

W1.1 Image Quality of Printers

W1.1 2003 – 048

Micro-Uniformity

Robert E. Zeman

Aug 1, 2003

Reference: W1.1 2003 – 39

Micro Uniformity Ad-hoc Group Meeting, Aug 1, 2003 1:30PM EDT

(Tele)present: Robert Zeman (Chair, Kodak), Kevin Donohue (Univ. of Kentucky), Dirk Hertel (Polaroid), William Kress (Toshiba)

The agenda for today centered on an open discussion regarding measurement of targets and next steps.

We discussed measurement resolution initially. WK mentioned that the scanner resolution is dependent on the halftone frequencies of the target and aliasing considerations and generally, he scans a small area (for *Micro*uniformity) at 800dpi (1/2 scanner native resolution), and this keeps the file size down. KD, being on both Micro- and MacroUniformity subgroups, prefers to scan the entire 8" x 10" document at 600dpi (native), generating a 30 MB * 3 = 90 MB 8-bit RGB file, which will then be blurred and subsampled for the Macro attributes. DH scans at 1200dpi (native). KD mentioned that he had seen results similar to what P. Kane presented at PICS2000, with "grain energy" in the 0-5cy/mm region, and aliasing at higher frequencies. KD also mentioned that his flatbed scanner had a lowpass structure vs. the drum scanner. DH suggested that the flatbed was in fact measuring at full resolution but then using software to subsample to the requested resolution.

WK mentioned that Matlab Image Processing Toolbox 4.0, newly released, has very robust ICC color transformation routines, allowing use of ICC profiles and A2Bx and B2Ax conversions with high accuracy, equaling the Adobe Color Engine (ACE). He suggested that one no longer needs to use Adobe Photoshop to do these conversions.

We agreed that DH, WK and KD would attempt to measure samples according to the procedures previously outlined in WK's PICS 2003 paper. WK will generate laser printer samples (RGB or CMYK scanner characterization samples plus the uniform field samples), KD inkjet samples and RZ AgX samples, all at L*=60 & 80, and we will mail the samples to the next person after making measurements. This is an early, cursory trial to see how close the measurements come initially. Thus, the L*=40 sample and the CM samples are not being generated for the sake of brevity. Physical mailing addresses are in the SPIE abstract (for 2004), which was emailed to everyone previously, except for DH's, which he will email to us.

Next Teleconference: 1:30PM (EDT), Sept TBD, 2003, Ph: 1-888-590-2286; passcode: 35683#

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