

W1.1 Image Quality of Printers

W1.1 2001 - 056

MicroUniformity

Robert E. Zeman

Oct 26, 2001

Reference: W1.1 2001 – 051

Micro Uniformity Ad-hoc Group Meeting, Oct 26, 2001 1:30PM EDT

(Tele)present: Paul Kane (Kodak), Robert Zeman (Chair, Kodak), George Chiu (Purdue), Bill Kress (Minolta-QMS), Marguerite Doyle (Lexmark)

After ascertaining there were no additional agenda items, the meeting began with a discussion of BK's analysis of PK's banding samples (which were mailed to those who requested them). BK explained his methodology, which was also detailed in a 4-page description emailed to microuniformity participants the day before the meeting. The plots of trend-crossings are interesting and we all agreed to digest the implications of this approach. BK mentioned that rms is also a good predictor of banding intensity. GC requested a slightly more detailed write-up; MD requested the code, and BK stated he would endeavor to comply within a month, given the upcoming conferences.

At this point, MD explained her spectrogram code and described running it on one of Paul's synthetic, electronic images (i.e., not from hardcopy). PK was also able to run the code, but had not yet examined the results. RZ and BK had the program stall at a 'dtrend' command, which MD said could be eliminated without significantly affecting the results. We all promised to look at this approach in greater detail. PK stated that he will submit an analytical approach as well. We will then have three to choose from, and in fact we could carry all three through the psychophysical analysis before making a final decision.

GC described two approaches to rank ordering for the psychophysical testing. One, for example, provides the observer with all the (flat field) samples and asks for them to be ordered. The observer may additionally be asked to provide an 'acceptability' point within the set. A second approach provides the observer with single stimulus samples, which they must judge on some (internal?) scale. GC stated that amplitude and frequency seem to be the parameters to investigate, and that they will be trying something with about 15 observers. Engeldrum's book was mentioned and GC said he has a copy.

BK asked if we could submit/agree on a visual contrast threshold (spatial frequency) function. PK commented that Van Nes & Bouman is frequently used; MD requested that we send each other our recommended functions. BK asked PK if we could eventually obtain more samples closer to and around threshold. PK responded that the original data set was setup deliberately to obtain clear signals and that if the committee thought that the nature/format of the samples was acceptable, more could be provided.

It was requested that RZ call R.Rasmussen about participation.

The following tasks were agreed upon:

1. We will digest BK's analysis, although it may require his further elucidation.
2. BK will provide more details about his approach.
3. GC will run a rank-ordering type psychophysical test to examine the procedure.
4. We will all run MD's spectrogram program and examine it.
5. PK will submit an analytical approach.
6. RZ will call R. Rasmussen.

Next Teleconference: Friday, Nov. 30th, 1:30 EST. Phone number: 1-888-394-5271

Robert E. Zeman
Eastman Kodak Company
1700 Dewey Ave. 1/67/RL
Rochester, NY 14650-1860

Phone: (716)-722-7090
Fax: (716)-588-1999
email: robert.zeman@kodak.com