

IPA Proofing Round UP 2009

Procedures and protocol

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IPA Proofing RoundUP 2009 – Procedures and protocol V1

January 12, 2009

<http://www.ipa.org/2009-ipa-technical-conference>

Document name: IPA_Proofing_round_up_2009_V1.doc
Date: January 12, 2009
Author: Martin Habekost/Larry Warter
Revision history: Version 1

Document name: IPA_Proofing_round_up_2009_V1A_ASEdit.doc
Date: January xx, 2009
Authors: Martin Habekost/Larry Warter
Revision history: Version 2
Changes: Received and incorporated written comments from Abhay Sharma and Steve Bonoff

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1. Introduction

The IPA Proofing RoundUP has been part of the IPA Technical Conference since 2001, excluding the 2008 conference. The procedure of the Proofing RoundUP has been refined over the years and went from visual tweaking by knowledgeable operators to proofing by the numbers as was demonstrated at the 2006 technical conference.

The 2006 results were ground breaking in that it demonstrated, for the first time, vendors were able to produce proofs within industry tolerances for visual match using just color management numerical techniques. In 2007 Proofing RoundUP vendors and users again submitted proofs of the digital test file prior to the conference. The vendors had no difficulties in achieving a very close match to the reference file by having an average ΔE of 1.01 from the target values, while the users had a surprising low average ΔE of only 2.21 from the target values. Since this appeared to confirm that the industry was fully capable of properly using proofing systems, the Proofing RoundUP was eliminated in 2008. But, anecdotal reports from users at the conference indicated that actual practice was still far from these potential results, and the RoundUP has been re-instituted for 2009.

Since the suppliers and users are still able to match the reference printing conditions it is necessary to focus on the actual state of proofing in terms of match to the reference printing conditions that is used in everyday business. As suppliers are able to routinely match characterization data, it is now of interest to explore other issues relating to color proofing, such as the ease of use of the ADS, the ability of users to achieve the same results as the experts, and the status of proofs being supplied by commercial proof providers, etc.

At the 2007 IPA Technical Conference a test was also done in regards to the ability of proofing systems to convey Pantone® spot colors. The proofs were compared to Pantone® color chips. While there was only a visual comparison, results seemed to support user reports that the proofing systems had the ability to match spot colors. There are however conflicting reports that, while initial spot color proofing meets user expectations, repurposing of those colors gives generally poor results. This will be investigated as part of the upcoming RoundUP.

Finally, through the advances of display technology it is now possible to have viable soft proofing solutions. The question is whether they can be held to the same tight tolerances as hard copy proofs. Obviously the controlling software can hold these tolerances, but the LCD display technology, which is the enabler of soft proofing solutions, introduces its own set of challenges. In this iteration of the soft Proofing RoundUP the conference participants will be able to see which colors pose

challenges to soft proofing and also that the type of LCD display being used can contribute to possible color challenges.

2. Procedure(s)

Here is a summary list of the proposed tests for the 2009 RoundUP;

Hard proofing – normal marketplace

- ADS study
- Spot colours
 - o Normal market place
 - o Full gamut and optimized proofs
- User certification

Soft proofing - Demonstrate challenges of certain images

- Comparison of normal and wide gamut displays
- Press sheet to soft proof comparison under GRACoL coated #1 conditions, evaluation by conference participants
- ADS study

2.1 Hard proofing test procedures

2.1.1 “Normal” marketplace results

For the hard proofing tests, proofs will be solicited by print buyers from their print service providers. The proof will be made from a file that looks like a real job, but consists of lesser know SCID images also containing the IDEAlliance proofing target Proofs will be made to match any of the following printing conditions: GRACoL, SWOP3, SWOP5 and SNAP. Three groups of print buyers will be approached: 1. Agency and brand managers from the publishing industry will be asked to supply SWOP proofs; 2. Designers identified through organizations like Print Buyers Online will be asked to supply GRACoL proofs; 3. Agency and brand managers from the newspaper markets will be identified through NAA to supply SNAP proofs. The print buyers from all three groups will be asked to requests proofs made using the above targets from their current print service providers. They will request the proof be made per the appropriate SNAP, GRACoL or SWOP specifications.

The measurement data gathered from the IDEAlliance target on these proofs will be compared against the chosen reference characterization data for those patches. Since this is obviously not a test of the individual systems, the results will only be published as aggregate results by market place and in total. Variation by type of systems will be published if there is a definite trend, but the user identification will not be published.

The benefit to the print buyer will be an assessment of the accuracy of their proof supplier by comparison to industry average as well as to the ideal conditions identified in 2007. To make it worthwhile to the proof suppliers, they will be offered a discount on the Technical Conference registration fees after they have submitted their proofs. Also, if their proofs have met industry tolerances, they will receive a certificate to the effect that they have demonstrated that they meet SNAP/GRACoL/SWOP tolerance in a blind test under production conditions.

An initial trial with limited print buyers, to test the process will be set up in January

2.1.2 Application Data Sheet clarity

Another test for this section of the RoundUP is to study the user friendliness of the Application Data Sheet (ADS) for each of the proofing solutions that will be shown at the Suppliers EXPO at the conference. Members of the IPA team will carry out this test. Vendors will be asked to review their ADS with these members and any conference attendee who wishes to participate (one time review). They should review the ADS process and ask for feedback as to whether the process is straight forward and comprehensible. It will be recommended that they allow members of the team to make a proof under supervision to test the process. The proof will be measured by comparison to the SWOP tolerance and these results and the IPA teams' comments on the ease of using the ADS will be reported.

2.1.3 User certification

Leading up to the conference, users will have the opportunity to submit their own proofs. For this purpose a test file that includes the IT8.7/4 test target will be made available for download from the conference website. The submitted proofs will be judged by the full IT8.7/4, and the data for the IDEAlliance proofing target will be extracted from the IT8.7/4 target to see if those target patches track the full IT8.7/4 target in a representative way. Each user who has submitted a proof will receive a certificate that will compare the proof against ISO 12647-7 tolerances (less restrictive than SWOP).

2.2 Spot color test

2.2.1 “Normal” marketplace results

The thesis for the spot color test is that spot colors are usually incorporated into the image by the creative themselves, and, therefore, the quality of their reproduction is not really challenged until someone else tries to repurpose the image. To test this thesis, real world proofs that contain identified Pantone® colors (within gamut) will be solicited from printers and publishers across the industry. The proof will not be shown publicly, only the proofed Pantone® color patches, the numeric matching results, the marketplaces and a generic product description will be released. For the submission of the proof two questions need to be answered:

- Was a Pantone® color chip provided with the proof?
- Was the proof and the resultant print deemed acceptable by the proof buyer?

To facilitate the visual and measurement aspects of the test, Pantone® will be asked to supply five good swatch books for this test. Measurements of the Pantone colors from these five books will be averaged and used as the color standard for the Pantone® color(s) present on the proof (statistical variation will be noted). The paper white of the proofing paper will also be measured and compared against the paper white of the Pantone® books to determine the base induced ΔE and whether this has much bearing on any variation.

2.2.2 Full gamut and optimized proofs

Vendors and also conference attendees will have the opportunity to submit proofs of an IT8.7/4 target with the system set without any color management to show the full gamut of the proofing device. A second proof that is considered to be an optimized proof constrained for a reference characterization data set can also be submitted for systems where spots proofs are limited to the gamut as defined by the process color solids. Each proof will then be used to measure how many Pantone® colors can be reproduced within the effective gamut of that proof using the Graeme Gill’s Argyll color management system (Gill). Participants will get a certificate that will state the amount (percent) of Pantone colors their proofing system can show.

2.3 Soft proofing

2.3.1 Visualizing the problem

The soft proofing section of the RoundUP is not meant to discover which solution is better than the other one, but to show the challenges certain type of images pose to all of these systems. Specifically, a comparison will be made between normal and wide gamut displays and especially how well they display images containing certain types of saturated cyan colors. The thesis for this section is that monitor proofing systems with wide gamut displays will have essentially the same ability to reproduce GRACoL reference characterization values to the same tolerances as hard copy proofing systems, but lesser monitors will require approximately twice the tolerances to accommodate the colors that can't be reproduced and are clipped back to the monitor gamut.

For this type of comparison a set of baseline hard copy proofs is required. These proofs will be solicited at the Suppliers EXPO from participating proofing manufacturers. They will contain a suite of test images chosen with and without the problematic cyan colors to show the relative correlation between these hard copy proofs and monitor proofing systems using regular and wide gamut LCD displays for images with and without the saturated cyans.

Each soft proofing vendor will be asked to show the same images on a regular and an extended gamut display to demonstrate that the software is not the source of the problem.

2.3.2 Secondary demonstrations

A second test will be to print a press sheet to the GRACoL reference characterization data set (coated#1 printing conditions) as a reference, and have all soft proofing solutions display the same image on their displays, so conference participants can come up with their own judgment.

A third test for this section of the RoundUP is to study the user friendliness of the Application Data Sheet (ADS) for each of the proofing solutions that will be shown at the Suppliers EXPO at the conference. Members of the IPA team will carry out this test. Vendors will be asked to review their ADS with these members and any conference attendee who wishes to participate (one time review). They should review the ADS process and ask for feedback as to whether the process is straight forward and comprehensible. It will be recommended that they allow members of the team to make a proof under supervision to test the process. . The proof will be measured by comparison to the SWOP tolerance and these results and the students' comments on the ease of using the ADS will be reported.

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