

W1.1 Image Quality of Printers

W1.1 2001 - 006

MicroUniformity

Robert E. Zeman, January 16, 2001

(No References)

Micro-Uniformity Subgroup Teleconference Meeting Notes

January 16, 2001

(Tele)present: George Chiu (Purdue), Marguerite Doyle (Lexmark), Paul Kane (Kodak), Rene Rasmussen (Xerox), Robert Zeman (Chair, Kodak)

Next Teleconference: Thursday, February 1, 2001 @ 9:00 AM EST

Agenda

1. Introductions
2. Review/modify agenda
3. Discussion of general proposed process
4. Discussion of Microuniformity Sub-Attributes
5. Schedule next teleconference

The first three agenda items were covered quickly with no changes to item 2 or any significant discussion of item 3. We moved on to a discussion of the definition of microuniformity, which raised several comments, such as:

A. "Uniformity" is a 'good' or 'positive' attribute, but historically the opposite (noise, disorder) has been measured. What shall we call this attribute (which then has measurement implications)? G. Chiu commented that uniformity implies a constant mean, and that one observes deviations from that mean, which deviations may be periodic or non-periodic. No consensus was reached.

B. The term "grain" for historical reasons implies 2-dimensional, random, ergodic noise and should not be used here. This was unanimously agreed to.

C. How shall we distinguish "micro" from any other kind of 'uniformity?' Comment was made that 'microuniformity is considered to be almost always visible, whereas macrouniformity defects may not be.'

R. Rasmussen described a visual methodology in which one overlays a test image with a covering sheet containing 6mm circular holes. The holes of this diameter admit only those image attributes relevant to microuniformity. The 6mm size is negotiable. When evaluating screened images, this method penalizes the screen according to its visibility. M. Doyle suggested we look at ISO13660.

P. Kane raised the following question: Should we attempt to define microuniformity in a general fashion to embrace as wide a range of technologies as possible, or should we attempt to define "sub-attributes" first, covering known technologies? The latter approach may speed development of objective metrics, but could unintentionally exclude future technologies.

M. Doyle emailed a **proposed working definition for consideration: Microuniformity attributes, such as graininess and granularity, are high frequency components of uniformity, which can also be random/isolated or periodic.**

Action Items: 1. R. Rasmussen agreed to look at notes in his possession concerning difficulties encountered when using the 6mm aperture evaluation technique. 2. M. Doyle agreed to look for ISO13660. 3. Review pertinent literature and send citations and/or comments to group members (all).

Next Teleconference: Thursday, February 1, 2001 @ 9:00 AM EST

Proposed Agenda for Feb 1, 2001

1. Review/modify agenda
2. Review action items
3. Discussion of working definition

4. Discussion of name of attribute
5. Schedule next conference

--

Robert E. Zeman
Eastman Kodak Company
1700 Dewey Ave. 1/67/RL
Rochester, NY 15640-1860

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