W1.1 Image Quality of Printers NCITS W1.1 2002 – 003
Gloss and Gloss Uniformity
Yee S. Ng, Jan 16, 2002
Ref:

1. NCITS – W1.1 2002-0001 Gloss/Gloss Uniformity ad hoc teleconference meeting notes (1/8/2002 teleconference), Dec 11, 2001.

Gloss/gloss uniformity ad hoc Teleconference Meeting Notes
(1/8/2002 teleconference)

Present: Yee Ng (NexPress, Chair), Eric Schneider (HP), Jeff Wang (NexPress), Maguerite Doyle (Lexmark), Dale Mashtare (Xerox), Ted Bouk (Kodak)
Absent members:
Norm Burningham (HP)

Next Teleconference: Tuesday January 22, 2002 @ 1:30 PM EST

Agenda

1. Review/modify agenda
2. Discuss measurement method and test target definition.
3. Schedule next teleconference

The Gloss/gloss uniformity ad hoc met on 1/8/2002. The ad hoc approved the agenda and report on the progress of the round-robin experiment. The whole team reports on the combined measurement results and analysis for the paper samples that the responsible team has generated (sample gloss for the paper has been measured by all the available instruments by the ad hoc team in the round-robin experiment). The overall result (for all the paper sample tested) supports the observation reported earlier in NCITS-W1.1 2002-0001 that: (1) For 75 degree angle, gloss measurement by different companies (on the ad hoc team) on the same print using gloss meters make by the same manufacturer appears to be agreeing with each other quite well – (small average standard) compare with gloss measurement on the same print using gloss meters made by different manufacturer (BYK, Ihara, Nippon Denshoku). (2) For the other angular measurements (20, 45, 60, 85 degrees), there are consistency of gloss measurement (for each of the 40 gloss steps on the test chart) across the ad hoc team members measurement equipment (all BYK in this case). However, it depends on which paper sample is used, there are inconsistency of result (large scattering of data) across the different measurement angles. Namely, one cannot conclude from the result of one angular measurement to infer to possible result if another angular measurement is used (some paper are consistent and some are not). One can however get to some measurement consistency across companies if the same angular gloss measurement is used. So eventually we may need to reference gloss measurement done at an angular geometry to a common psychophysical scale, so as to remove this limitation. Of course certain guideline (such as within what gloss range, what gloss measurement angle is desired etc). The ad hoc further agreed that the team will assign different group (by gloss measurement angle) to analyze the measurement data from all the papers, so as to understand the gloss variability (for each gloss angle) in each gloss

steps. The assignment is follows: (1) 75 degree – Eric Schneider, (2) 60 degree – Yee Ng/Jeff Wang, (3) 45 degree – Ted Bouk, (4) 20 degree – Dale Mashtare, (5) 85 degree – Maguerite Doyle. After the data analysis, we will be able to answer the measurement tolerance question (when different labs are doing the measurement) at different measurement angle.

The ad hoc also discuss the issue on how to interpret differential gloss. On proposal is to make use of the maximum difference in gloss between any steps in the differential gloss test chart (which cover a wide range of colorant coverage). In this way, it defines the process capability of the printer/media combination independent of test image use. The assumption is if there are two color coverage areas that demonstrate large differential gloss between them, some images (not necessary a particular test target) by consumer can have those two areas adjacent to each other, therefore is relevant from a psychophysical scaling viewpoint. Of course we will need to define a set of test images/paper combination that happens to have a range of gloss differences between two adjacent areas of equivalent size to build the psychophysical scale. The advantage of the approach is this method can define the process capability of the system without the impact of test image dependence. We also feel that in the definition of differential gloss, both the gloss measurement angle and the gloss range may need to be defined. With that view, we don't need to address the question of gloss preference that is application dependent. The ad hoc agreed to explore these issue after we have finished the tolerance study.

Next call-in teleconference: Tuesday, January 22, 2002 @1:30 AM EST

Proposed agenda for January 22, 2002

1. Review/modify agenda
2. Discuss gloss cross-correlation test target results.
3. Schedule next teleconference

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