Pre-TC meeting of the CIE Common Colour Appearance Focus Group (R8-13)

San Diego, USA
Tuesday 8th September 2016 (13:00 – 1400 PST)
Chairs: W Craig Revie (GB), Yasuki Yamauchi (JP)

This face-to-face meeting of the focus group with an interest in the topic of Common Colour Appearance was held in anticipation of the establishment of a CIE Technical Committee to study this topic. This was an open meeting and everyone was invited to attend.

Attendees

Attendee	Country	Affiliation	Wants to be TC member
Po-Chieh Hung	JP	Konica Minolta	No
Yasunari Kishimoto	JP	Fuji Xerox	No
Craig Revie	UK	Fujifilm	Yes
Yasuki Yamauchi	JP	Yamagata University	Yes
Danny Rich	US	Sun Chemical	No
Markus Barbieri	IT	Barbieri Electronic	No
Choon-Woo Kim	KO	Inha University	Yes
Christine Fernandez-Maloigne	FR	University of Poitier	Yes
Max Derhak	US	Onyx Graphics	Yes
Mike Murdoch	US	RIT MCSL	No
Harold Boll	US	EFI	No
Eric Walowit	US	-	No
Wei-Chun Hung	TW	NTUST, Taiwan	No
Pei-Li Sun	TW	NTUST, Taiwan	No
Kaida Xiao	UK	University of Leeds	No
Qianqion Pan	UK	University of Leeds	Yes
Jean-Baptiste Thonas	NO	NTNU, Gjøvik, Norway	
Robert Wanat	US	Dolby Labs	
Ben Bodner	US	RIT MCSL	
Ellen Carter	US	Konica Minolta	
Michael Brill	US	Datacolor	Yes
GoToMeeting			
Akihiro Ito	JP	Fuji Xerox	
Elena Fedorovskaya	US	RIT	Yes
Gregory High	NO	NTNU, Gjøvik, Norway	Yes
Jürgen Seitz	DE	GMG	Yes
Makoto Matsuki	JP	-	
Peter Nüssbaum	No	NTNU, Gjøvik, Norway	Yes

Agenda

Attendees introduced themselves and Craig Revie reviewed the agenda:

- General problem statement (R8-13 Common Colour Appearance)
- Informal 'Focus Group' on LinkedIn
- Focus for the proposed CIE Technical Committee

- Planned research projects
- Discussion

General problem statement (R8-13 Common Colour Appearance)

Craig presented an overview of the general concept of Consistent Colour Appearance and indicated a number of areas where this concept could be useful including: Characterised Reference Printing Conditions (ISO/PAS 15339), Flexible print (RGB) workflow, Brand management, Consistency across different print media and Consistency across displays (UHDTV). Details of these aspects of Consistent Colour Appearance are given in the CIE report R8-13 'Consistent colour appearance' which is shortly to be posted for reference by CIE members. As is usual for CIE reports of this kind, this report will not be made generally available for public review but will be uploaded using CIE COLTOOL.

Informal 'Focus Group' on LinkedIn

Much of the input for the R8-13 report was discussed in a 'CIE Focus Group' which was based on an idea by Michael Pointer during the CIE meeting in Manchester. The focus group has around 50 members and over the period of the reportership a number of topics were discussed by email and two teleconferences were held. Craig reported that there had been good participation in these teleconferences and that the presentations and meeting recordings are available from the ICC web site (http://www.color.org/resources/commonappearance.xalter).

Focus for the proposed CIE Technical Committee

Following the reportership a CIE Technical Committee has been proposed. During the planning stage for this TC it was felt that the general problem of Consistent Colour Appearance would be too large to address in the time allowed for a Technical Committee (maximum of 4 years with a possible 4 years extension). The group selected the most pressing of these problems which is the assessment of prints made on digital presses when RGB workflow is used. Many users would like to be able to use the full gamut of their digital presses but do not currently have a framework which allows them to do so. One important aspect is a measure for Consistent Colour Appearance; such a measure would allow print buyers and printers to agree the intended result without having to revert to colorimetric proofs (the only option available today).

Comments

Jürgen Seitz commented that it will be important to control the viewing environment for hard copy proofs as well as their accurate reproduction. GMG has significant experience of accurate proofing solutions and their input to the work of the Technical Committee will be very welcome.

Planned research projects

Four research projects have been planned in conjunction with the Technical Committee in the following institutes: NTNU, Gjøvik, Norway; Yamagata University, Japan; RIT, USA; Fogra, Munich, Germany. Other research groups have expressed an interest but have not yet decided to join this activity.

NTNU, Gjøvik, Norway: Greg High shared his initial ideas for his PhD project. Greg indicated that the description would be similar to that already outlined. Greg has a background in graphic arts and print production. He will build a model for consistent colour appearance for both the print and display application. He will look at the way in which observers relate to sets of prints and how observers look for consistency of colour appearance. Hope to create a metric for consistency in colour appearance, perhaps related to gamut constraints and image differences. Greg's project will be for 2 years.

Yamagata University, Japan: Yasuki Yamauchi described the work completed and published by one of his students and planned future research. Yamauchi-san described the concept of trend line for colour consistency which was developed using colour patches. This work will be extended to the assessment of images. Yamauchi-san's student presented a poster at CIE in Manchester.

RIT, USA: Elena Fedorovskaya explained the proposed research at RIT. The work will focus on the effect of neutrality and tone reproduction of CRPC on Consistent Colour Appearance. Understanding why these CRPCs produce consistent colour appearance may provide some insight as to how this can be achieved on digital printers.

Fogra, Munich, Germany: no one from Fogra attended the CIE meeting but Craig Revie described the work completed by this group and their research plans. In their previous 'pilot' project they assessed coloured patches and now plan to extend their work to include assessment of images. Their project is planned to start early next year.

Technical Committee Proposal

Craig reviewed the title, terms of reference, scope of the TC and initial members. Po-Chieh Hung reminded those prospective members

Discussion

Korean comment: the title should reflect that images will be assessed. Craig said that the terms of reference already reflect this aspect and that it may not be necessary in the title, it is also possible that an earlier draft was reviewed. Danny Rich indicated that the title and scope are now very clear.

Wei-Chun Hung: care needs to be taken that printers do not automatically enhance prints.

Max Derhak: the work of this TC is more about the consistency between reproductions than between the original display image and the reproduction itself. Craig indicated that for the practical purpose we would like to be able to assess consistency between the display image and the reproductions but that there are additional aspects which make display-to-print comparison more complicated. For the scope of the work of the TC we include a 'reference reproduction' but for the work of the TC to be useful in practice we will need to find a way to include consistent colour appearance between the RGB display image and a printed reference.