

City: _____ **State:** _____ **ZIP Code:** _____

Telephone: _____ **Email:** _____

Accompanying Person's Name: _____

Full Conference Registration: **\$ 175** _____

(Includes room and AV costs for Business/Technical Sessions on Thursday – Saturday; Morning coffee breaks, Continental breakfast on Thursday – Saturday, Dinner/Banquet on Friday night.)

Full Accompanying Person Registration: **\$ 50** _____

Friday Registration for Technical Session only (includes all meals): **\$ 125** _____

Total Amt (Check) Enclosed: _____

MAKE CHECKS PAYABLE TO: CIE/USA

Make Hotel reservations directly with Hotel:

HOLIDAY INN, CLEVELAND EAST
28600 RIDGEHILLS DRIVE WICKLIFFE, OH 44092
(800) 752-2582 PHONE (440) 585-1911 FAX
www.holiday-inn.com/cle-east



MINUTES OF THE 50TH ANNUAL CNC/CIE MEETING

2005-October-29

The 50th annual meeting of the Canadian National Committee of the Commission Internationale de l'Éclairage (CNC/CIE) was held on Saturday, October 29, 2005 in the Holiday Inn, Cleveland-East, 28600 Ridgehills Drive, Wickliffe, Ohio, USA 44092.

The meeting was part of the CIE/USA and CNC/CIE 2005 Joint Technical Conference and Annual Meetings held at the Holiday Inn on October!27–29, 2005. The conference and annual meetings were hosted by the CIE/USA.

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

CIE	Commission Internationale de l'Éclairage
CNC/CIE	Canadian National Committee of the CIE
CIE/USA	US National Committee of the CIE
CIE-BA	CIE Board of Administration
CIE-CB	CIE Central Bureau
NC	CIE National Committee
TC	CIE Technical Committee
CIE-DD	CIE Division Director
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
DRDC	Defence Research and Development Canada
IESNA	Illuminating Engineering Society of North America
M/AM	Members/Advisory Members

The Division Members' reports were presented jointly with the CIE/USA on Saturday morning, October!29, 2005. The Canadian Division Members have also submitted written reports for the purpose of our CNC/CIE annual meeting and annual report. These reports are attached to these Minutes.

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

The 50th annual meeting of the Canadian National Committee of the Commission Internationale de l'Éclairage (CNC/CIE) was called to order at 8:40am on Saturday, October 29, 2005 by J.A.!Love, President.

Nine Members and Advisory Members were in attendance. A quorum was achieved as a result of the proxies that had been assigned prior to the meeting. The list of all attendees, regrets and proxies is given in Appendix!A. At the request of the President, attendees introduced themselves.

It was moved by S.M.!McFadden, seconded by K.F.!Lin, that the agenda as circulated by email (Appendix!B) be accepted. The President indicated that the time allocated for this meeting had been extended to 10:30. Passed.

2. Minutes of the 49th CNC/CIE Annual Meeting:

The secretary indicated that an electronic version of the Minutes of the 49th Annual Meeting had been emailed to all Members and Advisory Members on 2005-October-24. It was moved by S.M. McFadden, seconded by V. Venkataramanan, that the Minutes be accepted as distributed. Passed.

The action items from the 49th Annual Meeting (Appendix C) were considered. Items AI-1 to AI-3 had not been acted upon. Item AI-2 will need to be carried forward in preparation for the next Ciset assessment of the CNC/CIE. Item AI-4 has been completed in accordance with the directions received at the 49th annual meeting and the requirements of the CNC/CIE Policy for Reimbursement of Expenses (2003-July-30). Item AI-5 has been completed. S.M. McFadden noted that information concerning AI-6 would be in her report in Minutes Item 10 below. Items AI-7, AI-8 and AI-9 have been completed. J.A. Love indicated that he had completed item AI-10. AI-11 has been done and will be reported on in Minutes Item 8 below. J.A. Love indicated that nothing formal has been done about Items AI-12 and AI-13. AI-14 has been done.

3. President's Report:

J.A. Love presented a verbal report during which he reviewed the CIE midterm meetings in León, Spain (May 2005), the Ciset meeting at NRC Ottawa in May 2005, and the preparations for the Technical Sessions held yesterday as part of this joint CIE/USA and CNC/CIE 2005 meeting. He indicated that he would prepare a written report. This has been received and is attached as Appendix D.

4. Vice-President's Report:

J.C. Zwinkels was unable to attend the meeting, but she had prepared a written report (Appendix E) that was presented by A.A. Gaertner. She had attended the CIE Midterm meetings in León, Spain (May 2005) and her report consisted of a summary of many of the issues that had arisen during the CIE General Assembly meeting and the following workshop on "Funding the National Committees of the CIE".

5. Secretary's Report:

A.A. Gaertner presented his report, which is attached as Appendix F. He briefly summarised each item in the report. He noted that the new CNC/CIE Code of Procedure (2005-September-21) would be attached to his report in the written Minutes of this meeting.

6. Financial and Publications Report:

K.F. Lin presented his report (Appendix G), noting that there are two parts to the report: the CIE Publication Stock List, and the CIE/CNC Publication – Canada Financial Report. With respect to page 5 of the Financial Report, he pointed out that all publication purchases in Canada this year had been done directly through the CIE Central Bureau. J.A. Love raised the issue concerning the publications credit to be received by the CNC/CIE from the CIE CB for all publications sold to Canada during the year. The Secretary and the Treasurer were directed to obtain this as a cash refund from the CIE CB.

With the new web-based system of ordering CIE Publications now in place, the issue of dealing with our large stock of CIE Publications was raised. S.M. McFadden reported on her

communications with the CIE CB in December 2003, during which the CIE CB had indicated that they would be willing to discuss the matter further after the CNC/CIE had made attempts to sell this stock during the next few years. S.M. McFadden and J.A. Love were tasked with looking into dealing with our present stock of publications. A.A. Gaertner was asked to determine whether the NRC library was interested in obtaining any of these publications.

B. Jordan asked why the CNC/CIE bank account paid monthly bank charges. K.F. Lin replied that this was a regulation for bank accounts held by organisations such as the CNC/CIE.

It was moved by S.M. McFadden, seconded by C. Suvagau, that the above reports (items 3, 4, 5 and 6 above) be accepted. Passed.

7. Requests for Financial Support:

A.A. Gaertner introduced a CNC/CIE Request for Funding (Appendix H) from J.A. Veitch for the funding of lunch and coffee breaks for the CIE Division 3 and Division 6 meetings to be held in Ottawa on 2006-September-09. The amount requested is \$1000.00. After some discussion, it was moved by L.A. Whitehead, seconded by B. Jordan, that the Request for Funding be approved.

S.M. McFadden indicated that she might need to request some funding for the CIE Division 1 meetings to be held in Ottawa in 2006-May.

8. CNC/CIE Website report:

J.A. Veitch was unable to attend the meeting, but she had prepared a written report (Appendix I) that was presented by A.A. Gaertner. It was suggested that perhaps the CIE Publications stock held by the CNC/CIE could be listed on the website.

It was agreed that we accept the offer from J.A. Veitch to act as a liaison with our website contractor for the maintenance of the site.

9. Canadian Pricing for CIE Publications:

The President explained several aspects of setting prices for CIE Publications within Canada. The primary issue is whether the CNC/CIE should provide a membership discount privilege on CIE publications. Since the CNC/CIE does not have a membership fee, the question arises as to who should receive these discounts. Should these privileges be restricted to those members who make a significant contribution to the CNC/CIE? At present no discounts are available. After discussion, it was decided to continue the pricing as it is at present.

10. CIE May 2006 Expert Symposium and Division 1 meetings in Canada:

S.M. McFadden presented a verbal report. She noted that J.C. Zwinkels, A.R. Robertson and herself have been working on the organization of the meetings. A.R. Robertson has set up a technical program committee for organizing the technical sessions and a Call for Papers has gone out with a deadline for submission of 2006-January-15. The Symposium will include some historical presentations, but it is also expected that the presentations and discussions will provide guidance to the CIE for future directions in colorimetry. The committee will require assistance in the local organization of the meetings. She asked whether there were any Canadian companies who could provide financial support for the meetings. The President thanked the three coordinators for their hard work in the organization of the symposium and meetings.

11. Report on CIE Board of Administration meetings:

S.M. McFadden presented her report, which is attached as Appendix J. She indicated that marketing information was available. She noted that the awarding by the CIE of a Wyszecki Distinguished Services Award in Fundamental Research was an honour for Canada.

12. CIE Midterm Session (León, Spain 2005 May) report:

It was noted that this item had been covered in the reports of the President and Vice-President in items 3 and 4 above.

13. Nominations and Appointments (CNC/CIE):

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

13.1 Division Members:

There were no changes in Division Members this term.

13.2 Members and Advisory Members:

13.2.1 CNC/CIE Members:

The President noted that the terms of three of the CNC/CIE Members will expire this year at the end of December: A.A. Gaertner, I.C. Pasini and R.A. Smith. A.A. Gaertner indicated that he was willing to serve another term as Member and Secretary. The President reported that R.A. Smith has requested to step down from CNC/CIE Membership and serve as an Advisory Member. The President also reported that I.C. Pasini was willing to continue, with the proviso that since he has retired he has limited resources for travel to meetings.

It was moved by S.M. McFadden, seconded by K.F. Lin, that the CNC/CIE recommend to the DG of the NRC-INMS that I.C. Pasini be reappointed as a CNC/CIE Member for a term of one year. Passed. It was moved by S.M. McFadden, seconded by Cristian Suvagau, that the CNC/CIE recommend to the DG of the NRC-INMS that A.A. Gaertner be reappointed as a CNC/CIE Member and CNC/CIE Secretary for a four-year term. Passed.

The Secretary is to forward these nominations to the Director General of INMS for final approval and appointment.

13.2.2 CNC/CIE Advisory Members:

The Secretary presented the names of three Canadians who had expressed interest in the CNC/CIE, and are recommended by several CNC/CIE Members/Advisory Members (see the Secretary's Report, Appendix F). K. Niall recommended S. Aguanno, A.A. Gaertner recommended M. Gorzkowski, and S.M. McFadden recommended D. Kline.

It was moved by S.M. McFadden, seconded by K.F. Lin, that S. Aguanno, M. Gorzkowski, and D. Kline be appointed to CNC/CIE Advisory Membership. Passed.

14. Other Business:

14.1 Correspondence:

There was none to report.

14.2 Date and Place of next Year's Meeting:

The President suggested that we meet in Ottawa during the latter half of October. It was suggested that we consider video conferencing for those unable to travel to the meeting. The question was also raised as to whether we should host the IESNA-National Capital Section as we did for the Toronto Section last year.

14.3 Other Business:

- 14.3.1 J.A. Love indicated that he might do a presentation for the IESNA section in British Columbia. He noted that he might request money from the CNC/CIE to pay some of the expenses for that trip. During the discussion that followed, it was suggested that in order to reduce expenses he might coordinate this with visits to L.A. Whitehead and C. Suvagau.
- 14.3.2 K. Niall indicated that his Reportership in CIE Division 2 should be ready this spring.
- 14.3.3 L.A. Whitehead raised the concern that there were very few young people presently being educated in the field of light and lighting. He pointed out that Canada has a good reputation worldwide, but that we must be concerned about renewal in this field, particularly from a Canadian perspective. He suggested that the CNC/CIE set up a small group to discuss these issues. After some discussion, L.A. Whitehead (chair), Byron Jordan, Jim Love, and Cristian Suvagau were asked to form a sub-committee to discuss issues concerning the growth of lighting education in Canada. It was recommended that Jennifer Veitch be asked to join the sub-committee since she has had some experience in these matters.

15. Adjournment

At approximately 10:56, it was moved by K. Niall, seconded by S.M. McFadden, that the meeting be adjourned.

A.A. Gaertner
Secretary, CNC/CIE
Institute for National Measurement Standards
National Research Council of Canada
Ottawa, Ontario K1A 0R6

Tel: (613) 993-9344
Fax: (613) 952-1394
Email: arnold.gaertner@nrc-cnrc.gc.ca

2006-March-21

CNC/CIE 50th Annual Meeting

2005-October-29

Action Items

Action Item Number (AI#)	50th Minutes Item Number	Responsible	Action
1	2	J.A.!Love	for CISET, clarify the CNC/CIE action plan
2	6	A.A.!Gaertner	request publications credit from CIE CB
3	6	S.M.!McFadden, J.A.!Love	deal with CNC/CIE stock of CIE publications
4	6	A.A.!Gaertner	inquire whether NRC library wants CIE publications
5	13.2.1	A.A.!Gaertner	forward recommendations re 3 CNC/CIE Members to NRC-INMS-DG
6	13.2.2	A.A.!Gaertner	welcome 3 new Advisory Members
7	14.3.3	L.A.!Whitehead (chair), B.!Jordan, J.A.!Love, C.!Suvagau, (J.A.!Veitch)	subcommittee on "renewal of lighting expertise in Canada"

LIST OF APPENDICES

- APPENDIX A: Attendees to the 50th CNC/CIE Annual Meeting 2005-October-29
- APPENDIX B: Agenda for the 50th CNC/CIE Annual Meeting 2005-October-29
- APPENDIX C: Action Items from the 49th CNC/CIE Annual Meeting 2004-October-29
- APPENDIX D: President's Report
- APPENDIX E: Vice-President's Report
- APPENDIX F: Secretary's Report, CNC/CIE Code of Procedure (2005-September-21)
- APPENDIX G: Financial and Publications Report
- APPENDIX H: Request for Funding
- APPENDIX I: CIE-CNC Web Development Committee Report
- APPENDIX J: Report on the Meeting of the CIE Board of Administration, 12 May 2005
- APPENDIX K: CNC/CIE Members and Advisory Members

APPENDIX A

CNC/CIE 50th Annual Meeting

2005-October-29

Attendees

Arnold Gaertner	National Research Council (INMS)
Byron Jordan	PAPRICAN
K. Frank Lin	Lighting Sciences Canada Ltd.
James Love	University of Calgary
Sharon McFadden	DRDC Toronto
Keith Niall	DRDC Toronto
Cristian Suvagau	BC Hydro
Venkat Venkataramanan	University of Toronto
Lorne Whitehead	University of British Columbia

Regrets

Werner Adrian	Professor Emeritus, University of Waterloo
Chantal Arsenault	National Research Council (IRC)
Réjean Baribeau	National Research Council (INMS)
Joe Bastianpillai	Lumentech Engineers Inc.
Allyson Chrysler	Crossey Engineering Ltd.
Yvon Deslauriers	Health Canada (RPB)
Guy Newsham	National Research Council (IRC)
Ivan Pasini	Pasini Lighting Services
Jacques Roberge	self
Alan Robertson	National Research Council (INMS)
Andrew Silbiger	Andrew Silbiger Management Inc.
Ralph Smith	Ralph Smith Engineering Inc.
Martyn Timmings	Canlyte Inc.
Jennifer Veitch	National Research Council (IRC)
Joanne Zwinkels	National Research Council (INMS)

Proxies

Yvon Deslauriers	Arnold Gaertner
Alan Robertson	Arnold Gaertner
Ralph Smith	James Love
Martyn Timmings	Arnold Gaertner
Jennifer Veitch	Lorne Whitehead
Joanne Zwinkels	Sharon McFadden

APPENDIX B

CNC/CIE 50th Annual Meeting

Agenda

DATE: 2005-October-29, Saturday

TIME: 8:30 to 10:00

LOCATION: Holiday Inn, Cleveland East
28600 Ridgehills Drive
Wickliffe, Ohio 44092

AGENDA:

Note: The Division Members' reports will be presented jointly with the CIE/USA on Saturday morning 10:30–12:00, 2005-October-29.

1. Call to Order and Approval of Agenda J.A.!Love
2. Minutes of the 49th Annual CNC/CIE meeting
- Action items
- Matters arising
3. President's report J.A.!Love
4. Vice-President's report J.C.!Zwinkels
5. Secretary's report A.A.!Gaertner
6. Financial and Publications report K.F.!Lin
7. Requests for Financial Support J.A.!Love
- CIE Division 3 and Division 6 meetings 2006-September-09, Ottawa (J.A. Veitch)
8. CNC/CIE Website report J.A.!Veitch
9. Canadian Pricing for CIE Publications J.A.!Love
10. CIE May 2006 Expert Symposium and Division 1 meetings in Canada
S.M.!McFadden/ J.C.!Zwinkels
11. Report on CIE Board of Administration meetings S.M.!McFadden
12. CIE Midterm Session (Leon, Spain 2005 May) report J.A.!Love
13. Nominations and Appointments (CNC/CIE) J.A.!Love
13.1 Division Members
13.2 Members and Advisory Members
14. Other Business J.A.!Love
14.1 Correspondence
14.2 Date and Place for next year's meeting (51st)
14.3 Any other business
15. Adjournment J.A.!Love

2005-October-26

APPENDIX C

CNC/CIE 50th Annual Meeting

Action items from CNC/CIE 49th Annual Meeting

Action Items

Action Item Number (AI#)	49th Minutes Item Number	Responsible	Action
1	2	A.A.!Gaertner	send General Interest list to M/AM for additions
2	4	J.A.!Love	for CISET, clarify the CNC/CIE action plan
3	6	J.A.!Love	obtain K.!Painter's email for E.!Wotton
4	7	J.A.!Love	submit CNC/CIE forms for luncheon reimbursement
5	9	A.A.!Gaertner	forward GA nominations to NRC-IRO for authorisation
6	10	J.C.!Zwinkels, S.M.!McFadden	coordinate CIE – ISCC meetings in Canada 2006
7	11.1	A.A.!Gaertner	inform CIE-CB, CIE-DD re new Cdn Div 3 Member
8	11.2.1	A.A.!Gaertner	forward recommendations re 3 CNC/CIE Members to NRC-INMS-DG
9	11.2.2	A.A.!Gaertner	welcome 3 new Advisory Members
10	12.2	R.A.!Smith	coordinate technical session with CIE/USA
11	12.2.1	J.A.!Veitch, R.A.!Smith, J.A.!Love, V.!Venkataramanan	consider CNC/CIE website
12	12.2.2	J.A.!Love (chair), R.A.!Smith, J.C.!Zwinkels, J.A.!Chrysler	consider CNC/CIE support of young scientist
13	12.3	J.A.!Love	look into CNC/CIE info in LD+A
14	12.3	A.J.!Silbiger, A.A.!Gaertner	send request for CSA C-653 funding



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

Canadian National Committee Comité National Canadien



APPENDIX D

CNC/CIE 50th Annual Meeting

2005-October-29

President's Report

Commission Internationale de l'Éclairage - Canadian National Committee 50th Annual Meeting – Cleveland, October 29, 2005

49th Annual Meeting Toronto This year began with the annual meeting in Toronto. Approximately 40 members of the Toronto Section of the Illuminating Engineering Society of North America attended the joint lunch. Very few had previously known of the CIE, so the joint lunch was a success in terms of increasing awareness.

CIE General Assembly Mid-Term meeting - May 14, 2005. This was held in Léon, Spain. I attended as a member of the Canadian delegation. There were a few highlights.

Sponsorships The system introduced in 1999 to increase CIE sponsorship through a system of basic, silver and gold supportive (primarily corporate) members has attracted very few organizations. To make this system more financially interesting for the national committees, the CIE Board of Administration has decided that the national committees will receive as credits a proportion of the fees received for each new supportive member (200, 400 or 800 Euros for each Supportive, Silver or Gold Supportive Member, respectively) in its territory. The new VP Marketing will also be tasked with working towards increasing the number of external stakeholders in the CIE, including industry and consultants, government and international bodies.

Budget for 2006-2007 The draft budgets were circulated to the national committee representatives. The revenues and expenses for 2005 should be in agreement with the 2003 general assembly projections, except for reduced interest. In the proposed budgets for 2006 and 2007, there is no increase in the revenues from dues from national committees or other members (in reality, the individual national committee dues may increase or decrease depending upon the number of member countries). Italy asked why dues were not being reduced in light of the fact that CIE Central Bureau has a surplus, and proposed a decrease in membership fees of 10% by 2007. The VP Finances stated that dues have, in fact, decreased by about 15% in real terms, since the rates have not been adjusted for inflation. The surplus has been targeted for increased marketing of CIE services. He also stated that the CIE Central Bureau is losing money on publications to help subsidize the national committees. Vote on 2005-2007 budget: 1 abstention (Italy), all other NCs in favour.

Publications A new CIE web shop was to be opened in May/June 2005. The URL is <http://www.techstreet.com/ciegate.tmpl>. The national committees will be credited for web-shop sales with NC membership discounts maintained. The CNC-CIE will use this publications credit for CNC expenses (web-page, young scientist awards, etc.). The web shop will be accessible from the CIE home page and this link will be offered to all NCs for use on their own web-sites. It will also be possible to order publications from other professional and standards organizations including ANSI, IEEE, IESNA, ASTM and many others; the CIE will receive 5% from sales of these other publications.

Committee on International Science, Engineering and Technology

This is a committee of the national research council of Canada. It includes representatives from the (approximately 40) international scientific organizations in which Canada participates through the support of the National Research Council of Canada. Starting around 2001, CISET instituted biennial meetings of the organizations in Ottawa, choosing a theme each year. This year the meetings were held June 13-14. The organization representatives were asked to contribute to NRC's renewal planning exercise, a review to determine whether a full strategic planning exercise should be mounted. A couple of weeks prior to the meeting, representatives (the President of the CNC in the case of the CIE) were sent a 130 page paper outlining technology futures and issues through 2015, and were asked to provide comments within about 1 week.

During the Monday Ciset meeting, a “best practices” session was held. This included formal introductions and welcomes by various NRC and government officials, as well as presentations by four CNC’s on their management approaches.

On Tuesday, the representatives participated in meetings to advise NRC regarding its planning exercise.

Joint CNC-USNC Meeting - CNC 50th Meeting The Canadian and US National Committees have established a tradition of biennial joint meetings that include a technical day. The NC’s alternate in hosting the event. It was last held in Montreal in 2003. This year, it was in Cleveland, a location last used in 1997. I worked with Carl Andersen, Vice-President of the USNC to organize the program for the technical meeting.

CNC Web site Consistent with raising the profile of the Commission Internationale de l’Éclairage and the Canadian National Committee in the lighting community, a subcommittee of the CNC led by Dr. Jennifer Veitch organized a web site for the CNC (<http://www.cie-cnc.ca/en/index.html>) which was launched in time for the 50th meeting.

Respectfully submitted

Jim Love, Professor, University of Calgary
President

Canadian National Committee - Commission Internationale de l’Éclairage



COMMISSION INTERNATIONALE DE L'ÉCLAIRAGE
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APPENDIX E

CNC/CIE 50th Annual Meeting

2005-October-29

Vice-President's Report

Vice-President' s Report to the CNC/CIE 50th Annual Meeting

In 2005, it was my pleasure to attend the CIE General Assembly Mid-Term meeting, May 24th in Leon Spain, as one of the two official Canadian delegates. I participated as the non-voting member and our President, Jim Love, was the voting member. We also greatly benefited from the participation of Sharon McFadden as an ex-officio member and Director of CIE Division 1. The following is a summary of the key discussions and decisions that were carried out at this meeting.

Finances: The CIE Budget has continued to improve with reserves up by ~31% (taking into account inflation). This positive financial result is mainly due to a considerable surplus from two seminars, administrative costs below budget, and improved timing in the payment of dues. The revenues from publications have been stable and the harmonized pricing structure for CIE publications has been working well (i.e. same price is charged by NC members and CIE Central Bureau initiated by the 2003 General Assembly).

Review of membership: The President announced the decision of the Board of Administration (BA) to suspend the NC of Yugoslavia for not paying their dues (Vote: 1 abstention, no negatives). The NC of Croatia has paid its arrears and its suspension has been lifted. The NC of Brazil successfully negotiated payment of its arrears and, on receipt of this year's dues, the BA will lift their suspension.

CIE Membership fees: In 2001, the CIE refined its system for calculating fees. The membership fee is composed of two parts: a basic fee and a subscription fee. The basic fee is the same for all NCs and the subscription fee is calculated on a linear scale from UN coefficients. The membership fees comprise ~80% of the total CIE budget. There was some discussion regarding the timing of membership payments and a proposal was made to give a discount to those NCs that pay in the first quarter. There was no vote on this proposal.

New Supportive Membership System: The system introduced in 1999 to increase CIE sponsorship through a system of basic, silver and gold supportive members has not been very successful. To make this system more financially interesting for the NCs, the BA has decided that the NCs will receive, as credits, a proportion of the fees received for each new member (200, 400 or 800 Euros for each Supportive, Silver or Gold Supportive Member, respectively). The new VP Marketing will also be tasked with working towards increasing the number of external stakeholders in the CIE which include industry and consultants, government and international bodies.

Budget for 2006-2007: The draft budgets were circulated to NCs. The revenues and expenses for 2005 should be in agreement with the 2003 GA meeting, except for reduced interest. In the proposed budgets for 2006 and 2007, there is

no increase in the revenues from dues from NCs or other members (in reality, the individual NC dues may increase or decrease depending upon the number of member countries). Italy asked why dues were not being reduced in light of the fact that CIE CB has a surplus, and proposed a decrease in membership fees of 10% by 2007. The VP Finances stated that dues have, in fact, decreased by about 15%/year, since inflation is not factored in. The surplus monies have been targeted for increased marketing of CIE services. He also stated that the CIE CB is making a loss on publications (costs about 170%) to help subsidize the NCs. Vote on 2005-2007 budget: 1 abstention (Italy), all other NCs in favour.

Publications:

A new CIE web shop is to be opened in May/June 2005. NCs will be credited for web-shop sales with NC membership discounts maintained. The CNC/CIE will use this publications credit for CNC expenses (web-page, young scientist awards, etc.). The web shop will be accessible from the CIE home page and this link will be offered to all NCs for use on their own web-sites. It will also be possible to order publications from other professional and standards organizations including ANSI, IEEE, IESNA, ASTM and many others; the CIE will receive 5% from sales of these other publications.

Administration: A new Slate of BA Officers (terms starting in 2007); F. Hengstberger, SA (President); J. Schanda, HU (Vice President Technical), M. Seidl, Germany (Vice President Standards), T. Goodman, UK (Vice President Publications), T. Newman, US (Vice President Marketing), and 4 Vice Presidents without Portfolio: S. Venkataramani, India; L.Chang Wai Ling, China; G. Shakhparunvants, Russia; M. Fantoynt, France. Note: there was a GA vote to increase the number of Vice-Presidents without Portfolio from 3 to 4. Passed with 14 For, 10 Against and 1 Abstention. Canada voted For since it had supported the nomination of the French candidate for VP without Portfolio.

Matters Arising from BA meeting: There was a proposal from S. McFadden (Canada) to review the current effectiveness and relevance of the Division structure of the CIE. NCs were invited to provide input and one day has been reserved during next year's BA meeting to discuss this issue.

CIE Statutes and By-Laws: there were no proposed changes.

Time and Place of Next Meetings;

*CIE Session 2007 in Beijing, China: The BA chose the dates: July 4 – 11, 2007
Next GA Midterm Meeting in 2009: Invitation was extended from President-Elect (F. Hengstberger) to have the meeting in Cape Town. Other NCs were requested to make invitations and a vote will be taken at the next meeting of the GA.*

Other Issues: There was a 2 hour Workshop on "Funding the National Committees of the CIE" following the General Assembly meeting. Eighteen NCs

reported on their organizations, methods of funding and privileges granted to members. These NCs were: Germany, USA, UK, Norway, Israel, Netherlands, Japan, Hungary, Finland, Sweden, South Africa, Australia, India, Switzerland, Russia, Austria, Poland and Canada. Many of the NCs have a very strong affiliation with their national lighting engineering society and combine their CIE and international lighting subscriptions. In these cases, the membership comes largely from applied lighting. Those NCs receiving government support, had a broader representation of interested groups from fundamental and applied lighting. The US made a proposal to change the paradigm for supporting the CIE. It was suggested that the individual country members would support the CIE directly at the international level without assessing dues at the NC level; an NC would be retained for voting purposes only and would be charged a nominal fee for CIE membership. The funding situations in Hungary and Sweden are more similar to Canada where the Academy of Sciences or their Lighting organization, respectively, pay the NC dues, and there is no fee for becoming an NC member. In Sweden, NC membership privileges are extended to anyone in the country, whereas in Hungary, only so-called expert members receive these privileges.

Jim and I briefly summarized the situation within the CNC/CIE, and our recent discussions on the provision of NC membership discount privileges on CIE publications and, if so, whether to restrict these privileges to those members who make a significant contribution to the CNC; currently, no such discounts are available.

Additional information on this meeting can be found at the main CIE website:
<http://www.cie.co.at>

Respectfully submitted,

Joanne Zwinkels
October 2005



COMMISSION INTERNATIONALE DE L'ÉCLAIRAGE
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APPENDIX F

CNC/CIE 50th Annual Meeting

2005-October-29

Secretary's Report

CNC/CIE Code of Procedure

(2005-September-21)



CNC/CIE SECRETARY'S REPORT TO THE 50TH ANNUAL MEETING

2005-October-29

The following acronyms are 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
NC:	National Committee
NRC:	National Research Council of Canada
CISSET:	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

This report covers the period from 2004-October-29 to 2005-October-28.

CIE MATTERS:

1. Annual Membership Fee:

The annual membership fee for the CNC/CIE as a member of the CIE for 2005 is 7,333 EUROS, which was approximately \$11,702 Cdn. The NRC-International Relations Office has continued to make these payments on our behalf.

2. CIE Memberships:

The CIE-CB informed the CNC/CIE and other NCs that the CIE NCs of Argentina, Croatia and Iceland had neglected to pay their membership fees for more than 3 years. According to CIE Statutes the CIE-CB was required to ask NCs for their approval of the expulsion of these three NCs from membership in the CIE. CNC/CIE letter ballots (one for each NC) concerning this were sent to all 66 of our Members and Advisory Members. At least 31 ballots were returned for each vote, with the majority voting in favour of expulsion for each vote. This vote was communicated to the CIE-CB. The full CIE NCs vote resulted in the expulsion of Argentina and Iceland. The NC of Croatia paid all its dues and arrears, thus aborting the expulsion procedure.

3. CIE Statutes:

The CIE-BA agreed to several small amendments to CIE Statutes items 6.4.1 and 7.2.1, and requested approval for the changes from the CIE NCs. A CNC/CIE letter ballot was mailed to all our 66 Members and Advisory Members for their approval. Thirty-two replies were received, all in favour. This result was conveyed to the CIE-CB. The full CIE NCs vote approved the proposed amendments.

4. CIE Draft Standards:

CIE DS 014-1.2/E:2004 *Colorimetry - Part 1: CIE Standard Colorimetric Observers.*

CIE DS 014-2.2/E:2004 *Colorimetry - Part 2: CIE Standard Illuminants.*

These Draft standards were approved by the CIE Board of Administration and CIE Division 2, and then submitted to all the CIE National Committees for Comments. Copies were mailed to each of the 13 CNC/CIE Members, and to two CNC/CIE Advisory Members who requested copies for evaluation. Two replies were received, and their comments were forwarded to the CIE-CB.

CIE DS 019.2/E:2005 *Photocarcinogenesis Action Spectrum (Non-Melanoma Skin Cancers).*

This CIE Draft Standard has been approved by the CIE Board of Administration and CIE Division 6, and then submitted to all the CIE National Committees for Comments. Copies were mailed to each of the 14 CNC/CIE

Members for their evaluation. Four Members replied that they had reviewed the DS and had no comments. This response was indicated to the CIE-CB.

5. Proposal for CIE Vice President of Young Affairs:

The French National Committee of the CIE approached the CNC/CIE to support their proposal of Dr. Marc Fontoyant as Vice President Young Affairs. This request was forwarded to the 13 CNC/CIE Members for their vote. There were 9 replies (Yes=7, No=1, Abstain=1), with the majority in favour. This endorsement of the French NC proposal was sent to the CIE-CB and the French NC. Since the CIE-CB received the necessary number of endorsements, Marc Fontoyant was added to the proposed Slate of Officers for the 2007-2011 Quadrennium of the CIE. This slate of Officers was voted upon at the CIE GA meeting on 2005-May-15 in León, Spain, where Marc Fontoyant was elected as CIE Vice President.

6. CIE Midterm Meeting, 2005-May-12 to 21, León, Spain

In preparation for the General Assembly meeting associated with this mid-term meeting, many reports of officers of the CIE were received and circulated to NRC-IRO who finance our CNC/CIE membership in the CIE, and to J.A. Love, J.C. Zwinkels and S.M. McFadden who were appointed by NRC-IRO as our official delegates to this GA meeting. These three delegates were the only Canadians who attended the GA meeting and associated CIE division meetings and International Lighting Congress. There will be several reports from this meeting presented during our annual meeting.

7. Mailings:

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

CIE NEWS Number 71, September 2004

CIE NEWS Number 72, December 2004

CIE NEWS Number 73, March 2005

CIE NEWS Number 74, June 2005

CIE Press Releases:

Publication CIE 15:2004 (3rd Edition) *Colorimetry*

Publication CIE 152:2003 *Proceedings of the 25th Session of the CIE, San Diego, USA, 25 June–2 July 2003 (CD-ROM)*

Publication CIE 160:2004 *A Review of Chromatic Adaptation Transforms.*

Publication CIE 161:2004 *Lighting Design Methods for Obstructed Interiors*

Publication CIE 162:2004 *Chromatic Adaptation Under Mixed Illumination Condition When Comparing Softcopy and Hardcopy Images*

Publication CIE 163:2004 *The Effects of Fluorescence in the Characterization of Imaging Media*

Publication CIE 164:2005 *Hollow Light Guide Technology and Applications*

Publication CIE 165:2005 *CIE 10 Degree Photopic Photometric Observer*

Publication CIE 166:2005 *Cognitive Colour*

Publication CIE 167:2005 *Recommended Practice for Tabulating Spectral Data for Use in Colour Computations*

Publication CIE 168:2005 *Criteria for the Evaluation of Extended-Gamut Colour Encodings*

Publication CIE x026:2004 *Proceedings of the CIE Symposium '04 on LED Light Sources: Physical Measurement and Visual and Photobiological Assessment, 7–8 June, 2004, Tokyo, Japan*

Publication CIE x027:2004 *Proceedings of the CIE Symposium '04 on Light and Health: Non-visual Effects, 30 September–2 October, 2004, Vienna, Austria*

CIE Standard S010/E:2004 *Photometry–The CIE System of Physical Photometry*

CIE Standard S012/E:2004 *Standard Method of Assessing the Spectral Quality of Daylight Simulators for Visual Appraisal and Measurement of Colour*

CIE Standard S015/E:2005 *Lighting of Outdoor Work Places*

CIE Standard S016/E:2005 *Lighting of Outdoor Work Places – Lighting Requirements for Safety and Security*

ISO/CIE joint standards:

ISO 23539:2005(E)/CIE S010/E:2004 *Photometry–The CIE System of Physical Photometry*

ISO 23603:2005(E)/CIE S012/E:2004 *Standard Method of Assessing the Spectral Quality of Daylight Simulators for Visual Appraisal and Measurement of Colour*

CIE Draft Standard S019.2/E:2005 *Photocarcinogenesis Action Spectrum (Non-Melanoma Skin Cancers)*

CNC/CIE MATTERS:

1. CNC/CIE 2005 Annual Meeting:

This meeting will be held as part of joint CIE/USA and CNC/CIE annual meetings and a technical conference hosted by the CIE/USA in Cleveland, Ohio. We extend our thanks to Rolf Bergman, CIE/USA President, and his colleagues for arranging the meeting location and logistics. We look forward to the technical conference that Carl Anderson, CIE/USA Vice President, and Jim Love, CNC/CIE President, have worked hard to put together.

2. NRC-CISET:

Our President J.A. Love attended a CISET / Canadian National Committees (CNC) / NRC Partners meeting in Ottawa 2005-June-13, 14. A synopsis of the activities of the CNC/CIE was prepared for this meeting. The mandate of CISET is to advise and assist NRC in developing and implementing policy positions with respect to scientific and technological cooperation with international non-governmental organizations. CISET also provides guidance on the formation and operation of an effective mechanism for Canadian participation in these organisations. These meetings are important in that the NRC-IRO is presently responsible for paying our dues to the CIE.

3. CNC/CIE Code of Procedure:

A new CNC/CIE Code of Procedure (version 2005-September-21) has been adopted by approval of the CNC/CIE Members and the Director General of INMS (Dr. James W. McLaren). The CNC/CIE Code of Procedure previously in force (dated 1993-November-22) was approved at the CNC/CIE 39th annual meeting on 1994-November-28. At the last two annual meetings (2003-October-24 and 2004-October-29) Alan Robertson presented revised draft versions of our Code of Procedure for comment by the CNC/CIE membership. A copy of the draft presented at the 48th annual meeting (2003-October-24) was included in the Minutes of that meeting, which were sent to all Members and Advisory Members. A copy of the draft (2004-10-26) presented at the 49th annual meeting (2004-October-29) was emailed to all CNC/CIE Members and Advisory Members for their consideration prior to that annual meeting. Alan Robertson assembled all comments received and a final draft (version 2005-June-17) was prepared. A CNC/CIE letter ballot requesting approval of the Draft of 2005-June-17 was sent to the fourteen CNC/CIE Members on 2005-June-17, with a closing date of 2005-August-26. Nine of the Members replied, all affirmatively. This indicated approval by the CNC/CIE since a quorum was met and the majority was in favour. This draft version was then submitted to the Director General of INMS for his final approval. This was received on 2005-September-21. An electronic (PDF) copy of this new version of our Code of Procedure was emailed to all Members and Advisory Members on my email list. A copy of this Code of Procedure will be attached to the hardcopy Minutes version of this report.

4. CNC/CIE website:

At the last CNC/CIE annual meeting on 2004-October-29, the CNC/CIE set up a subcommittee to investigate the possibility and options of establishing a CNC/CIE website. The sub-committee is composed of Jennifer Veitch, Ralph Smith, Jim Love, and Venkat Venkataramanan. This sub-committee looked into the various options available to the CNC/CIE, and on 2005-January-21, with a closing date of 2005-February-18, the following motion (letter ballot) was submitted to the CNC/CIE Members (13) and Advisory Members (53) for vote:

Motion: That the CNC/CIE authorize an annual expense of \$625 to cover the costs of creating, hosting, and maintaining a web site, and for supplementary programming. This amount would be paid by the Treasurer from CNC/CIE funds following receipt of an invoice from the contractor.

This motion was accompanied by a rationale for the motion. Replies were received from 7 Members and 16 Advisory Members, with 22 in favour and one opposed. This indicated approval and the sub-committee has since worked on the preparation of the website. Further details are available in a special report by the sub-committee to this meeting. The website is expected to 'go live' on 2005-October-26 at the web address of www.cie-cnc.ca.

5. Mailing Lists:

5.1 At present I maintain 3 mailing lists: Members (14), Advisory Members (54), General Interest (18). 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.

5.2 **Electronic Mail:** I have sent more 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 (14), Advisory Members (41), General Interest (7). Please keep me updated on your email address.

6. 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.

6.1. Members:

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

Dr. K. Frank Lin for a four-year term until 2008-December-31

Dr. Jennifer A. Veitch for a four-year term until 2008-December-31

Dr. Lorne A. Whitehead for a four-year term until 2008-December-31

6.2. Advisory Members:

Jacques Roberge has indicated to me that he has retired from his activities in the CIE Finance Committee and all CIE Division 5 TCs.

As a result of the actions taken at our last annual meeting, the following people have been added to our Advisory Membership, and letters were sent to them indicating their appointment:

Ms Chantal Arsenault, NRC-IRC, Ottawa, Ontario

Dr. Igor Peshko, University of Toronto Optical Technologies Centre, Toronto, Ontario

Dr. Venkat Venkataramanan, University of Toronto Optical Technologies Centre, Toronto, Ontario

The following people have been suggested for Advisory Membership and have expressed interest in the CNC/CIE:

Mr. Santo S. Aguanno, Photonics Research Ontario, Toronto, Ontario

Mr. Marcin Gorzkowski, Transport Canada, Ottawa, Ontario

Dr. Donald Kline, University of Calgary, Calgary, Alberta

The following people have been removed from our mailing lists:

Jacques Lacasse, due to retirement

James G. White, due to retirement

Michael J. Barry, lost contact

H. Elder, lost contact

Respectfully submitted,

A.A. Gaertner
Secretary, CNC/CIE
Institute for National Measurement Standards
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National Research Council of Canada
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Attachments:

1. CNC/CIE Code of Procedure (version 2005-September-21).

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 (CISSET), 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.

* *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 years 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 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.

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.

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 four years and is renewable subject to review by the CNC/CIE.

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 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, the President may appoint a substitute voting member. 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.

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 Division Member's term as a Member of the CNC/CIE is subject to the terms of Section 5.

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 G

CNC/CIE 50th Annual Meeting

2005-October-29

Financial and Publications Report

**CIE/CNC PUBLICATION - CANADA
FINANCIAL REPORT
AS OF
September 30, 2005**

Income Statement	Page 1
Balance Sheet	Page 2
Bank Account Balance as of September 30, 2005	Page 3
Publication Sale: October 1, 2004 - September 30, 2005	Page 4
Publication Purchase from Central Bureau of CIE: October 1, 2004 - September 30, 2005	Page 5

**CIE/CNC PUBLICATION - CANADA
FINANCIAL REPORT**

INCOME STATEMENT 01/October/2004 - 30/September/2005

Revenue

Publication sale [year 2004-2005]
CNC/CIE 2004 Annual Conference Income

Nil
Nil

Total Revenue

\$ -

Expense

Bank charges [Oct/2004 - Sep/2005: 12 months @\$3.95]
Central Bureau of CIE
[re: publication purchase in year 2004-2005]
CNC/CIE 2004 Annual Conference Expenses
[re: IESNA Toronto Section-Luncheon]
Cyberton
[re: Web development service & domain name registration]

\$ 47.40
Nil
\$ 983.26
\$ 310.00

Total Expense

\$ 1,340.66

Net Income (Loss)

\$ (1,340.66)

**CIE/CNC PUBLICATION - CANADA
FINANCIAL REPORT**

BALANCE SHEET 01/October/2004 - 30/September/2005

Assets

Bank/Cash

\$ 16,323.24

Accounts Receivable

Nil

Total Assets

\$ 16,323.24

Liabilities

Accounts Payable

Nil

Total Liabilities

\$ -

Equity

Balance, beginning @ 01/October/2004

\$ 17,663.90

Current Income(Loss)

\$ (1,340.66)

Total Equity

\$ 16,323.24

Liability & Equity

\$ 16,323.24

CIE/CNC PUBLICATIONS BANK ACCOUNT - CANADA						
Financial Report - Bank Account						
CIE/CNC Publications Bank Account: 01/October/2004 - 30/September/2005				(Canada)		
Date		Sales	Other Income	Payments to CB	Other Expenses	Balance
30-Sep-2004	Balance brought forward					\$17,663.90
30-Oct-2004	Bank charges (Oct/2004)				\$3.95	\$17,659.95
30-Nov-2004	Bank charges (Nov/2004)				\$3.95	\$17,656.00
31-Dec-2004	Bank charges (Dec/2004)				\$3.95	\$17,652.05
15-Jan-2005	Cyberton-Web Dev. Service & Domain Name [ck#101]				\$310.00	\$17,342.05
31-Jan-2005	Bank charges (Jan/2005)				\$3.95	\$17,338.10
28-Feb-2005	Bank charges (Feb/2005)				\$3.95	\$17,334.15
31-Mar-2005	Bank charges (Mar/2005)				\$3.95	\$17,330.20
30-Apr-2005	Bank charges (Apr/2005)				\$3.95	\$17,326.25
31-May-2005	Bank charges (May/2005)				\$3.95	\$17,322.30
30-Jun-2005	Bank charges (Jun/2005)				\$3.95	\$17,318.35
31-Jul-2005	Bank charges (July/2005)				\$3.95	\$17,314.40
10-Aug-2005	IESNA Toronto Section-Luncheon@Oct/29/04 [ck#102]				\$983.26	\$16,331.14
31-Aug-2005	Bank charges (Aug/2005)				\$3.95	\$16,327.19
30-Sep-2005	Bank charges (Sep/2005)				\$3.95	\$16,323.24
30-Sep-2005	Total	\$0.00	\$0.00	\$0.00	\$1,340.66	\$16,323.24

CIE/CNC PUBLICATION SALE - CANADA

CIE/CNC Publication Sale: 01/October/2004 - 30/September/2005					
Date/Inv. #	Description/Title of Publication	Qty	Sale	Expense	Net Amount
	No Sale		\$ -	\$ -	\$ -
30-Sep-2005	Total		\$ -	\$ -	\$ -

CIE/CNC PUBLICATION PURCHASE - CANADA

Publication purchases from Central Bureau: 01/October/2004 - 30/September/2005 (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-2004	Forward		No Purchase		\$ -	\$ -	\$ -	\$ -	\$ -
			Total to date as of 30-September-2005			\$ -	\$ -	\$ -	
			Payment to CB @ 30-September-2005						\$ -
			Balance due as of 30-September-2005					\$ -	(Euro)

CIE/CNC PUBLICATION STOCK LIST

2005-SEPTEMBER-30

CIE No.	Title	Year	Price Code	Price Cd\$	Sales								Purchase				Current Stock	CB X	
					97-98	98-99	99-00	2001	2002	2003	04/05	99-00	2001	2002	2003	04/05			
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	
15.2	Colorimetry	1986	H	98	1	3	1	3		2			1		4			2	
16	Daylight	1970	I	109														5	
17.4	International lighting vocabulary	1987	X	433				1										0	
18.2	Physical photometry	1983	E	80	1	1				1								0	
19/2.1	Visual performance - volume I	1981	K	137														4	
19/2.2	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 Itg	1973	I	109														5	X
27	Luminaire photometry(street Itg)	1973																4	X
28	Sports Itg 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 Itg (French)	1977	C	68														4	
33B	Deprec.&install.road Itg(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 colorimetry	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	Discomfot glare (interior)	1983	F	86														3	

CIE/CNC PUBLICATION STOCK LIST

2005-SEPTEMBER-30

CIE No.	Title	Year	Price Code	Price Cd\$	Sales								Purchase					Current Stock	CB X
					97-98	98-99	99-00	2001	2002	2003	04/05	99-00	2001	2002	2003	04/05			
56	Proceedings 1983/light&lighting	1983	L	166														5	
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	Road signs	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	
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 meas.	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 lgt systems	1992	C	68														2	
98	Personal dosimetry of uv radiat.	1992	C	68														1	
99	Lighting education (1983-1989)	1992	B	57														1	

CIE/CNC PUBLICATION STOCK LIST

2005-SEPTEMBER-30

CIE No.	Title	Year	Price Code	Price Cd\$	Sales								Purchase				Current Stock	CB X	
					97-98	98-99	99-00	2001	2002	2003	04/05	99-00	2001	2002	2003	04/05			
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	189														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	CD	83	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	
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	335														0	
133CD	Proc.24th ses.CIE,Warsaw	1999	CD	114														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	
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	
143	Colour vision req.for transport	2001	E	80				1	1				2					0	
144	Road surf. & marking refl.charact.	2001	D	74									2					2	

CIE/CNC PUBLICATION STOCK LIST

2005-SEPTEMBER-30

CIE No.	Title	Year	Price Code	Price Cd\$	Sales							Purchase					Current Stock	CB X
					97-98	98-99	99-00	2001	2002	2003	04/05	99-00	2001	2002	2003	04/05		
145	Cor.for vision&visual perform.	2002	E	80					2					2			0	
146/7	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 outdoor lts	2003	E	80						2	1				2	1	0	
151	Spectral weighting of Solar UV	2003	D	74											2		2	
153	Interc.of luminous flux of HPS	2003	A	43											2		2	
154	Maint.of outdoor lighting system	2003	C	68						1	1				2		0	
155	Ultraviolet air disinfection	2003	G	91						1	1				2		0	
156Gamut mapping algorithms	2004															0	
157	..Museum object by optical rad.	2004															0	
159	Colour appearance..CIECAM02	2004															0	
	CIE Discs:																	
D001	Phot. & colorimetric data	1988	C	68	1		1			1			1		1		0	
D002	Colorimetric&colour rend. data	1991	J	122													0	
D003	CIE roster		-														0	
D004	CIE publications	1993	J	122													0	X
D005	Daylight simulators	1994	A	43													0	
D006	Daylight AQC	1994	-														0	X
D007	Corresponding colours	1994	F	86													0	
D008	Colour rendering index	1995	X	53					2					2			1	
	Standards and Draft Standards:																	
ISO10526	Standard illuminants	1991	B	57			1										1	
ISO10527	Colorimetric observers	1991	G	91			1										2	
S003	Spatial distribution of daylight	1996	A	43	1												0	X
S004	Colours of light signals	2001	B	57													0	
S005	Illuminants for colorimetry	1998	B	57													2	
16508/S006	Road traffic light	1998	A	43	1												1	
17166/S007	Erythema action spectrum	1999	A	43			1		2					2			1	
8995/S008	Lighting of indoor work places	2001	C	68				3		4				3		5	1	
S009	Photobio.safety of lamp&system	2002	D	74													0	
S011	Spatial distribution of daylight	2003	A	43						2					3		1	
S013/E	Int'l stand.global solar UV index	2003	A	43													0	
DS004.2	Signal colours	1996	X														0	X
DS007.4	Erythema action spectrum	1998	X	-	1												0	X
DS008.2	Lighting of indoor work places	2000	X	31													0	X
DS009.1	Photobiological safety of lamps	2000	X	31													0	X
DS010.2/3	CIE sys.of physical photometry	2001	X	31				2						2			0	
DS011.2/E	CIE standard general sky	2002	X	31													0	X
DS012.2/E	Spectral quality of daylight simu.	2002	X	31													0	
DS013.2	Int'l standard global UV index	2002	X	31													0	X
DS015/E	Ltg.of work places-outdoor work plac	2002	X	31						1					1		0	

CIE/CNC PUBLICATION STOCK LIST

2005-SEPTEMBER-30

CIE No.	Title	Year	Price	Price	Sales							Purchase					Current	CB
			Code	Cd\$	97-98	98-99	99-00	2001	2002	2003	04/05	99-00	2001	2002	2003	04/05	Stock	X
Special Publications - Proceedings of Conferences and Symposia:																		
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	125	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.	1997	K	137												0		
X015	Proc. symp. lighting quality	1998	H	98												0		
X016	Meas.of optical radiation haz.	1998	X	98												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	CD	83												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	CD	92												0		
X025	Temporal & spatial aspects of light &	2003	L	166												0		
X025CD	Temporal & spatial aspects of light &	2003	CD	92												0		
AIC1AB	AIC Proc. 93 A+B	1993														0		
AIC1AC	AIC Proc. 93 A+C	1993														0		
AIC1ABC	AIC Proc. 93 A+B+C	1993														0		
Misc.	CIE symposium Toronto 2000	2000		10						1						0		
Total					19	21	14	28	24	27	17	14	24	16	39	2	280	

NOTE: 1) **CB x** - Withdrawn and/or out-of-print publications from Central Bureau of CIE.
 2) There was no publication purchase for the period: Oct/01/2004 - Sep/30/2005.
 3) There was no publication sale for the period: Oct/01/2004 - Sep/30/2005.



COMMISSION INTERNATIONALE DE L'ÉCLAIRAGE
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APPENDIX H

CNC/CIE 50th Annual Meeting

2005-October-29

Request for Funding

CNC/CIE Request for Funding

Applicant's Name: DR. JENNIFER A. VEITCH
 Address: NRC/IRC
BLDG M-24 1200 MONTREAL RD
OTTAWA, ON
K1A 0R6

Activity for which funding is requested: DIVISION MEETINGS - D3 AND D6,
SEPT. 9, 2006 (FOLLOWING CIE
SYMPOSIUM ON LIGHTING + HEALTH)

Justification for CNC/CIE Funding (refer to General Policy for criteria):

THIS FALLS INTO THE CATEGORY OF RETURNING HOSPITALITY. FUNDS WILL PROVIDE LUNCH AND COFFEE FOR DELEGATES TO TWO CIE DIVISIONS MEETING IN OTTAWA FOLLOWING AN OFFICIAL CIE EVENT. THE SYMPOSIUM ON LIGHTING + HEALTH WILL BE SUPPORTED BY NRC-IRC, ~~AS~~ AS WILL ~~THE~~ ~~MEETING~~ MEETING ROOMS ~~FOR~~ FOR THE DIVISION MEETINGS. THERE'S NO

Detailed Budget ADDITIONAL FINANCIAL SUPPORT FOR HOSPITALITY (WITHOUT CNC HELP,

Item	Description	Amount
1	COFFEE BREAKS - \$5.00 X 40 PEOPLE	200.00
2	LUNCH - \$20.00 X 40 PEOPLE	800.00

ATTENDEES WILL BE ON THEIR OWN).

Other Sources of Funding and Amounts:

Name	Amount
ROOMS PROVIDED IN-KIND BY NRC	

Return to:

A.A. Gaertner
 Secretary, CNC/CIE
 Institute for National Measurement Standards
 M-36, Room 115
 National Research Council of Canada
 1200 Montreal Road
 Ottawa, Ontario K1A 0R6

Tel: (613) 993-9344 Fax: (613) 952-1394
 Email: arnold.gaertner@nrc-cnrc.gc.ca

NOTE. THE MEETINGS TAKE PLACE ON A SATURDAY AND ARE LIKELY TO BE ON THE NRC CAMPUS. THERE WILL BE FEW OTHER OPTIONS FOR LUNCH, OTHER THAN PROVIDING IT TO THE ATTENDEES.



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APPENDIX I

CNC/CIE 50th Annual Meeting

2005-October-29

CIE-CNC Web Development Committee Report

CIE-CNC Web Development Committee Report October, 2005

Jennifer A. Veitch, Ph.D.

Committee Members: J. A. Love, R. Smith, V. Venkataramanan, J. A. Veitch

The committee was formed at the 2004 meeting with the aim of developing a presence on the WWW for the CIE-CNC. The committee discussed various options by e-mail in the weeks following the 2004 meeting. It became clear that the most straightforward way to proceed would be to hire a contractor to host the site and to provide necessary programming services on an ongoing basis. Although this will be an ongoing expense to the CIE-CNC, it will ensure that the necessary registrations are up-to-date, the pages are well designed and continually available, and the maintenance does not require volunteer labour (which would probably result in them being rarely updated).

Accordingly, the committee obtained a proposal from Mr. Robert Bridges, an Ottawa-based lighting professional who has designed web pages for several other lighting organizations, including the National Capital Region section of the IESNA and the Canadian Region of the IESNA. Based on this proposal, the committee submitted the following motion, together with a rationale for the motion, to the CNC/CIE Members and Advisory Members:

That the CNC/CIE authorize an annual expense of \$625 to cover the costs of creating, hosting, and maintaining a web site, and for supplementary programming. This amount would be paid by the Treasurer from CNC/CIE funds following receipt of an invoice from the contractor.

This proposal was voted on by a letter ballot of the CNC/CIE and was approved.

Mr. Bridges registered the domain name: <http://www.cie-cnc.ca/> on our behalf and initially marked it with a placeholder to announce it as the future home of our content. Jennifer Veitch, on behalf of the committee, met with him and communicated our desires for the content of the site. The committee reviewed the draft pages (beta site) and provided additional input. Public Works and Government Services Canada (PWGSC), through Ms Karen Pero, translated the English content into French, so that our pages are bilingual. Additional proofreading and translation was provided by Mr. Roger Marchand of NRC's Institute for Research in Construction. Following final corrections, the page will be launched on October 26, 2005. The committee expresses its thanks to all who assisted with the preparation of content, and especially to PWGSC for the translation.

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. We discussed with the full CNC whether or not to

have either e-mail boxes for CNC members, but it was decided not to do so. Members did not want to have to monitor another address, nor to have extra e-mail (and spam) forwarded to their regular addresses. As a result, only the CNC Secretary's contact information appears on the site at present.

We could add many other features, such as the annual report (as a PDF file), meeting minutes, the Code of Procedure, and the forms for requesting funding for specific events. There is also the possibility of adding a members-only (password access) area, where documents for review and ballots could be downloaded. The host would also support the creation of an automated e-mail discussion list (for any combination of membership categories), if that were desired (one advantage would be that discussions would not need to be run through the Secretary, as is now the case.) Advice from the CNC members would be appreciated as to whether or not any of these features is desirable.

We also would welcome suggestions for additional information to be added to the site, and in particular additional links for the Lighting in Canada Links page.

This committee has achieved its initial goal, that of overseeing the creation of a CIE-CNC web presence, and need not continue in its current form unless desired. However, at least one person will need to act as liaison with the contractor, Bob Bridges, to oversee maintenance. This could be the Secretary, or it could be someone else (in order not to add yet another task to the Secretary's list). Jennifer Veitch is willing to continue to act in this capacity, although she would also be happy to turn it over to someone else who is willing to review and update the content on a regular basis.



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APPENDIX J

CNC/CIE 50th Annual Meeting

2005-October-29

**Report on the Meeting
of the
CIE Board of Administration
12 May 2005**

Report on the Meeting of the CIE Board of Administration
12 May 2005

Sharon McFadden
Director, Division One

The meeting included reports from the various vice-presidents on initiatives that the BA is currently undertaking, and discussions on future meetings and other issues that have arisen during the past year. This report will focus on the issues that are potentially relevant to the CNC/CIE.

Seminar and Symposia: TC1-58 held a symposium on Mesopic Photometry at the Interim Meeting. Several are planned for 2006. They include:

May 2006, Canada: Expert Symposium on the 1931 Standard Colorimetric Observer

June 2006, Braunschweig, Germany: Symposium on Uncertainty

September 2006, Canada: Follow-up symposium on Light and Health

September 2006, Greece: Urban Nightscape (organized by CIE NC Greece)

October 2006, France: Expert Symposium on Visual Appearance

It was recommended that Symposia organized by Divisions should be held under the CIE logo, whereas for Symposia organized by NCs it should be made clear that it is an NC event. D. Sliney presented a draft document giving guidance on running a CIE Symposium.

ILV: Voting on various sections of the ILV was completed by December 2004, but not all Divisions had handled the comments that they received in time for the Interim Meeting. The harmonizing committee met during the Interim Meeting to plan the harmonization of the definitions in the different sections. The main issue was that some Divisions provided more restrictive definition of some terms. This often happened when a term was used in a technical report. Recommended approach was to use the general definition and provide restrictive definition as a note.

Finances: The CIE had a surplus of 42000 Euros in 2004 due to two very successful symposia. There was a suggestion that the funds should be used to produce an annual report on technical activities (with the help of a marketing agency), which the NCs can use for marketing and to establish a database (with the help of contract workers), containing address details of all people involved in CIE activities, especially TC members. Twenty thousand Euros was added to the budgets for 2006 and 2007 for this purpose.

Publication Sales: At the time of the meeting, an agreement with TechStreet to develop a web shop for CIE publications had been signed and it was almost ready for testing. It was expected to be in operation within a couple of months. The CB said that publication sales for the first 4 months of 2005 were already higher than half of last year's results. A further growth in sales is expected once the web shop is in place.

Education: The CIE is planning to establish a list of recommended journals (not yet listed on the Citation Index) that people doing work for the CIE could publish in. Journals would need to apply providing a motivation and giving information on their refereeing procedure. LR&T had sent a letter to F. Hengstberger, asking to be regarded as a recommended journal, and the BA approved putting LR&T on this list. So far, two other journals, Light & Engineering/Svetotekhnika and

Journal of Light & Visual Environment will be invited to apply. After these two journals have responded, a list will be published in CIE NEWS and other journals will be invited to apply.

New Awards:

Despite opposition from some NCs, the BA decided to name each award after a distinguished member of the CIE. The voting went as follows:

a) Distinguished Services Award in Fundamental Research

The majority of BA members voted in favour of "Judd".

b) Distinguished Services Award in Applied Illuminating Engineering:

The majority of BA members voted in favour of "Waldram".

c) Distinguished Services Award for Organization/Administration:

The majority of BA members voted in favour of "de Boer".

When these results were announced at the Division 1 meeting, Paula Alessi protested that the AIC already had a Judd Award that had been in place for years and that had received the approval of the widow of Judd. The CIE's decision to create a Judd Award would create confusion. This concern was sent to the BA and a second ballot was held. The choice was Wyszecki. Recommendations from the Divisions for each award need to be submitted by the end of this year.

Quadrennial: The deadline for submission of abstracts is September 15th 2006. The meeting will be 4-11 July, 2007.

Expert Symposium: Dates will be 16-17 May 2006 preceded by ISCC meeting 14-15th May and followed by Division 1 meeting 18-19th May. All meetings will be held at the NRC Laboratory on Sussex Drive in downtown Ottawa. A call for papers has been issued and a website www.iscc.org/jubilee2006 is up and running. The deadline for abstracts is 15 January 2006.



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APPENDIX K

CNC/CIE 50th Annual Meeting

2005-October-29

CNC/CIE Members and Advisory Members



CNC/CIE MEMBERS

<u>CNC/CIE</u>			<u>TERM (expiry)</u>	<u>CIE</u>
President	J.A. Love	Alberta	2007-12-31	
Vice President	J.C. Zwinkels	Ontario	2007-12-31	Division 2
Secretary/Treasurer	A.A. Gaertner	Ontario	2005-12-31	
Publications	K.F. Lin	Ontario	2008-12-31	
	R. Baribeau	Ontario	2006-12-31	Division 8
	J.(Joe) Bastianpillai	Ontario	2007-12-31	Division 4
	J.D. Yvon Deslauriers	Ontario	2007-12-31	Division 6
	S.M. McFadden	Ontario	2007-12-31	Division 1, DD of Div 1
	I.C. Pasini	Ontario	2005-12-31	
Division 3 Assistant	Ralph A. Smith	New Brunswick	2005-12-31	
	M.K. Timmings	Ontario	2007-12-31	Division 5
	J.A. Veitch	Ontario	2008-12-31	Division 3
	Lorne A. Whitehead	British Columbia	2008-12-31	
<i>ex officio</i>	A.R. Robertson	Ontario		NRC/INMS Member

CNC/CIE ADVISORY MEMBERS

W.K. Adrian	Ontario	P. Manning	Nova Scotia
Nolie Agellon	Ontario	J. Bruce McArthur	Ontario
[Santo Aguanno	Ontario]	Donald B. McIntyre	Ontario
Eduard Alf	Ontario	S.W. McKnight	Ontario
Chantal Arsenault	Ontario	Arthur H. Mendel	Québec
Ian Ashdown	British Columbia	Guy Newsham	Ontario
M.G. Bassett	Ontario	Keith Niall	Ontario
Chrisnel Blot	Québec	T. Nilsson	P.E.I.
Mario Bucci	Ontario	Karen Pero	Québec
J. Allyson Chrysler	Ontario	Igor Peshko	Ontario
Vince Cimino	Ontario	Pascale Reinhardt	Ontario
W.B. Cowan	Ontario	Tim M. Richardson	Ontario
Biman Das	Nova Scotia	J.B. Roberge	Québec Finance Committee
R.V. Day	Ontario	Mankajee Shrestha	British Columbia
Walter T. Delpero	Ontario	Andrew D. Silbiger	Ontario
Marie Dumont	Québec	William A. Simpson	Ontario
[Marcin Gorzkowski	Ontario]	Dyoni Smith	Ontario
John W. Harron	Ontario	Nikolay Stoev	Ontario
Kurt Ising	British Columbia	Cristian Suvagau	British Columbia
Byron Jordan	Québec	Eli Szamosi	Ontario
S.M. Kaye	Manitoba	B.W. Tansley	Ontario
[Donald Kline	Alberta]	R. Topalova	Ontario
Barbara Kolesnik	Ontario	Venkat Venkataramanan	Ontario
Jacques Lacasse	Québec	James G. White	Ontario
R. Lakowski	British Columbia	R.W. White	Québec
André Laperrière	Québec	Roy Williams	Manitoba
Denis Lavoie	Québec	Ernest Wotton	Ontario
Ken Loach	Ontario		

[] = require CNC/CIE appointment at annual meeting of 2005-October-29.

2005-October-26



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Canadian Division Members' Reports

CNC/CIE 50th Annual Meeting

2005-October-29

CIE Division 1

Vision and Colour

Division 1: Vision and Colour
Report to CNC/CIE Annual Meeting

Sharon M. McFadden
Defence Research and Development Canada - Toronto
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Phone: (416) 635-2189
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The annual meeting of Division 1 was held May 16th 2005 in León, Spain. The Division 1 Meeting was held in conjunction with the Interim meeting of the CIE. Divisions 2, 4, 5, and 6 also met at that time. In addition there was a one-day expert symposium on Lighting in Mesopic Conditions organized by TC1-58. The meeting was attended by all 5 officers, 18 country representatives of the 37 member nations and many guests (about 42 total attendance). S. McFadden was the official Canadian representative. Six Technical Committees (TC) met in conjunction with the meeting: TC1-56 Improved colour matching functions, TC1-58 Visual performance in the mesopic range, TC1-60 Contrast sensitivity function for detection and discrimination, TC1-62 Color rendering of white LED light sources, TC1-65 Visual appearance measurement and TC1-66 Indoor daylight illuminant.

Highlights

Five TCs, TC1-46, TC1-48, TC1-52, TC1-53, and TC1-59, and one Reportership, R1-16, were closed. Two TCs, TC1-67 and TC1-68, and one Reportership R1-38, were initiated (see summary below for a description on these). M. Melgosa has replaced J. Nobbs as Chair of TC1-55. Publication activities over the past year include:

1. New publications reported at the Division 1 meeting
 - a. 160:2004 A review of chromatic adaptation transforms (TC1-52)
 - b. 15.3:2004 Colorimetry, Third Edition (TC1-48)
 - c. S012/E:2004 Standard method of assessing the spectral Quality of daylight simulators for visual appraisal and measurement of colour (TC1-53) – As of September, this is a joint ISO/CIE Standard - ISO 23603:2005(E) / CIE S012/E:2004.
 - d. 165-2005 CIE 10 degree photopic photometric observer (TC1-59)
2. New publications since the Division 1 meeting:
 - a. 166:2005, Cognitive Colour. 24 pp. ISBN 3 901 906 40 1 (R1-11)
 - b. 167:2005, Recommended Practice for Tabulating Spectral Data for Use in Colour Computations, 21 pp. ISBN 3 901 906 41 X (TC1-38)
3. Completed Division and BA ballot:
 - a. Fundamental Chromaticity Diagram with Physiologically Significant Axes, Part 1 (TC1-36)

Summary of Progress of Technical Committees and Reporterships

The following summaries of activities in the various Technical Committees of Division 1 are based on our notes from the 2005 Division 1 meeting. Additional information on some of the TCs can be found in the Activity Report for 2005. It is available in PDF format on the Division 1 website

<http://www.bio.im.hiroshima-cu.ac.jp/~cie1>. It includes the terms of reference and membership for all Technical Committees and Reporterships.

Progress in Vision Section (F. Viénot, Associate Director)

TC1-30: Luminous Efficiency Functions (Y. Nakano, chair)

Dr. Nakano gave a short report at the Division Meeting. He said that the interpolation issue had been solved by the report of TC1-38 and that the notation for maximum efficacy was agreed upon with TC1-59. By taking all these things into account, the final draft should be prepared as soon as possible.

TC1-36: Fundamental Chromaticity Diagram with Physiologically Significant Axes (F Viénot, chair)

Part 1 of a technical report comprising Chapters 1 to 6, has been approved by the members of the TC. Balloting was by the Board of Administration and the members of Division 1 finished on the 20th of October. The Chapter headings for the total report are as follows:

1. Introduction
2. Fundamental response curves for the 10° observer
3. Derivation of the photo-pigment absorption spectra
4. Fundamental response curves for the 2° observer
5. A field size and age dependent observer
6. Tables
7. Photometric aspects : the choice of the $V_{10}(\lambda)$ and the $V_2(\lambda)$ functions
8. Development of a 2 dimensional chromaticity diagram
9. Conclusions and recommendations
10. Tables

Part 1 deals with the choice of the set of color-matching functions and the estimates of the cone fundamentals for the normal observer ranging in viewing angle from 1 to 10 degrees. There are still some fundamental questions concerning the contents of Part 2, Chapters 7 and 8, which are now being addressed

TC1-37: Supplementary Systems of Photometry (K Sagawa, chair)

The Chair provided a short report on the results compiled to date and the extent to which the data fit the proposed model. The proposal is to formulate the change in the photometric function with change in luminance over the mesopic range. Unfortunately, the model does not always provide a good fit to the data. Progress has been slow but the chair plans to focus on preparing a report summarizing the conclusions from the published literature and proposing a system for mesopic photometry that will include recognition of the Helmholtz-Kohlrausch effect and the Purkinje effect. Inputs to the model will be the photopic and scotopic luminance and a function describing the change of the contribution to colour as a function of luminance. This TC is being urged to complete its work because experimental work in TC1-58 is investigating mesopic photometry from a visual performance perspective and is producing results that could also lead to a mesopic model.

TC1-41: Extension of $V_m(\lambda)$ beyond 830 nm (P Walraven, chair)

The terms of reference have been modified as follows:

"Extension of $V_M(\lambda)$ beyond 830 nm, including modification of $V_M(\lambda)$ in the 660-780 nm region of the spectrum".

The draft of the report is close to being completed, but awaits the approval of Chapter 6 of the report of TC1-36. This chapter has now been approved and so the work of this TC should now make progress.

TC1-42: Colour Appearance in Peripheral Vision (M Ayama, chair)

The preparation of a draft report has been delayed until the fall of 2005. It will summarize the results of the data collected in support of this TC. A table of contents is available in the 2005 Activity Report. The draft report will feature a color zone map from Dr. Ayama's lab, figures that represent the hue shifts with eccentricity, and all pertinent references.

TC1-46: Concept and Application of Equivalent Luminance (Y Nakano, chair)

The objective of this TC is to write a technical report describing the fundamental concepts of equivalent luminance and to provide guidelines on how to apply these concepts. This TC has found that it is difficult to use the concept of equivalent luminance in practical situations, such as for mesopic photometry. Also it has not been very active and the Chair has not been able to contact the members. Thus the Division members voted to close the TC and change it into a Reportership (R1-38).

TC1-54: Age-Related Change of Visual Responses (K Sagawa, chair)

Dr. Sagawa presented a brief report on the data that has been collected so far on the three visual functions included in the terms of reference, i.e., spectral sensitivity (flicker photometry and brightness matching, visual acuity, and contrast sensitivity of the eye. Consideration is now being given to the contents of a technical report.

TC1-58: Visual Performance in the Mesopic Range (L Halonen, chair)

The second meeting of this TC was held in León. There were two presentations of work being done. The first was from Marjukka Eloholma from Helsinki University of Technology who described the EU MOVE Project that was finished at the end of 2004. One of the outcomes of this work was a pair of models for mesopic photometry. The first was a practical model that combined the photopic and the scotopic functions using a single constant, and the second a chromatic model that included the effect of the likely colour changes with decreasing level of luminance. The second presentation was by Stephan Volker of the Light Lab at the University of Paderborn, Germany. This work was concerned with the optimisation of illumination from LED headlights and the impact on safety. A work programme for the TC was discussed and a number of people indicated that they were prepared to work on aspects of mesopic vision under the following headings:

- To define visual performance and related terms
- To carry out investigations, collect and analyse data, and build new models
- To produce a final model

Application areas included: road and street lighting, railway lighting, navigation, aviation, emergency lighting and digital cinema. Variables for investigation included: luminance, contrast, reaction time, visual acuity and eccentricity.

TC1-59: Standard Photometric 10° Observer (J Schanda, chair)

The report from this TC was published (as CIE 165:2005, CIE 10 Degree Photopic Photometric Observer) earlier this year. The TC was closed at the meeting of Division 1.

TC1-60: Contrast Sensitivity Function (CSF) for Detection and Discrimination (E Martinez-Uriegas, chair)

There has been slow progress during 2004, mostly because of the job transitions of several committee members. The work towards a technical report describing recommendations has progressed in several areas.

- In the area of tools, Matlab code is available to compute and plot one of the Barten CSF functions. Similar tools will be developed to enable further computations using other CSF formulas and models.
- In the area of CSF data, preliminary comparisons have been made that include the classical data from Campbell & Robson (1968), modern data using sinusoidal gratings (Eugenio Martinez-Uriegas, 1995), and more recent data from a considerable number of labs (twelve) that used the same Gabor patches as stimuli and a unified lab protocol and data analysis (Modelfest, 2001).
- Finally, work has started looking at the chromatic dimension of the CSF (Sophie Wuerger will provide key reference material).

Documentation on these and other issues, as well as a bibliography and discussion documents, are archived on the TC website.

R1-16: Visual Adaptation to Complex Luminance Distribution (H Shinoda)

This Reportership was closed.

R1-19: Specification on Individual Variation in Heterochromatic Matching (H Yaguchi)

A report, featuring the development of a simple test of heterochromatic brightness matching, has been prepared, but it is in Japanese. A version in English should be completed soon.

R1-23: Guidelines on Planning a Mesopic Photometry Investigation (P Trezona)

The report is to be published in the CIE collection after recommendations provided by two reviewers have been incorporated.

R1-35 Irregularities in $\bar{y}_{10}(\lambda)$ (P. Walraven)

This Reportership was formed in 2004 and work is in progress to document the three known irregularities. The work was supposed to have been done collaboratively. The reporter now intends to complete the work on his own.

R1-36 Action Spectra for Glare (J. Fekete)

This Reportership was formed in 2004. The background thinking for this Reportership is that it is known that halide lamps create more glare than traditional incandescent headlamps on automobiles and in the next five years LED lamps will also become more available. What are the implications in terms discomfort glare and/or disability glare?

R1-37 Definition of the Visual Field for Conspicuity (N. Itoh)

This Reportership was formed in 2004. The reporter provided a detailed review of her progress at the Division meeting. A review of current research has been made and the division of the retina in terms of photoreceptors identified as an important contribution to visual function including detection/perception, conspicuity/discrimination, and performance/behaviour. Area of useful field of view changes depends on how you define it – visibility, conspicuity, working conspicuity. One needs to consider attention in defining field of view. It is probably task dependent. The larger the cognitive component is the smaller the useful field of view. The plan is to establish tables and graphs defining the useful field of view as a function of task.

Progress in Colour Section (M. Pointer, Associate Director)

TC1-27: Specification of Colour Appearance for Reflective Media and Self-Luminous Display Comparison (P J Alessi, chair)

The Chair provided a brief report to the Division meeting. Her plan is to write the report covering the work conducted under this TC in 2006.

TC1-38: Compatibility of Tabular Data for Computational Purposes (C McCamy, chair)

The draft 9 report has been completed and was circulated for ballot. The Acting Chair, Dr. Pointer, is currently addressing the comments. A major concern is that there is no conflict with 15.3.

TC1-44: Practical Daylight Sources for Colorimetry (R Hirschler, chair)

There was no TC meeting in 2004, but new research results were published at the Gaithersburg ISCC, CORM and ASTM meetings in May 2004. D. Rich (Sun Chemical) presented new data of light booth irradiance comparisons, I. Frye (NIST) presented data on an LED-based simulator which (in the visible range) seems to be very good. New results were also published by Hirschler et al. (SENAI/CETIQT) on *Practical Daylight Simulators for the Visual Evaluation of Fluorescent Samples* and also on *Standards for Assessing the Quality of Daylight Simulators in the UV Range – a Critical Comparison*. Some of these publications, as well as several others published in 2003, have been posted on the Division 1 website. The TC Chair is preparing the first draft of a report. Progress on this report has been delayed because the Chair changed positions.

TC1-48: Revision of CIE Document 15.2 Colorimetry (J Schanda, chair)

The revision of 15.2 was published in 2004 as CIE Publication 15:2004, Colorimetry, 3rd Edition. The TC was closed at the Division meeting in León.

TC1-52: Chromatic Adaptation Transform (M R Luo, chair)

Since the report CIE Publication 160:2004, *A review of chromatic adaptation transforms* had been published, the TC was closed at the Division meeting in León.

TC1-53: A Standard Method of Assessing the Quality of Daylight Simulators (C McCamy, chair)

The chair found it difficult to complete this work. Due to the efforts of Mike Pointer as Acting Chair, this standard was published in the fall of 2004 as CIE Standard S 012/E:2004, Standard method of assessing the spectral quality of daylight simulators for visual appraisal and measurement of colour. The TC was closed at the Division meeting in León.

TC1-55: Uniform Colour Space for Industrial Colour Difference Evaluation (M. Melgosa, chair)

The Chairman of this TC has now resigned and it was proposed at the León Division 1 meeting that Dr Manuel Melgosa from the University of Granada, Spain should be invited to take over this role. Dr. Melgosa accepted the invitation and his appointment has been approved by the Board of Administration.

TC1-56: Improved Colour Matching Functions (M Brill, chair)

Some numerical studies indicate that W. A. Thornton's observations of transformability failure may be consistent with statistical intra-observer matching errors. In April 2001, the chair delivered a paper that concluded that, based on plausible intra-observer errors, statistically induced departures from transformability have magnitudes similar to the departures noted by Thornton. There was no committee activity in 2004, other than some tentative indications of interest in performing an experiment that tests the intra-observer transformability of primaries in a colour match. A suggestion that the TC be closed brought response from three groups who indicated that they were doing relevant work. Thus the TC met in León and three presentations were given, by Luo (UK) at 3 cd/m², Oleari (IT) at 30 cd/m², and Nakano (JP) at 300 cd/m². It is the intention that the UK observer should visit the other laboratories to make measurements using their apparatus. Thus the TC work continues.

TC1-57: Standards in Colorimetry (A Robertson, chair)

The Committee has 19 members and 10 liaisons. It has been inactive pending completion of the 3rd Edition of CIE Publication 15 by TC1-48. With the publication of CIE 15:2004 *Colorimetry* in November, TC1-57 can now continue its work, most of which will be based on this Publication. No comments have been received from ISO/IEC committees on the 4th draft of the standard on CIELAB so this standard can now be voted on formally in TC1-57. Standards on CIELUV, the calculation of tristimulus values, and CIEDE2000 will be drafted during the present year.

TC1-61: Categorical Colour Identification (T Ishida, chair)

There was no report from this TC.

TC1-62 Colour rendering of LED light sources: (P Bodrogi, chair)

A new website has been established for TC members where they can download the following documents: activity reports (2002, 2003, 2004), minutes of the meetings (San Diego - 2003 and Tokyo - 2004), the work-plan, a list of members, an annotated bibliography, and contributions from members (presentations, publications, computation spreadsheets and other documents).

Achievements:

- TC1-62 continued updating the annotated bibliography.
- Papers by TC members were given at the CIE Expert Symposium on LED Light Sources (Tokyo 2004) on visual colour rendering experiments and theoretical computations. Experimental results accumulated at various locations show insufficient correlation with the predictions of the CIE CRI. The CIE CRI does not seem to be applicable to white LED light sources, especially to RGB clusters.
- TC1-62 is aware of many other indices including a report on a set of indices using recent colour appearance modelling. TC members agree that any new CRI calculation method should be in addition to the current CIE CRI, and it will not replace the current CIE CRI. The new method should be formulated to be valid for all light sources.
- TC1-62 will publish a Technical Report describing the findings of the visual experiments and the applicability of the CIE CRI. Then, TC1-62 will be closed and they will suggest the establishment of a new TC to develop a new additional index or set of new additional indices intended to be valid for all light sources.

The TC met in León to discuss the contents of its technical report.

TC1-63 Validity of the range of CIEDE2000 (K. Richter, chair)

The Chair said that he was doing experiments because there was no relevant data at greater than 5 CIELAB separation. This data will be used to investigate the applicability of CIEDE2000. The results of this work are available. Two members have reported relevant work. Claudio Oleari reported on several papers related to the colour metrics for colour discrimination. Pieter Walraven reported on the statistics of colour thresholds by colour vision models. Both topics are important and are planned to be included in a future CIE report.

In 2004 the chairman worked as editor of a Technical Report ISO/IEC TR 19797:2004-09 and of a Draft Technical Report ISO/IEC DTR 24705: 2004-09 in the field of Image Technology for Office Equipment (scanners, printers, monitors). Both topics are connected to the terms of reference of CIE1-63. A more detailed report is available in the 2005 activity report.

TC 1-64 Terminology for vision, colour and appearance (S. McFadden, chair)

TC1-64 held its first formal meeting in conjunction with the annual meeting of Division 1, in Tokyo, Japan. The Chair provided a background on the TC and outlined a possible work plan for maintaining and updating the sections of the International Lighting Vocabulary (ILV) that are the responsibility of Division 1. As well, two sets of terms were reviewed. The first set had been submitted by Division 8. They wanted to know if any of the terms should be the responsibility of Division 1. The second set includes terms that had been suggested by Division 1 members during the Division 1 ballot on proposed changes and additions to the ILV. Those terms that were identified as suitable for inclusion in the ILV and the responsibility of Division 1 will be further reviewed by members of the TC before the next meeting of Division 1. Since the meeting, the Chair has agreed to participate in a Committee, formed by the Board of Administration, to integrate the new and modified terms from all the Divisions prior to publication of a revised version of the ILV.

TC1-65 Visual appearance measurement (M. Pointer, chair)

This TC was established in 2003 in San Diego and met for the first time in 2004 in Tokyo. It now has 26 members. The planned programme of work is as follows:

1. To produce a technical report describing a suitable framework for the measurement of visual appearance.
2. To consider the necessity of establishing new TCs to work on specific aspects of visual appearance measurement, e.g. gloss, translucency.
3. To address appearance terminology.
4. To produce a list of available instruments, and their specifications, that could support the various elements of the framework.
5. To construct a database of academic and other research institutions that are working on aspects of the framework.
6. To consider the publication of case studies that show individual applications of appearance measurement.
7. To encourage participation from industry in the work of refining the framework and building measurement procedures that relate to appearance.

A first draft of a Technical Report has been circulated to the TC and responses have been received from 14 members. The TC met in León to review its status and plan the way in which the comments would be handled. Lists of resolved and unresolved comments to the first draft were distributed to all members. Responses were received from 7 members. These responses are now being used to prepare a second draft. A set of appearance-related terms was also circulated but comments received from only two TC members as of the TC meeting in León. Since then further comments on the definition of visual appearance have been received. The Chair has asked members to vote on their preference. At the meeting in León, it was agreed that the TC would concentrate on the report and consider other items in its work plan at a later date.

TC1-66: Indoor daylight illuminant (J. Schanda, chair)

This technical committee was approved at the last BA meeting of 2004 and met for the first time in León, Spain. A draft technical report was discussed in which it was agreed a new indoor daylight illuminant would be presented. This would take into consideration the requirements of the paper industry and the desire of CIE to deprecate the use of illuminant C as representative of daylight. Data would be presented that showed the typical transmittance of window glass, both with and without coating.

R1-11 Cognitive Aspects of Colour: (G Derefeldt)

The article, *Cognitive Colour* was published in *Color Research and Application* 29:7-19 (2004). A version of that article is now ready for publication by the CIE. The Reportership will then be disbanded.

R1-32 Emotional aspects of colour and light (G. Derefeldt)

Relevant literature is being gathered and categorized. There is a substantial literature from a wide range of perspectives – cognitive, emotion, mood, feelings, social as well as physiological. The categorized list of reports will be distributed as a database so that those interested can add further references and comments. This should then lead to areas that may need the work of a Technical Committee.

R1-33 Colour-difference evaluation (R. Luo)

Four sets of experimental results based on textiles were reported recently to test the performance of CIEDE2000. These results are named Spain, USA-AATCC RA36, Brazil and Vik data. Textile

researchers are interested in comparing the CIEDE2000 and the current ISO standard, CMC. A brief account of each is given below.

- The Spain Data included 109 pairs of textile samples with a mean ΔE^*_{ab} of 1.5. A panel of 8 to 13 observers using the grey scale method assessed each pair.
- The USA-AATCC RA36 Data included 17 pairs of textile samples with a mean ΔE^*_{ab} of 1.8. A panel of 31 professional assessors using the pass/fail scaling method assessed each pair.
- The Brazil Data included 5610 pairs of samples with a mean of ΔE^*_{ab} of 1.8. Eight to twelve observers from a total of 98 different factories using the pass/fail scaling method assessed each pair.
- The Vik (Czech) Data included 53 pairs of samples with a mean of ΔE^*_{ab} of 1.4. A panel of 87 observers assessed by using grey scale method assessed each pair.

The results from all the studies agreed well with each other and showed that all advanced formulae such as CIEDE2000 and CMC gave a similar degree of accuracy in predicting different data sets. However, CIEDE2000 consistently performed better for all colour differences in the blue region.

Two more recent articles have been published by Melgosa et al. (Spain) and Sharma (USA). The former investigated the significance of the correction terms in CIEDE2000 and the differences between different corrected versions using the 'Combined' data set, which was used to develop the CIEDE2000 formula. All the 5 corrections are significant at 95% the confidence limit indicating that these corrections are necessary to make improvement to the original CIELAB formula. The weaker terms are the ones giving the lightness and the grey corrections. There is also a significant difference between the CIEDE2000 and CMC at the 95% confidence limit. The Sharma paper indicates that some discontinuities occurred for the calculation of CIEDE2000. This is caused by the calculation of mean and difference of hue angles between two samples in a pair. However, the error is relatively small, i.e. less than 2% of the total colour difference units calculated.

In summary, CIE DE2000 is successful for use in the paint industry. The CIEDE200 (2:1) formula is better for use with images. The threshold value for the CIEDE200 (2:1) formula is 2 units.

Proposals for New Technical Committees and Reporterships

Two new TCs and one Reprtership were proposed at the Division meeting in León. The TCs have been approved by the Board of Administration.

TC1-67 The Effects of Dynamic and Stereo Visual Images on Human Health (V)

Chair: Hiroyasu Ujike (JP)

Terms of Reference:

To write a technical report on the physiological and psychophysical effects of dynamic and stereo visual images in terms of photosensitive seizures, visually induced motion sickness and eyestrain.

TC1-68 Effect of Stimulus Size on Colour Appearance (C)

Chair: Peter Bodrogi (HU)

Terms of Reference:

To compare the appearance of small ($<2^\circ$) and large ($>20^\circ$) uniform stimuli on a neutral background.

R1-38. Concept and Application of Equivalent Luminance.

Reporter: Y. Nakano (JP)

The reporter is to prepare a report addressing this topic.

Liaisons

The Association International de la Couleur: The 2005 AIC Tenth Congress was held in May in Granada Spain immediately prior to the CIE Mid-Term meeting in Leon, Spain. The 2006 AIC Interim Meeting will be held in Johannesburg, South Africa, October 24th to 27th. The topic will be Color in Culture and Color in Fashion. The 2007 AIC Mid-term Meeting will be held in, Hangzhou, China, either before or after the CIE Quadrennial Meeting in Beijing, China. The topic will be related to Instrumentation and Textiles. The 2008 AIC Interim Meeting will be held in Stockholm, Sweden. The topic will be Color Education. Finally, the 2009 AIC Eleventh Congress will be held in Sydney, Australia from September 20-25th.

Comite Consultatif de Photometrie et Radiometrie, BIPM: The next scheduled meeting is 27-28 October 2005. The three working groups of the CCPR met during 10-12 May 2004 at the NIST in Gaithersburg (USA), in connection with the CORM meeting. A detailed report on the work of BIPM can be found in the 2005 Activity Report.

ISO/TC6/3 Paper, Board and Pulp - Optical Properties: A detailed report is available in the 2005 Activity Report. The committee met in June in Sweden. The convener, Tony Bristow is retiring, therefore a replacement is needed. The committee is having discussions on indoor brightness and gloss standards, since CEN is doing a revision of their gloss standard.

ISO/TC38/SC1 Textiles Colour Fastness & Measurement: Our liaison, J. Nobbs has resigned and M. R. Luo will be new liaison to Division 1. They are proposing a colour constancy index based on CCAM02. They are also preparing a specification for viewing cabinets.

ISO/TC42 Photography: Pointer has resigned as liaison to Division 1, and the division is seeking a replacement.

ISO/TC130 Graphic Technology: They are preparing a standard on brightness of outdoor daylight. It may create confusion with new standard being prepared by CIE. The liaison for this group has resigned. It was suggested that we have a joint liaison with Division 2, but this is not yet established.

ISO JTC28 SC28: Richter reported as liaison. There is a paper on the BAM website on transformation from CIELAB to relative colorimetry.

IALA: Malcolm Nicholson reported this group's recent activities include: 1) a workshop, 2) they are trying to develop guidelines for modern sources such as LEDs, 3) There is a new system which includes 5 colors – blue was added to the previous recommendations, and 4) they are developing recommendations for lights in built-up areas.

Steering Committee for Image Technology (SCIT): No report.

The most recent reliable information on these Organizations and Committees can be found in the Division 1 Activity Report.

Next Meeting

The 2006 meeting will be held 18-19 May in Ottawa, Canada. It will be held in conjunction with the CIE Expert Symposium to celebrate the 75th Anniversary of the 1931 Standard Colorimetric Observer and the 75th meeting of the Inter-Society Colour Council.

New Officers for Division 1

There were no changes to the officers of Division 1.

Canadian Participation in Division 1

Based on the latest information available to me, Canada has representatives on 15 Technical Committees in Division 1. The Canadian representatives are Ian Ashdown on TC1-62, Byron Jordan on TC1-66, W. Cowan on TC1-37, S. McFadden on TC1-42, TC1-60, TC1-64, and TC1-65, A. Robertson on TC1-27, TC1-38, TC1-48, TC1-56, TC1-57, and TC1-59, Brian Tansley on TC1-67, J. Veitch corresponding member on TC1-65 and J. Zwinkels on TC1-38, TC1-44, TC1-53, and TC1-57. J. Zwinkels is also a liaison between Division 1 and ISO TC6/WG3. If anyone is interested in participating in one of the TCs, especially the newer ones, please contact Sharon McFadden.



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

Canadian National Committee Comité National Canadien



Canadian Division Members' Reports

CNC/CIE 50th Annual Meeting

2005-October-29

CIE Division 2

Physical Measurement of Light and Radiation

Division 2: Physical Measurement of Light and Radiation

Report to CNC/CIE 50th Annual Meeting
Cleveland, Ohio, October 29, 2005

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The most recent CIE Division 2 General and TC meetings were held May 16-18, 2005 in Leon, Spain, in conjunction with CIE Division 1 meetings and CIE Expert Symposium on Vision and Lighting in Mesopic Conditions. I attended the CIE D2 meeting and several D2 TC meetings. The following report is some of the meeting highlights. The detailed minutes of the meeting should be available mid-October 2005 at the web-site: <http://cie2.nist.gov>.

Eleven Technical Committees (TCs) met in conjunction with the Division 2 meeting: TC 2-16 Characterization of the performance of tristimulus colorimeters (Schanda), TC 2-23 Photometry of street-lighting luminaries (Vandermeersch), TC 2-45 Measurement of LEDs – Revision of CIE 127 (Murray), TC 2-46 CIE/ISO standards on LED intensity measurements (Scarangelo), TC 2-48 Spectral responsivity measurement of detectors, radiometers, and photometers (Eppeldauer), TC 2-50 Measurement of the optical properties of LED clusters and arrays (Schuette), TC 2-53 Multi-geometry colour measurements of effect materials (Roesler), TC 2-56 CIE/ISO standard on retroreflection measurements (Miller), TC 2-58 Measurement of LED radiance and luminance (Kohmoto), TC 2-59 Characterization of imaging luminance measurement devices (Blattner), and TC 2-60 Effect of bandpass function and measurement interval on spectral quantities (Gibbs).

The General D2 meeting had nearly 50 participants from 20 different countries.

Highlights

Next D2 Director?

The current D2 Director, Teresa Goodman (UK) has been elected one of the new VPs starting their term at the next Quadrennium meeting leaving this executive position open. The D2 Secretary, Yoshi Ohno (USA) indicated interest in this position. The request for nominations for new D2 Director will be sent out to Member Countries within the next few months.

Proposals for New Technical Committees and Reporterships

TC 2-61 Spectral and colorimetric electronic data interchange

Chair: M. Pointer (UK)

TR: To write a CIE/ISO Standard to define a specification for the electronic communication of spectral and colorimetric data.

Initial Members: P. Clarke (UK), E. Coetzee (ZA), R. Dornan (UK), P. Rhodes (UK), G. Roesler (Germany), R. Young (USA), M. Vik (CZ)

R2-36 Measurement requirements for solid state light sources

TR: To investigate the need for guidelines and recommendations relating to the measurement of LEDs, OLEDs and other solid state light sources that are not covered by other CIE Publications or TCs. Specific aspects to be considered include guidance for production areas, high brightness LEDs (e.g. pulsed operation and temperature control) and detector qualification (f1' etc.)

Reporter: K. Muray (USA)

R2-37 Industrial lighting requirements for a D65 Illuminant

TR: To investigate the requirement for a specification for a practical D65 source for use in industry, particularly the lighting industry.

Reporter: E. Pierson (Belgium)

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://cie2.nist.gov>.

Progress in TCs: 2-16, 29, 37, 40, 43, 45, 46, 47, 48, 58, 59 and 60 (Sauter, AD)

TC 2-16 Characterization of tristimulus colorimeters (Schanda). TC met in Leon and discussed editorial changes to be made. TC ballot is expected soon.

TC 2-29 Linearity (Larason). TCC received comments from TC members on latest draft in Oct. 2005. Next TC meeting is planned either in conjunction with CORM 2006 or PTB CIE Symposium in 2006.

TC 2-37 Detectors as transfer standards (Ohno). TCC sent report for TC ballot after Tokyo meeting. Received no negative votes but several comments, largely editorial in nature. TCC will complete final draft incorporating these changes and send to TC members for info only and for Division ballot. TC report has already been edited by D2 Editor.

TC 2-40 Characterization of luminance/illuminance meters (Rattunde). No report. DD will contact TCC and request new draft within 3 months. If no response, will look for a new Chair.

TC 2-43 Uncertainty (Sauter). TCC has been working on addressing questions raised at Tokyo meeting regarding uncertainties in distribution temperature determination. Robertson (*Canada*) was requested to formally report on this issue (R2-35). This has been completed and the TCC can finalize document.

TC 2-45 Measurement of LEDs, revision of CIE-127 (Muray). Meeting held in Leon. Received many comments re latest draft, TCC will incorporate these changes in a final draft that will be sent for TC vote.

TC 2-46 Standard on LED intensity measurement. (Scarangelo). Will meet in Leon after D2 general meeting. A new, more simplified version of document has been drafted by TCC based upon comments received from TC members.

TC 2-47 UV meters. TCC has resigned. DD has not yet been able to find an alternate chair; is currently pursuing prospect of someone from Finland who is active in UVNet.

TC 2-48 Spectral responsivity measurement (Eppeldauer). TC met in Leon and discussed the latest (7th) draft of the report. Received detailed inputs re spectrometer and monochromator performance that may be put in an Appendix. The Section on bandpass correction will need to be harmonized with TC 2-60.

TC 2-58 Measurement of LED radiance/luminance (Kohmoto). TC will meet in Leon after D2 general meeting to discuss the TCC's measurement results using the latest luminance meters.

TC 2-59 Characterization of imaging luminance measurement devices (Blattner). TC held their first meeting in Leon and discussed TR, vocabulary and first working document. It is planned to focus the TC report on luminance measurements.

TC 2-60 Effect of instrumental bandpass function and measurement interval on spectral quantities (Gibbs). TC held their first meeting in Leon and discussed TR. Y. Ohno made a presentation on the Sterns-Sterns evaluation method. The scope of the TC report will include spectroradiometers, spectrophotometer and spectral responsivity detectors.

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

TC 2-23 Photometry of street lighting luminaires (Vandermeersch). TC has had a preparatory meeting. TCC went through the CIE 121 document and considers that only 2 sections need to be amended: 1) correct mounting of luminaries in gonio applications and 2) conditions on how to do this. He raised the question of whether CIE-121 should be revised or a separate document. DD recommended that this TC be closed next year when report has been prepared. At that time, a new TC can be proposed to revise CIE-121.

TC 2-49 Flashing lights (Ohno) TCC indicated that little progress has been made on TC document due to lack of experimental results. To-date, D1 has not been supportive of providing these data. TCC has recently contracted a vision scientist to work on colour rendering of LEDs at NIST. This data will help to justify recommendations in report. It

is hope to standardize on one method for measuring effective intensity; current draft document contains 4 proposals.

TC 2-50 LED clusters & arrays (Schuette) TC met in Leon; this was first meeting with new Chair. Discussed terminology, schedule, and scope. It is not intended to include flashing operation or to go into applications; just describe the quantities used in applications:

TC 2-52 Emergency lighting (Vandermeersch). TCC reported that the activity is largely within the IEC.

Progress in TCs: 2-17, 19, 25, 28, 32, 35, 39, 42, 51, 53, 56, and 57 (Johnson, AD)

TC 2-17 Simulated solar radiation (Zerlaut) R. Berman (US) gave the report. The objective is to create tables of spectral energy distribution, replacing CIE Publication 85. There was an ad-hoc meeting in Jan. 2005 in Ft. Lauderdale (in conjunction with ASTM).

TC 2-19 Spectral coefficient of retroreflection (Johnson) The work of this TC has been completed for some time but needs to be sent to D2 Editor.

TC 2-25 Fluorescence measurements (Zwinkels, *Canada*). At the last meeting of this TC in San Diego, the 11th version of this document received formal approval from the TC members but with several comments. In the interim, TCC has been working on incorporating these recommended changes as well as some changes in the terminology to be consistent with the proposed revisions in the International Lighting Vocabulary and the recently released CIE Standard S 0:12/E:2004 "Standard Method of Assessing the Spectral Quality of Daylight Simulators for Visual Appraisal and Measurement of Colour". The 12th draft of this report is to be sent to TC members for info only, to D2 Editor for editing and for Division ballot.

TC 2-28 Characterization of spectrophotometers (Pointer) DD gave report. The report has been sent for TC ballot. Comments were received that some information was out-of-date, e.g. methods for expressing uncertainties. TCC is revising this document and will send out again for TC ballot within 2 months time.

TC 2-32 Wet horizontal road markings (Hodson) Draft report is almost complete and will be sent to D2 Editor for editing and review before TC ballot.

TC 2-39 Geometric tolerances (Rich). TC report has been sent to D2 Editor who has recommended some editorial changes. It was recommended that TC 1-57 receive a copy of the TC 2-39 report before ballot as it would be useful in standardizing geometry.

TC 2-42 Colorimetry of visual displays (Wall) Last TC meeting was 3 years ago. Work of TC is almost complete but responsibilities of TCC at NPL have changed. A new volunteer from NPL was recommended (Ken Bassey?).

TC 2-44 Vocabulary Matters (Gardner). It was recommended that the membership of this committee remain flexible using small discussion groups.

TC 2-51 Multi-channel spectrometers (Austin) No report.

TC 2-53 Multi-geometry measurements (Roesler) TC met in Leon. It was proposed to change the title and TR. Revised title: "Multigeometry Color Measurement of Gonioapparent Materials and Metric for Evaluation". Revised TR: "Write a technical report with recommendations for the colour measurement and evaluation of the colorimetric properties of gonioapparent materials". These changes were approved. There was considerable discussion about what coordinate system should be used for defining geometries. The members recommended keeping consistency with CIE 15 and TC 2-39 recommendations. TC D said that she would send a letter to ASTM E12.12 on behalf of CIE recommending that they adopt a CIE approach by measuring angles relative to the normal.

TC 2-56 Standard on retroreflectance (Miller) TC met in Leon and reviewed a draft report and terminology. A revised draft will be sent to TC members within a month.

TC 2-57 Revision of CIE S014-2 (*Robertson*) This TC was established at the 2003 D2 meeting in San Diego on the understanding that it would not start work until the current revision of S014-2 was completed. The latest draft of this current revision (CIE DS 014-2.2/E:2004) has been approved by the CIE BA and D2 and has been submitted to all CIE NCs for comments with a deadline of May 15, 2004. Once final approval is achieved, TC 2-57 will begin its work.

Progress of Reporterships

There were two notable reports given at the D2 meeting::

R 2-34 Photon counting (Rastello) NPL will be holding a Workshop on this topic in Sept. 2005. It is hoped to finalize this reportership in 2006.

R 2-35 Uncertainties in Distribution Temperature Determination (*Robertson, Canada*) This reportership was created to resolve an issue raised during the Tokyo 2004 meeting of TC 2-43 Determination of measurement uncertainties in photometry. Reporter prepared a detailed report for Leon meeting which has been posted at D2 web-site. The recommendation of the Reporter is that neither the definition nor the recommended calibration method should be changed. This recommendation was accepted by the TCC of 2-43 and he will put recommendations of *Robertson* in his TC document. It was recommended that this reportership be closed; this was accepted.

Reports of Liaisons

CCPR (Ohno) Draft A report of K1a comparison (spectral irradiance, in the range 250-2500 nm, has been distributed to participants; results show considerable improvement over 1991 comparison. The WG on CMCs held their first meeting with representatives from the RMOs and prepared another list of service categories. The WG on UV Radiometry has carried out a pilot comparison in the vacuum UV and distributed a questionnaire. The CCPR is preparing a draft document on the relationship between the

CIE and the metre convention. The SI brochure is under revision and will include a special chapter on biological and chemical quantities.

CIE D8 (Kravetz) Liaison report was read by Ohno. TCs 8-03 (Guidelines for the evaluation of gamut mapping) and 8-04 (Chromatic adaptation under mixed illumination conditions when comparing soft and hard copy images) have completed their work and issued CIE reports (CIE 156:2004 and CIE 162:2004). TC 8-05 (Communication of Colour Information) is out for ballot; TC 8-08 is considering changing its TR pending a review of algorithms. For complete details of liaison report, see D8 Activity Report. It was noted that D8 is finding it difficult to identify new areas to work in.

ISO/TC6 (*Zwinkels*) Detailed report given and included as Attachment in D2 minutes. Of note: ISO WG (optical properties of paper, pulp, board) will hold their next meeting in June 2005 in Stockholm. Items to be discussed include: new convenor for WG3, new work tem with ISO TC130 on visual appearance properties, and a proposal for an ISO Standard for measurement of D65 brightness resulting in two ISO standards for measuring this quantity.

OIML (Sauter) Sauter reported. There are no issues to be reported re CIE.

IALA (Anderson) Ian Tutt reported. There was an IALA Workshop in Dublin in 2004 that discussed recent developments in light sources and power sources. DD stated that she will write to IALA welcoming their interest in CIE and working towards the development of an effective intensity metric.

IEC TC100 Colour measurement and management in multimedia systems (Rich) Liaison report was read by Ohno. There have been no new developments in IEC standards re measurement of light; they are just in a maintenance phase.

Dissolution of TCs and Reporterships

No TCs were closed in Leon.

Three reporterships were closed: R2-21, R2-27 and R2-35.

Future D2 Meetings

2006: 14-16 June, PTB, Braunschweig in conjunction with CIE Expert Symposium on Measurement Uncertainty

2007 – Beijing, June

2008 - Proposal was received to have joint D1 and D2 meetings in Italy

Proposals for Future D2 Symposia

1) High power and organic LED 2) Pulsed sources and temporal effects

Future directions for measurement R&D

D2 Director feels that the Division needs to be more pro-active and identify measurement issues before they become problems. Some of the areas identified were: 1) measurement of OLEDs; 2) “smart” paper; 3) characterization of fibre-optic equipment; 4) mesoptic range; 6) near-field goniophotometry for characterizing luminaries; 7) hyper-spectral imaging

Canadian Participation in Division 2

Canada has representation on 10 Technical Committees:

TC 2-04	A. Gaertner (NRC)
TC 2-25,	J.C. Zwinkels (<i>Chairman</i> , NRC)
TC 2-28	J.C. Zwinkels, A.R. Robertson (NRC)
TC 2-35	A.R. Robertson
TC 2-39	J.C. Zwinkels, B. Jordan (PAPRICAN)
TC 2-42	S. McFadden (DCIEM), R. Baribeau (NRC)
TC 2-43	A. Gaertner (NRC)
TC 2-47	L.P. Boivin (NRC), B. McArthur (AES)
TC 2-48	L.P. Boivin , R. McArthur
TC 2-57	A.R. Robertson (<i>Chairman</i>), J.C. Zwinkels

One Liaison:

ISO TC6: Paper,Pulp,Board J.C. Zwinkels(NRC)

Two Reporterships:

R2-33,	K, Niall (DCIEM)
R2-35	A.R. Robertson (NRC)



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CIE Division 3

Interior Environment and Lighting Design

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

2005 Activity Report to the Canadian National Committee

Jennifer A. Veitch, Ph.D. – Canadian Delegate
2005-August-25

2005 Division 3 Meeting

The meeting is scheduled to be held September 22, 2005, in conjunction with Lux Europa 2005 in Berlin. Because I will be on maternity leave and will not be able to attend either the Division 3 meeting or the CNC meeting, I have arranged for the USNC delegate, Terry McGowan, to give the presentation about the meeting when the USNC and CNC meet in Cleveland in October.

Current Division 3 Activities

Completed reports and publications

In 2005, I voted on two technical committee reports, and on the Division 3 portion of the International Lighting Vocabulary. The two technical committee ballots were:

- TC 3-30, "Hollow Light Guides", which has been published as CIE 164:2004, "Hollow light guide technology and applications". This TC was chaired by a Canadian, Lorne Whitehead.
- TC 3-33, "Test cases for assessment of accuracy of lighting computer programs". Voting on this document will close on September 22, 2005.

Division 3 produced two CIE publications since the last report (October 2004):

CIE 161:2004: Lighting design methods for obstructed interiors

CIE 164:2004, Hollow light guide technology and applications

Active TCs and Reporterships

There are 14 active technical committees and 10 open reporterships in Division 3. Terms of Reference and current status of the committees are available on the Division 3 web site: I expect that TC 3-30 will be closed as of the 2005 meeting, its work having been completed.

TC	Title	Chairman	Started	End?	Product
3-11	Daylighting calculation methods	M. Navvab		2004	Review
3-19	Scale model photometry for interior lighting	M. Navvab		2004	CD Rom
3-20	Lighting and architecture	H. Kramer	1991	2004	Book
3-25	Coordination and development of the IDMP and its data	D. Dumortier	1991	2004	Web Server
3-30	Hollow light guides	L. Whitehead	1993	2004	Guide
3-32	Validation of algorithms for daylight outdoors	M. Navvab		2004	Review
3-33	Test cases for assessment of accuracy of lighting computer programs	F. Maamari	1997	2004	Guide
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	Y. Uetani	2000	2007	Guide
3-38	Tubular Daylight Guidance Systems	D. Carter	2002	2005	Guide
3-39	Discomfort glare from daylight in buildings	W. Osterhaus	2002	2005	Guide
3-40	Maintenance of indoor lighting systems	L. Bedocs	2004	2005	Guide
3-41	Visual quality of display in museums	E. Ne'eman	2004	2007	Guide

R #	Title	Reporter	Start	End?	Product
3-13	Lighting vocabulary	Y. Koga	2002	2004	Publication
3-15	Lighting standards and recommendations	S. Simos		2004	Review
3-17	Calculation of utilisation factors	R. Topalova	1998	2005	Review
3-18	Thermal environment, outdoor climate and visual preferences	C. Laurentin	1999	2002	Review
3-19	Glare from windows	M. Velds	1999	2002	Review
3-20	The use of satellite images	Y. Koga	1999	2002	Review
3-21	Determination of discomfort glare	L. Bedocs	2004	2005	Review
3-22	Review CIE publication 29.2	H. Kaplan	2004	2005	Review
3-23	Lighting control and energy efficiency	P. Dehoff	2004	2005	Review
3-24	Assessment of overhead glare	T. McGowan	2004	2005	Review

Current Canadian Participation in D3 Technical Committees (July 2005)

TC#	Title	Canadian Members
3-11	Daylighting Calculation Methods	I. Ashdown, J. Love (Members)
3-19	Scale Model Photometry for Interior Lighting	J. Love (Member)
3-30	Hollow Light Guides	B. York; L. Whitehead (Chairman)
3-32	Validation of Algorithms for Daylight Outdoors	J. Love; I. Ashdown (Members)
3-33	Test cases for assessment of accuracy of lighting computer programs	I. Ashdown; C. Reinhart (Members)
3-34	Protocols for Describing Lighting	J. Veitch (Chairman); R. Topalova (Member); D. Smith (Corresponding Member)
3-38	Tubular Daylight Guidance Systems	L. Whitehead (Member)
3-39	Discomfort Glare from Daylight in Buildings	R. Topalova (Member)
R#	Title	Canadian Members
3-17	Calculation of utilization factors	R. Topalova (Reporter)

Other D3 Activities

Divisions 3 and 6 are working together to plan the **Second CIE Expert Symposium on Lighting and Health, which is expected to take place in Ottawa, Ontario, Canada, September 7-8, 2006**. The event is expected to be co-hosted by the National Research Council of Canada's Institute for Research in Construction (NRC-IRC). NRC-IRC's Dr. Jennifer Veitch is a member of the Organizing Committee, and Dr. Guy Newsham will be co-ordinator of local arrangements.

Both Divisions will hold their 2006 meetings in conjunction with this event.

Personal Note

I will be on maternity leave until mid-September 2006 and away from my regular NRC office. However, I will continue to serve as CIE Division 3 delegate, and to vote on matters brought to my attention by e-mail at jennifer.veitch@nrc-cnrc.gc.ca.

————— End —————



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CIE Division 4

Lighting and Signalling for Transport

(no Canadian report received)

The Minutes (Minutes_Leon.pdf) of the CIE Division 4 meeting
held in León, Spain on 2005-May-16,17
may be obtained from the Division 4 section of the CIE website at:

<http://div4.cie.co.at/>

or

http://www.cie.co.at/div4/meetings/Leon/Minutes_Leon.pdf

or at the CNC/CIE website at:

[Minutes_Leon.pdf](#)



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CIE Division 5

Exterior Lighting and Other Applications

From: mtimmings@canlyte.com
Sent: Tuesday, October 25, 2005 07:26
To: arnold.gaertner@nrc-cnrc.gc.ca
Subject: Re: Attendance at CNC/CIE annual meeting?

sorry Arnold I cannot be at ~CIE this year

You can have my proxy if needed

attached are Div 5 minutes from Leone

Update for Canada is I formed a small review committee for TC 5 19, Canada has voted against this publication, in short, we have a superior standard CSA C860, which is also referenced in NRCan Energy Legislation

Martyn

Martyn K. Timmings LC
V.P. Market Development
Canlyte Inc
The Lighting Concept Centre
160 Pears Ave, Toronto, On. Canada M5R3P8

ph 416 960 1400
fax 416 960 3450

CIE DIVISION 5 MEETING 17 May 2005, Leon Spain

1. Meeting called to order at 9:02 AM with the following in attendance:

Nigel Pollard, UK, Director	Harry Kambezidis, Greece, Guest
Tom Lemons, USA, Secretary	Alexey Korobko, Russia, Guest
Mary Crawford, USA, Editor	Jacques Lecocq, France, Member
Jan-Henrik Aúdestad, Norway, Member	Gyula Major, Hungary, Guest
Kelvin Austin, UK, Chair. TC 5-18	Ramon San Martin, Spain, Member
Tuba Bostanci Baskan, Turkey, Guest	Tapns Nurmr, Finland, Guest
Elvo Calixto Burini, Jr., Brazil, Guest	Georgios Paissidis, Greece, Member
Zhong Haicong, China, Guest	Jose Luiz Pimenta, Brazil, Member
Jozsef Horvath, Hungary, Member	Patrick Rombauts, Belgium, Member
Hans J. Jacobsen, Denmark, Guest	Péter Schwarcz, Hungary, TC 5-16
Henri Juslén, Finland, Member	Michael Seidl, Germany, Guest
Kohji Kawakami, Japan, Member	Mujgan Serefhanoglu Sôzen, Turkey
	Petr Žák, Czech Republic, Member

The death of CIE Past President Dr. Mike Marsden, was noted.

2. **Minutes** - The minutes of the 9 September 2004 Division 5 meeting held in Bern, Switzerland were accepted as distributed.
3. **Director's Report** - Since the meeting in Bern, a successful symposium was held in Barcelona, Spain addressing Sky Glow with about 250 present. The draft standard DS015 is still being coordinated with CEN to obtain final acceptance for a joint standard.
4. **Secretary's Report** – A written report was distributed. (Copy available upon request.)
5. **Editor's Report** – The TC 5-19, *Emergency Lighting* report was finalized.
6. **Technical Committee Reports:**

TC 5-11 *Practical Design Guideliens for Sports Lighting Installations for CTV* The final report has been distributed to Division 5 members for their vote which is due by 15 July 2005.

TC 5-13 *Lighting for Exterior Work Areas* The draft standard, DS015, is again being reviewed by CEN to try to obtain a joint standard.

TC 5-16 *Exterior Security Lighting of Private* P. Schwarcz held a committee meeting on 16 May 2005 to review Draft 3 of the report. So far he has only received input from the USA and Japan. Draft 4 will be distributed by October and the Committee will meet in Greece. **MEMBERS NEEDED**

TC 5-18 *Practical Design Guidelines for Exterior Work Areas* Kelvin Austin, UK is proposed as the new chairman of the committee. MEMBERS NEEDED

TC 5-19 *Emergency Lighting* Report is now ready for Division voting.

TC 5-20 *Guide for Sports Lighting* T. Lemons held a committee meeting on 16 May 2005 to review Draft 6. The next draft will be prepared and distributed by the end of the year with the hope to finalize this report before the committee meets in Greece.

TC 5-21 *City Beautification* M Serefhanoglu Sôzen held a committee meeting on 16 May 2005 to review Draft 5 of the report. Consideration is being made to split the report into two parts which will be decided at their next meeting in Berlin in Sept. '05. The proposal is to use the floodlighting data currently in Draft 5 to update CIE Publication # 93 and return the focus of this document back to the issues of City Beautification.

7. Reporter Reports:

R 5-05 *Semicylindrical Illuminance* P. Rombauts will distribute the report in two months. He proposed a committee be established on this subject.

R 5-12 *Lighting and ECO Systems* No report.

R 5-13 *Lighting Controls for Visual Effects* J. Pimenta identified his work to date and indicated that this is an important issue. Further material will be collected and reported at the meeting in Greece.

R 5-14 *Exterior Luminaire Beam Patterns* T. Lemons identified that a report was prepared and e-mailed to Members prior to this meeting. He briefly outlined the information in the report and the recommendation that a committee be established with Scott Davis as chairman to address issues identified in the report. (Copies of report available upon request.)

R 5-15 *Fundamental Aspects of Vision at Night* Report by M. Crawford for D. Crawford that data is being collected and a report will be presented in Greece.

8. Liaison Officers Reports:

IDA M. Crawford reported that a meeting will be held at Yellowstone National Park in September of 2005 on the subject of Lighting and ECO Systems.

CEN See Division Director's Report and the TC 5-13 report.

9. Work Program:

- a. No committees need to be dissolved.
- b. TC 5-18 Proposed that Kelvin Austin, UK, be approved as the new chairman. Approved
- c. Proposal by R 5-14 reporters that a committee on *Exterior Luminaire Beam Patterns* be established with Scott Davis, USA, as chairman. This committee will also review CIE Publication # 43, *Photometry of Floodlights* and make a recommendation about its status. Approved. Committee member volunteers – J. Lecocq, T. Lemons, J. Pimenta and Z. Haicong.
- d. Proposal by P. Rombauts to establish a committee titled *Guidelines for the Use of Semicylindrical Illuminance in Outdoor Applications* with himself as chairman. Approved. Committee member volunteers - J. Lecocq and T. Lemons.
- e. A Reporter, J Horvath, was proposed to review CIE Publication # 94 *Guide for Floodlighting* and recommend at the meeting in Greece about the need to revise the publication. Approved.

10. **Future Directions of Division** – The DD requests the Division 5 Members consider the desirability or otherwise, of combining Divisions 4 and 5; with the work of this combined Division being conducted by several sub-groups or standing committees and subcommittees. This issue will be discussed at a CIE Board Meeting to be held in October '06 after the next Division 5 meeting in Greece so input is requested at or before the Greece meeting.

11. Date and Venue for Future Meetings:

- 2006** The meeting will be in Athens with committee meetings on 18 & 19 September and the Division 5 meeting the morning of 20 September. A conference on “The Urban Nightscape” will follow on 21 – 24 Sept.
- 2007** The quadrennial meeting will be held in Beijing, China starting on 4 July. The Division meetings will be held on 9 to 11 July.
- 2008** Invitation from USA to hold meeting in conjunction with an IDA meeting or the IESNA Roadway Lighting Seminar.
- 2009** Invitation for CIE Mid-Term meeting to be held in Budapest to include combined Divisions 4 & 5 meeting.

12. **Other Business** – None

13. **Adjournment** – The meeting adjourned at 12:50 PM.

Respectively submitted, Thomas M. Lemons, Secretary



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CIE Division 6

Photobiology and Photochemistry

DIVISION 6

PHOTOBIOLOGY AND PHOTOCHEMISTRY

Report to the Canadian National Committee October 27, 2005

Yvon Deslauriers
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Introduction.

The 25th Quadrenium Meeting of Division 6 took place on September 3 in Aix les Bains, France, in conjunction with the European Society for Photobiology 11th Congress.

The Division Terms of Reference are to study and evaluate the effects of optical radiation on biological and photochemical systems (exclusive of vision). A list of TCs and their current status is available on the Division web page: <http://physics.nist.gov/Divisions/Div844/CIE/CIE6/TCs/tcs.html>

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:	Dr. Jean-Pierre Césarini (FR)
Secretary:	Mr. Stephen Wengraitis (USA)
Editor:	Dr. Myron L. Wolbarsht (USA)

Technical Committees that met at the occasion of the Quadrenium Meeting.

TC 6-08 Guidelines for Obtaining Action Spectra.
Chair, David Sliney (USA).

TC 6-20 Phototoxicity in Domestic and Industrial Environments.
Chair: Neil Gibbs (UK).

TC 6-39 UV Radiation at Lighted Environments.
Chair: Kohtaro Kohmoto (Japan).

TC 6-55 Photobiological Safety of LED's

Chair: Werner Horak (Ger).

TC 6-57 Standardization of Terms and Action Spectra for Blue Light and Retinal Thermal Hazard.

Chair: Kohtaro Kohmoto (Japan).

TC 6-58 A Recommendation on Lower Limits for UV Exposure.

Chair: Wim Passchier (NL). TC first meeting (meeting chaired by Frank DeGruijl (NL) in the absence of chairman).

Progress Reports updates from TCC's.

6-01 Actinic Effects of Optical Radiation on Man

Completed. Should be reviewed as much of it has been replaced, or overtaken by more recent advances.

6-03 Photo-kerato-conjunctivitis

Outdated. Dr. Cullen (Can) has performed work that contradicts the report of this TC. He will be asked if would consider a Reportership to update this TC report.

6-08 Guidelines for Obtaining Action Spectra.

TCC: David Sliney (USA). Information on techniques for obtaining action spectra from polychromatic sources, and the effects of bandwidth sampling has been added to draft report. Latest version will be circulated to the TC members for comment and will then begin the approval process at Division and board levels.

6-15 A Computerized Approach to Reflection, Transmission and Absorption Characteristics of the Human Eye.

TCC: D. Jack Lund (USA). Efforts continue. All the data for the report are available and just require some final explanation in the text. ADD Schulmeister is tasked with assisting the chair in bringing this TC to completion.

6-21 Cataractogenesis by Low-Level Exposure to Ambient Ultraviolet Radiation

TCC: David Sliney (USA). Lots of new work and theories in this field. Not all types of cataract are associated with UV. Nuclear cataracts fit environmental data for heat, and animal models support this theory. Still some controversy.

6-22 Terminology and Units for Characterizing Photo synthetically Active Radiation for Plants

Complete.

6-23 Develop Generalized Action Spectra for Plant Responses to Wavebands from 280 to 1 100 nm

TCC: Stephan Flint (USA) Chair has held discussions with several potential committee members but pressure of work has prevented further progress. Chair should receive action spectrum as represented in TC6-01.

6-24 Sunscreen and UVA

TCC: Jean-Pierre Cesarini (FR). Chair has announced in Vienna that he would be unable to work on this TC after December 2005, but would provide the latest draft at that time. Latest existing draft of the report should be acquired. Dr. Uli Osterwalder has offered to complete the report, but as there is much activity in this field he will include information to the end of 2005 and will produce a final draft by June 1st, 2006.

(Note: this TC report was intended as a precursor to TC 6-28).

6-28 Standardization of Sunscreen Testing: Method of UV-A Sunscreen Testing

TCC: Jean-Pierre Cesarini (FR). See comment on 6-24. There has been much action on this subject in the past year. There is now a DIN standard and COLIPA are developing a compromise method of testing between the DIN and French (l'Oréal) methods. There are also talks in progress between COLIPA and CTFA. Dr. Uli Osterwalder has agreed to complete this Standard, but only when 6-24 is complete, and when current negotiations within the industry are completed.

6-29 UV Protection and Clothing

TCC: Peter Gies (Australia). This TC has been successful in balloting its report and the TCC is addressing the final comments from the Board.

6-31 Immediate Pigment Darkening

TCC: Jean-Pierre Cesarini (FR). No updates since 2004. Dr. David Sliney reports that the draft looks complete and suggests circulating the existing document to the TC, with the approval of the retiring TCC. In case of numerous comments to deal with, a TC member will be asked to deal with them.

6-32 Action Spectrum for Photocarcinogenesis (Non-melanoma Skin Cancers)

TCC: P. Donald Forbes (USA). Draft standard received BA and Division approval. Sent to NC for comments in April 2005.

6-33 Photoimmunological Effects Mediated Through the Skin

TCC: Edward C. de Fabo (USA). Effort is moving forward.

6-36 UV Protective Materials Used in Shading

TCC: van Tonder (S.A.). Chair hopes to continue with the TC effort on completion of a major measurement campaign. It is suggested that the existing draft be circulated amongst TC members.

6-37 Light and Retinal Disease

TCC: David Sliney (USA). Draft report exists but the subject has become controversial with two key members of the TC in disagreement.

6-42 Lighting Aspects for Plant Growth in Controlled Environments

TCC: Harald Seidlitz (GER). A group of scientists met to discuss aspects of controlled environments for plant research. The group agreed that there was a need to establish a competence center in this area. Information on the competence center will be distributed as it became available.

6-43 UV Water Disinfection

TCC: Alexander Cabaj (Austria). TC met in Vienna in 2004 when the TCC expected to circulate a draft. No news or response to queries since. ADD Schulmeister is tasked to follow this up.

6-44 Illuminators for Treatment of Infant Hyperbilirubinemia.

TCC: Myron L. Wolbarsht (USA). No recent updates. It is suggested that help may be needed to complete this effort. It is suggested that the TCC be asked for any existing draft.

6-45 Optical Radiation Hazard Measurements in the Work Space

TCC: Robert Angelo (GER). Clearance has recently been received to use information from a European document as source material in the report.

6-46 Standard Action Spectrum for UV Disinfection

TCC: Petra Rettberg (GER). No recent updates. Dr Sliney offering to obtain an update.

6-47 Photobiological Safety of Lamps and Lamp Systems

TCC: Rolf Bergman (USA). Completed. Needs reactivation for revision (all Standards require regular review). Chair is prepared to undertake the review.

6-48 Typical Minimal Erythema Doses

TCC: Janusz Beer (USA) Work progressing. TC's database continues to expand, combining US and French data for different racial and ethnic groups. Korean and Polish also being investigated.

6-49 Infrared Cataract

TCC: Myron L. Wolbarsht (USA). No recent updates. Chair may require assistance. TC members be asked if any of them are prepared to move forward with the report.

6-50 Photodegradation of Pharmaceuticals

TCC: Steven Baertschii (USA). Chair reports that efforts are on-going with a recent review of source material from CIE.

6-51 Standardized Solar Simulator Spectral Irradiance Distribution for Sunscreen Testing

TCC: Robert Sayre (USA). There has been much recent activity in this area. Chair has been strongly involved in a study of the validity of action spectra with respect to the possible effects of stray light. A meeting on this subject is planned for late September in Little Rock.

6-52 Proper Measurement of Passive UV Air Disinfection Sources

TCC: Richard Vincent (USA). Chair reports this TC will be delayed as he is concentrating on TC 6-59.

6-53 Personal Dosimetry for UV Radiation

TCC: Gerda Horneck (GER). No recent updates. Further efforts would be made to contact the TCC.

6-54 Standardised Action Spectrum for Vitamin D Synthesis in Human Skin

TCC: Michael Holick (USA). Final draft almost ready for circulation to TC. The TC Report is urgent as there is much interest in this field at present, and it is also important for TC 6-58.

6-55 Light Emitting Diodes

TCC: Werner Horak (GER). There has been much activity in the past year. A revised draft was circulated in April. An immediate meeting was held with IEC representatives and good progress was made. Some differences in opinion exist. Items to be clarified by ICNIRP were identified. Chair has also provided input to TC 2-58. (This TC met in Aix les Bains.)

6-56 Infrared Warming Cabins

TCC: Jan Stolwijk (USA). Chair is concerned that there is little interest in this TC from the Health Authorities. Industry-only interests could bias the TC. Some members are offering to acquire the present report draft and review it in light of ICNIRP statement covering risks and then decide whether to continue or abandon the TC. (This TC met in Aix les Bains.)

6-59 UVC Photocarcinogenesis Risks from Germicidal Lamps

Chair has recently taken over this TC and has been in discussion with TC members.

Proposals for Dissolution of TCs and Reporterships

No TCs or Reporterships were proposed for dissolution, but there has been no known action or response from the following TCs: 6-42, 6-46, 6-49, 6-53, 6-56. Unless this situation changes, these TCs will be proposed for dissolution at the next D6 meeting.

Proposals for New TCs and Reporterships

The following TC proposal was approved by the assembly in Aix. TCC: P. Donald Forbes (USA). "Spectral Weighting of Ultraviolet Radiation from Solar Surrogate sources" The terms of reference are to prepare a document intended to provide health research scientists with a concise reference for estimating the risk associated with exposure to various levels of radiation from solar surrogate sources. The first phase will investigate data related to the xenon long-arc lamp, representing both

ideal and realistic operating conditions. The document will provide tables of irradiances, tables of established weighting functions for several photobiological effects, and tables and charts of photobiologically effective irradiances. Similarly subsequent phases will evaluate, tabulate and chart data from other solar surrogate devices of interest to investigators in research and testing laboratories. The committee will not be responsible for developing criteria or standards for specific applications (such as sunscreen testing with "solar simulators", which is the responsibility of TC6-51).

The TC proposed in Vienna on "Light effects on Xeroderma Pigmentosum" was approved at Division level but due to some miscommunication, the Chair and Terms of Reference have not yet been provided for Board Approval. Once the required information is provided the approval process will proceed.

It is suggested that it would be useful to form a reportship or otherwise update the work of TC6-03, Photo-kerato-conjunctivitis.

A TC on the "Effects of dynamic and stereo visual images on human health" has been proposed within Division 1 and overlaps with the mandate of D6. Directors of D1 and D6 have discussed this TC before the Leon meeting and it was agreed that D1 should first approve it and put it before the Board. The TC was approved at both levels, but with a Board recommendation that it should have strong representation from D6 within the TC and / or be a joint TC. D6 has agreed with this condition and approved a joint TC.

Canadian members and chairs of D6 Technical Committees

TC 6-11 J.A. Veitch (Chair)

TC 6-49 A.P. Cullen

TC 6-54 F.H. Glorieux

TC 6-55 J.D.Y. Deslauriers

TC6-59 P. Reinhardt (proposed)

Future D6 Meetings

2006: Two venues are suggested:

- In conjunction with the American Society for Photobiology Meeting, July 8-12, 2006, San Juan, Puerto Rico (an invitation to join this meeting has been extended by the organiser, Frances Noonan).
- In conjunction with the Division 4 Light and Health Symposium, September 7-8, 2006, Ottawa, Canada.

2007: In conjunction with the CIE Quadrennium Meeting in Beijing.



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CIE Division 8

Image Technology

The CIE Division 8 “Image Technology” and its Activities in 2004/2005

Report to the CNC-CIE, 29 October , 2005

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1- Highlights

The main events that occurred during this reporting period are:

- A reportership R8-06 Results of CIECAM02 has been established.
- TC8-04 published its report *Chromatic Adaptation Under Mixed Illumination Condition when Comparing Softcopy and Hardcopy Images* and will be closed.
- TC8-05 has published its report *Criteria for the Evaluation of Extended-Gamut Colour Encodings* and will be closed.
- The report of Reportership 8-05 *The Effects of Fluorescence in the Characterization of Imaging Media*, by Dr. Danny Rich), has been published.
- NC members have been pooled for the replacement of Todd Newman as Division 8 director. Candidates were Michael Stokes and Sabine Susstrunk. Results will be given at the division meeting, and recommendations will be issued to the CIE board of directors.

The CIE Division 8 Image Technology will be holding its division meeting on November 12 at the upcoming Color Imaging Conference (CIC-05) in Scottsdale.

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	Todd Newman
Associate Directors	Dr. Noboru Ohta (reporters)
Secretary of Division	David McDowell
Editor of Division	Dr. Mike Pointer

2.2 Official Division Members

CIE Division 8 has 36 member countries, of which 19 have designated representative. Canadian Member: Réjean Baribeau

2.3 Liaisons

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

CIE Division 1 (Michael Pointer)
CIE Division 2 (Y. Ohno)
AIC - Association Internationale de la Couleur
ISO/TC36: Cinematography
ISO/TC38/SC1: Textiles: Colour Fastness & Measurement
ISC/TC42: Photography (Mike Pointer)
ISO/TC61/SC5/WG1:
ISO/TC159/SC4/WG2: Ergonomics/Sign & Contr/VDU Requirements
ISO/TC187: Colour Notations
ISO/TC6/WG3: Paper Board and Pulp - Optical Properties
ISO/TC130: Graphic Technology(Danny Rich)
ISO/IEC/JTAG2:Joint Technical Advisory Group (JTAG) 2 for Imagery(Tim Kohler)
ICC -- International Colour Consortium (Tim Kohler)
CCPR - Comité Consultatif de Photométrie et Radiométrie,
BIPM
IEC/TC100 Multimedia Equipment and (Danny Rich)
ASTM/E12 Color and Appearance (Mike Pointer)
JTC1/SC28 (Klaus Richter)

2.4 Publications from Division 8

None.

2.5 Technical Reports

None.

2.6 Technical Committees

TC8-01: Colour Appearance Modeling for Colour Management Applications –to be closed
TC8-02: Colour Difference Evaluation in Images
TC8-03: Gamut Mapping – to be closed
TC8-04: Adaptation under Mixed Illumination Conditions
TC8-05: Communication of Colour Information
TC8-06: Image Technology Vocabulary
TC8-07: Multispectral Imaging
TC8-08: Spatial Appearance Models

2.7 Reporterships

R8-01 Reportership on Grading of Color Measurement Equipment (Y. Ohno)-closed

R8-02 Reportership of Fluorescence (C. McCamy) –closed.

R8-03 Reportership on Potential CIE and IEC/TC100/PT61966 Interactions (H. Ikeda)-closed

R8-04 Reportership on the Effects of Fluorescence in the Characterization of Imaging Media. (D. Rich)-closed

R8-05 Reportership on Image Appearance (M. Fairchild)

R8-06 Reportership on Results of CIECAM02 (Nathan Moroney)

3- Technical Committees work in progress

TC8-01: Colour Appearance Modeling for Colour Management Applications

Terms of Reference:

To study, develop, and recommend a colour appearance model based on CIECAM97s for use in digital colour management and to develop clear usage guidelines for common applications. Consideration is to be given to colour and engineering requirements for open colour management systems.

Chair: Nathan Moroney

Web site: <http://www.colour.org/tc8-01/>

The technical report entitled *Colour Appearance Models for Colour Management systems* has been published (CIE 159:2004). This document outlines a specific colour appearance model, CIECAM02, which may be useful for colour management applications. The model is based on CIECAM97s and consists of a chromatic adaptation transform and equations for computing a set of perceptual attribute correlates. This committee is now closed. A reportership, R-06 Results of CIECAM02, has been established and assigned to Nathan Moroney.

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 committee had been examining formulas for including spatial aspects of colour difference evaluation. Having resolved differences between these formulas, they were ready to begin the final draft of their report. TC8-02 was to hold a meeting at CIC-04 to review the latest draft of the document, which will be presented at the Division 8 general meeting, Nov. 12 2005.

TC8-03: Gamut Mapping

Terms of Reference:

To study, develop and recommend an optimal solution for cross-device and cross-media image reproduction. This solution will provide a standard procedure to calculate the colour gamut of an image, an imaging system, or its components, and either one algorithm, or a set of algorithms and rules for use in specific applications.

Chair: Jan Morovic

Web site: <http://www.colour.org/tc8-03/>

A technical report entitled *Guidelines for the Evaluation of Gamut Mapping Algorithms* has been published (CIE 156:2004). This technical report provides guidelines for the evaluation of the cross-device and cross-

media colour image reproduction performance of gamut mapping algorithms (GMAs). The guidelines cover numerous aspects of GMA evaluation including test images, media, viewing conditions, measurement, gamut boundary calculation, gamut mapping algorithms, colour spaces and experimental method. Also provided are example workflows that show how the general principles are applied and a checklist for determining compliance with the guidelines. The results of GMA evaluation carried out in accordance with these guidelines will then serve as the basis for recommending either one gamut mapping algorithm, or a set of algorithms and rules for use in specific applications.

This technical committee will be closed.

TC8-04: Adaptation under Mixed Illumination Conditions

Terms of Reference:

To investigate the state of adaptation of the visual system when comparing soft-copy images on self-luminous displays and hard copy images viewed under various ambient lighting conditions.

Chair: Naoya Katoh

Web site: <http://www.colour.org/tc8-04/>

This TC has published its final report *Chromatic Adaptation Under Mixed Illumination Condition when Comparing Softcopy and Hardcopy Images* CIE 162:2004.

Summary:

The chromatic adaptation transforms (CATs) used in most colour appearance models (CAMs) assume that observers are fully adapted to a given set of viewing conditions. Unfortunately, the condition of complete chromatic adaptation usually does not occur in the consumer market and in more casual industrial use. Instead, these users tend to view softcopy in a room with sufficient ambient illumination to allow comfortable viewing and examination of hardcopy imaging. Further, users often desire to compare hardcopy and softcopy images using rapid successive binocular observations. The focus of this report is to determine how colour imaging experts can best accommodate the desires and practices of these more casual observers. It shows that accounting for mixed and incomplete chromatic adaptation produces more accurate results in colour appearance than not accounting for them. It includes a mathematical model for chromatic adaptation and provides appropriate parameters for the chromatic adaptation model under such viewing conditions.

This TC is closed.

TC8-05: Communication of Colour Information

Terms of Reference:

To standardize a minimal set of techniques that enable unambiguous and efficient communication of the colour information in images. Two fundamental approaches will be addressed:

- The association with the image data of additional data that describes the colour space of the image data.
- The representation of the image data in a standard colour space.

The standard will also define a minimal set of standard colour spaces that addresses a wide range of imaging applications. Whenever possible, existing standard colour spaces will be used in preference to creating new ones.

Chair: Rob Buckley

Web site: <http://www.colour.org/tc8-05/>

The technical report CIE 168:2005 *Criteria for the Evaluation of Extended-Gamut Color Encodings* has been published. The CIE TC 8-05 terms of reference include defining a "minimal set of standard colour spaces that addresses a wide range of imaging applications". One set of applications that was identified by the committee required the use of extended-gamut colour encodings. This document

defines a set of objective metrics for evaluating the characteristics of output-referred extended-gamut colour encodings. Detailed metrics have been developed to evaluate a number of important attributes of extended-gamut colour encodings. These criteria include:

- gamut volume characteristics,
- colour quantization characteristics,
- hue constancy when applying non-linear tone scale modifications to RGB colour values,
- complexity of transformation required to and from typical standard spaces (sRGB, ICC PCS, etc.).

The relative importance of the individual metrics will vary on an application-by-application basis. As a result, the committee concluded that the actual evaluation of candidate colour encodings for use in particular applications should be left to other standards bodies that are more closely aligned with the relevant industry segments, and therefore would be better able to define the appropriate application-dependent requirements. This document defines a set of objective metrics for evaluating the characteristics of output-referred extended-gamut colour encodings. Detailed metrics have been developed to evaluate a number of important attributes of extended-gamut encodings, including gamut volume characteristics, colour quantization characteristics, hue constancy when applying non-linear tone scale modifications to RGB colour values, and complexity of transformations required to and from typical standard spaces.

The committee will be closed.

TC8-06: Image Technology Vocabulary

Terms of Reference:

To liaise with TC7-06 (International Lighting Vocabulary) and collate definitions of terms associated with image technology.

Chair: Janos D. Schanda

Web site: <http://www.colour.org/tc8-06/>

TC 8-06 has completed its work in preparing the Division 8 inputs (terms and definitions on imaging) for the International Lighting Vocabulary update.

TC8-07: Multispectral Imaging (CIE approval pending)

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. Patrick Herzog (P.Herzog@color-aixperts.de)

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.

The TC had its first meeting in November 2002. In particular, it has been found that that the focus should be on the visible range of the spectrum, while extensions into the near IR and UV should not be excluded. It was also noted that multi-spectral imaging covers multi-spectral image acquisition, multi-spectral image encoding, multi-spectral images and multi-spectral image reproduction systems such as multi-primaries displays and spectral printers.

During this reviewing period, the committee has been active discussing file formats for sharing multispectral colour information. JPEG 2000, BIIF (ISO/IEC 12087-5,NITFS), TIFF (various forms), open EXR, MUSP etc. were considered. Also a new organization has established a web site: <http://www.multispectral.org>. Last meeting was April 8,2004 Aachen Germany

TC8-08: Spatial Appearance Models (CIE approval pending)

4- Reporterships

R8-01 Reportership on Grading of Color Measurement Equipment

(Y. Ohno)

Div. 8 members voted unanimously for the termination to this reportership, as it was felt that it had not resulted in any tangible results and, consequently, did not appear to be needed at this time.

R8-02 Reportership on Fluorescence

C McCamy (USA)

Terms of Reference

To report annually on problems involving fluorescence in image technology, activities in the standards bodies and publications that bear on fluorescence problems, and to recommend the formation of a technical committee if such activity appears desirable.

This reportership is now closed.

R8-03 Reportership on potential CIE and IEC/TC100/PT61966 interactions

H Ikeda (Japan)

Terms of Reference

To produce a report on how CIE Division 8 should interact with IEC TC100 PT61966. End Date: March 2000.

Div. 8 members voted unanimously for the termination to this reportership, as it was felt that it had not resulted in any tangible results and, consequently, did not appear to be needed at this time.

R8-04 Reportership on the Effects of Fluorescence in the Characterization of Imaging Media.

D. Rich (USA)

The reporter was to define the issues and report on what the terms of reference and working program should be for possibly a Division 2 TC. His draft report *The Effects of Fluorescence in the Characterization of Imaging Media* has been published as CIE 163:2004.

R8-05 Reportership on Image Appearance.

(pending concurrence from Dr 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

R8-06 Reportership on Results of CIECAM02.

Nathan Moroney (USA)

A Users and Developers' type meeting will be held at the CIC-04 conference.

5- Canadian Participation

Alastair Reed (Cymbolic Sciences)

TC8-05

PRESS RELEASE October 2005

CRITERIA FOR THE EVALUATION OF EXTENDED-GAMUT COLOUR ENCODINGS

CIE 168:2005

ISBN 3 901 906 42 8

The CIE TC 8-05 terms of reference include defining a "minimal set of standard colour spaces that addresses a wide range of imaging applications". One set of applications that was identified by the committee required the use of extended-gamut colour encodings. This document defines a set of objective metrics for evaluating the characteristics of output-referred extended-gamut colour encodings. Detailed metrics have been developed to evaluate a number of important attributes of extended-gamut colour encodings. These criteria include:

- gamut volume characteristics,
- colour quantization characteristics,
- hue constancy when applying non-linear tone scale modifications to RGB colour values,
- complexity of transformation required to and from typical standard spaces (sRGB, ICC PCS, etc.).

The relative importance of the individual metrics will vary on an application-by-application basis. As a result, the committee concluded that the actual evaluation of candidate colour encodings for use in particular applications should be left to other standards bodies that are more closely aligned with the relevant industry segments, and therefore would be better able to define the appropriate application-dependent requirements.

The report is written in English, with a short summary in French and German. It consists of 68 pages with 61 figures and 18 tables, and is readily available at the CIE National Committees and via the website of the Central Bureau of the CIE (www.cie.co.at).

The price of this publication is EUR 72,-- (Members of the CIE National Committees get 50% discount).