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White Paper

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Strategies for Aligning Presswork and Proof

Introduction

Should the press follow the proof? Or should the proof follow the press? This white paper is intended to assist prepress shops, printers, and application specialists in answering this important question by exploring some of the business and technical consequences that will need to be considered during the decision making process as well as the rationales behind current practices in the print industry.

Background

Several print industry trends have, in recent years, resulted in a great deal of confusion among print suppliers, buyers, consultants, and even vendors. The first is the industry's drive toward the adoption of specifications, in the form of characterization data sets, for SNAP, GRACoL, and SWOP print conditions. The opposing trend is the desire for some printers to differentiate themselves by defining their own shop specific print characteristic or quality, for example, using high density inks, stochastic screening, extended process colors, etc. A third trend has been the broad adoption of CTP imaging because it cuts the traditional, fixed, links between film-imaged plate, analog proof, and presswork. Adding to the confusion has been the adoption of digital halftone, inkjet and monitor-based contract proofing systems that have tremendous flexibility in color representation and can be customized to reflect different presswork "looks." Lastly, on a broader scale, the industry standards and specifications are evolving and seeing major changes in how they are defined and implemented.

The two main strategies

There are two main print production strategies the printer can adopt: targeting an industry defined specification for presswork and/or targeting a shop-specific specification. Either strategy will impact everyone in the print production process – from creative and sales, through to prepress and pressroom – so it is critical that the decision is based on a complete understanding of the consequences. Once the business decision is made, presswork and proofing can be brought into alignment so that color expectations can be effectively set and communicated.

Strategy One: Targeting an Industry Defined Specification

Ideally, printers who do not control 100% of the digital files entering their pressroom would target an industry-defined specification as a way of bringing some degree of order to the various inputs that they may receive. In this case the proof is the target and the presswork is brought into alignment with it. This strategy is most appropriate in a distributed printing environment where prepress and scans from a variety of sources must conform to a common print characteristic. Examples are magazine and newspaper advertising or brochures that will be printed at a variety of locations.

This strategy enables prepress tradeshops and production graphic designers to prepare image scans and digital artwork appropriately even when they do not know which printer will be doing the final presswork.

This press aligning to proof strategy is embodied in the traditional, analog film-based, laminate proofing systems with the most popular implementation for offset printing being SWOP. In this production workflow print purchasers produce one set of digital files and proofs, and send the set to the various print locations. The proofs, using current digital halftone as well as inkjet proofers, are made in a standardized manner according to the registered SWOP application data sheets (ADS) to ensure conformance to the SWOP specification. It is then the printer's responsibility to align their presswork, by whatever means are appropriate, to the supplied SWOP proof.

To assist, there are published guidelines and specifications for ink hues, paper grades, dot gain, ink densities and other variables (for example, GRACoL 6th Edition, SWOP, SNAP, and ISO® 12647). Based on this information, it's possible to make separations that take these factors into account. When those factors exist on press, the separations print as expected when the press is "run to the numbers."

If this business strategy is appropriate for your print business, then the appropriate Kodak Proofing Solution can be set up by our applications specialists according to the specific industry guideline or specification that you have targeted. You would then align your presswork to that target proof yourself or engage our Professional Services Group to assist you. This is a chargeable service.

For legacy proofing systems you can either attempt to do the work yourself by downloading the appropriate proofing system ADS and DVL (device link profile) from the graphics.kodak.com website, or you can engage Kodak's Professional Services group to do the work. This again is a chargeable service.

Strategy Two: Proofing to a Shop-Specific Presswork Target

With this strategy, the presswork color is the target and the proof is aligned to it. This strategy would most commonly be used in a non-distributed printing environment where prepress and scans are completely controlled by the printer or where the printer has a close relationship with the print specifier. Examples include brochures, collateral materials, annual reports, corporate brochures, art reproduction, and so on. This strategy is often used by printers wishing to differentiate their presswork from their competition. In this case print purchasers don't care about aligned color across presswork at multiple locations but instead are concerned that their particular project looks as good as possible in print. The presswork is unique—either to the individual print shop or even to a specific press in the shop. The printer may print with higher ink densities, higher

contrast, finer halftone screens, or perhaps, custom ink sets, depending on their customer's specific needs. This strategy may also mean that prepress and separations are customized in order to take the unique press condition into account.

Sometimes printers using this strategy may choose to set up their proofing to meet an industry specification (e.g. GRACoL or SWOP) but then go on to exceed that target on press. That is, the proof and presswork are no longer closely aligned—the printer effectively outperforms the proof. Alternatively, the printer may choose to set up their proofing system to simulate their custom presswork condition.

It is strongly advised that, when defining a custom printing specification, the printing process is verified as performing in a stable, reliable, and consistent manner. This is because it is impossible to characterize and then align a proofing device to a moving press condition.

The Third Strategy Option: Multiple Targets

Just as one size does not fit all – one print characteristic may not suit all. In today's highly competitive print environment, it can make competitive sense for a print shop to leverage the flexibility of digital proofing and plating systems to offer multiple print characteristics to their print buying customers.

Effectively they would select/offer the color flow that is most appropriate for the needs of their customers – presswork aligned to an industry-defined specification proof for certain projects. Proofing aligned to a unique shop-specific print characteristic for others. This involves greater complexity in workflow, however, once set up can provide the printer with tremendous flexibility in differentiating themselves and better meeting their customer's expectations in print.

Coping With Evolving Industry Created Specifications

Industry defined targets for presswork, as embodied in a certified (e.g. GRACoL or SWOP) proofing system, has been quite successful in bringing some order to establishing effective color communication and the setting of presswork expectations. However, the limited number of data points and somewhat vague definitions has meant that there can still be a wide variance in the color appearance of different proofs from different vendors all claiming to be within the target specifications. The first organization to formally address this issue was the GRACoL committee, under the auspices of IDEAlliance. In 2003 they began the development of a document containing general guidelines and recommendations using a new set of process controls based on principles of digital imaging, spectrophotometry, and computer-to-plate (CTP) technologies in ways that had not been done previously in the U.S. The result, "GRACoL 7," embodies a visual-appearance-based GRACoL press and proofing system, gray balance characterization and calibration methods. In addition, GRACoL 7 specifies a definition for gray balance and characterization data for commercial offset printing on a #1 coated sheet. In 2007, SWOP followed this lead for paper grades 3 and 5 and it is likely that other print specifications will also adopt this process. The net effect is to make the published characterization (colorimetric) data of a print characteristic the target for both proof and press. In principle this is basically the same as Strategy One described earlier. The difference is primarily in methodology and the optional certification process.

All of Kodak's certified proofing systems, including our digital halftone, inkjet and monitor proofs, can be set up by our applications specialists to closely simulate the appropriate target characterization data set. You would then align your presswork to that target proof yourself or engage our Professional Services Group to assist you in meeting that specification. This is a chargeable service.

Note that the use of the defined G7 process methodology alone won't result in a numeric match to any of the data sets, or for that matter, following the ADS for a proofing system should result in a good color simulation and gray balance, but by itself it doesn't "certify" a proof to be acceptable. If you require that your presswork achieve formal certification by IDEAlliance then you may engage the G7 Experts within the Kodak's Professional Services group to bring your presswork into alignment and gather the characterization data for submission to IDEAlliance for certification.

Current published characterization data sets include:

- GRACoL 2006 Coated #1 (abbreviated C1)
- SWOP 2006 Coated #3 (abbreviated C3)
- SWOP 2006 Coated #5 (abbreviated C5)

References and Resources

IDEAlliance

IDEAlliance (International Digital Enterprise Alliance - <http://www.idealliance.org/>) is a nonprofit membership organization which provides a user-driven, cross-industry, and open environment in which its members can strategize, innovate, standardize, and implement solutions to real business challenges. They are the umbrella organization under which GRACoL, SWOP, and other industry groups are conjoined.

GRACoL

GRACoL: General Requirements and Applications in Commercial Offset Lithography, in the generic sense, refers to a committee formed by the Graphic Communication Association, that began in 1996 as a graphics arts task force formed to develop a document of general guidelines and recommendations that could be used as a reference source across the industry for commercial offset lithography. GRACoL is now a registered trademark of IDEAlliance.

GRACoL 7

This is the latest version of the GRACoL Publication. The GRACoL 6 Guidelines was published in 2002. Since that time, the IDEAlliance GRACoL Committee conducted a series of research press runs and developed a new set of process controls based on principles of digital imaging, spectrophotometry, and computer-to-plate (CTP) technologies in ways that have not been done previously in the US. GRACoL 7 explains the rationale behind the new visual-appearance-based GRACoL press and proofing system, gray balance characterization and calibration methods. In addition, GRACoL 7 specifies a definition for gray balance and recommends characterization data for commercial offset printing on a #1 coated sheet.

G7™

This is the IDEAlliance publication outlining the methods to calibrate proofing systems and presses based on principles of digital imaging, spectrophotometry, and computer-to-plate (CTP) technologies. G7 is currently being applied to many types of printing including commercial and publication printing, newsprint and even flexo. This publication utilizes the existing ISO 12647 Standards as the basis for printing with inks defined by ISO 2846-1. G7 breaks from tradition by focusing on colorimetric data for gray balance in the mid-tones rather than on densitometric aims, i.e. dot gain, for each color. G7 is a trademark of IDEAlliance. Although G7 was developed by the efforts of the GRACoL Committee, it should not be confused with GRACoL or GRACoL 7.

SWOP

Specifications Web Offset Publications sets forth specifications and tolerances for all forms of advertising and editorial input to publication printers.

Guidelines

A “Guideline” is an optional process direction used to give orientation to users in various marketplaces. They are never binding in any way.

Specification

A “Specification” is a contractual requirement or conditional agreement used in specific market segments. They are generally process control specific and jointly developed between suppliers and customers. They have no formal jurisdiction over other industry, but are usually incorporated directly into contractual agreements.

Standard

A “Standard” is either a reference condition by which all other applications are judged or a usual or known practice. They are codified “best practices” which should apply to everyone and have been formally recorded by an official (accredited) organization.

About Kodak’s Graphic Communications Group (GCG)

Kodak’s Graphic Communications Group is a unit of Eastman Kodak Company, the world’s foremost imaging innovator. The Graphic Communications Group provides commercial printers, packaging printers, publishers, data printers, and enterprises with one of the broadest portfolios of technologies, products, and services in the graphic communications and document capture industries. For more information, visit www.graphics.kodak.com.

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