

## W1.1 2005 - 006

### Color Rendition Teleconference, February 2, 2005

Present: Susan, Frans, Bill, Óscar, Ann, Helen

#### Agenda:

- 1) IQSP Report
- 2) The Color Fidelity Experiment - next steps including selecting an image set

#### Discussion:

- 1) Susan reported on the IQSP conference that occurred in San Jose on January 19-20. Our presentation entitled "Update on the INCITS W1.1 Standard for Evaluating the Color Rendition of Printing Systems", which was given to update a broader community on our efforts, went fairly well. The few questions that were posed had to do with the complexity of the problem of assessing both the color accuracy and color preference issues simultaneously. (There was concern expressed by Andrew Watson of NASA Ames Research regarding creating a standard for preference.)

Note: We may want to consider having two metrics; one that would cover pleasing color appearance and one covering the situation of color accuracy where a reference exists. These could be thought of as metric analogues of the printer's perceptual and colorimetric intents, respectively. I believe that we discussed having two metrics early on; a photographic metric and a graphics metric.

Discussion took place among the committee members present at the conference (Susan, Frans, Óscar, and Eric) regarding the path forward the Color Fidelity attribute, which brings us to the next agenda item.

- 2) The discussion then centered on how to proceed with the Color Fidelity effort. At a recent meeting we had agreed to conduct another experiment with a larger set of color renditions where:
  - a. One or two (matte and gloss) substrates will be used. If two are used, there would be a separate experiment for each substrate
  - b. One printer be used to generate all of the images
  - c. A larger set of renditions would be made by making controlled adjustments to each scene

Susan suggested that the experiment be conducted as a ruler experiment as described by ISO 20462 and as recommended by the overall procedures that our *ad hoc* committee is intended to follow as described in *ISO/IEC 19751 Part I – Overview, Procedure and Common Methods*. This would involve rating the various color renditions using an image ruler where the ruler prints varied in sharpness, an image attribute considered to be reasonably one-dimensional that can be fairly well defined in terms of JND's of image quality. Rating the prints relative to such a ruler would directly produce a Color Fidelity scale in terms of JND's, which is required by the Standard. To generate confidence in this procedure, it is suggested that a rank ordering test be conducted simultaneously.

To minimize the work for this next experiment, it was suggested that we use the four images included in ISO 20462 so that rulers will not need to be constructed. Frans reported that the Standard along with rulers may be obtained at the I3A website [http://www.i3a.org/downloads\\_pay.html](http://www.i3a.org/downloads_pay.html) > for about \$100 (US).

Frans and Óscar also reported that the files for the original scenes contained on the rulers were not included with the Standard. Susan is to investigate the official procedure for obtaining these files. When the original files are obtained, we can create a variety of color renditions for printing on a single printer. The discussion of how to create variations was limited, though Ann did mention that, with a single printer, some of the issues experienced in the first experiment with tone scale being confounded with Color Fidelity may be avoided. There was discussion of which printer should be selected for printing all of the images with the Durst Lambda and the Approval system being suggested.

With the scenes contained on the rulers being used for the next body of experimentation, discussion of possible images for future work was postponed. After we complete the color scaling comparison between the sharpness ruler method and rank ordering, we will revisit the issue of final target selection.

Frans questioned where the effort on Color Quantization stood and suggested that since it should be easier to develop, the work on it should continue, maybe by looking at Serpentine targets constructed using colors other than monochrome gray.

#### Actions:

- Each to consider candidate printers for the Color Fidelity work and possible variations to be made to each original image to generate a larger, more controlled set of renditions
- Susan to determine:
  - how to officially obtain the original image files for the ruler scenes
  - if the output profile for the printer used to generate the ISO 20462 ruler images is available
  - if the Approval system could be used to generate the images for our experiment and if an output profile is available
- Susan to distribute color quantization data

#### Next Meetings:

- March 2, 2005, 11AM EST
- March 23, 2005