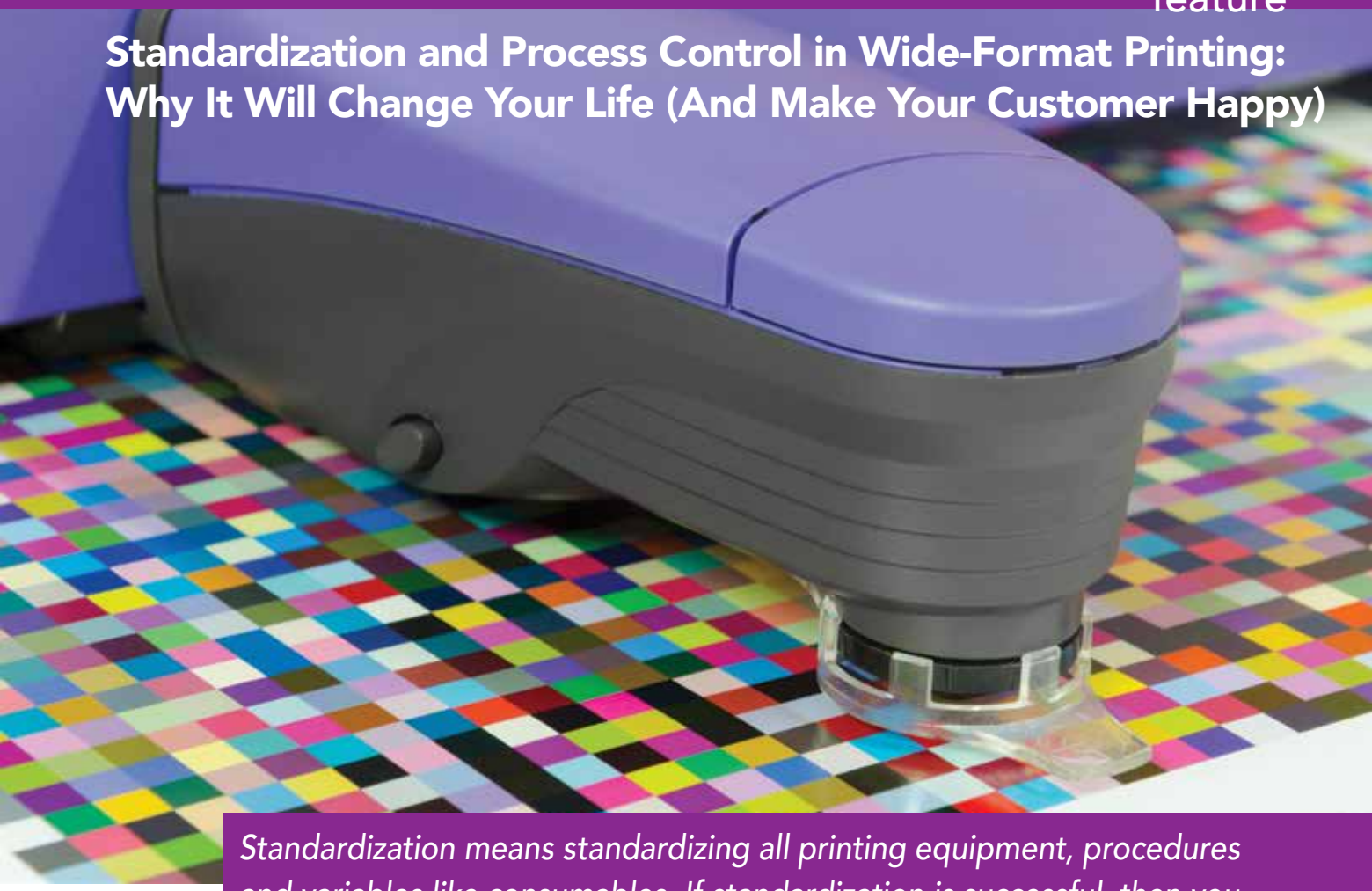
Standardization and Process Control in Wide-Format Printing: Why It Will Change Your Life (And Make Your Customer Happy)



Standardization means standardizing all printing equipment, procedures and variables like consumables. If standardization is successful, then you know you can always print with the same outcome. Any time, every time.

When customers and print providers talk about standardization or process control, you may hear terms like G7, FOGRA, GRACoL, PSD or D50. Often these terms are used incorrectly, not understood at all or — more dangerously — only partly understood but without understanding what's missing.

We don't have enough real estate in this article to explain each and every industry "trend," standard, specification and term, but that's probably not necessary. The right approach is not to look too much into the tools you might use to achieve standardization and process control, but to really figure out what you're trying to accomplish and why. The tools will fall into place once you know where you want to be.

So when we talk about standardization and process control, what do we actually mean?

Standardization means standardizing all printing equipment, procedures and variables like consumables. If standardization is successful, then you know you can always print with the same outcome. Any time, every time. You can reduce your make-ready times or reprints and become a consistent, high-value and high-margin operation that keeps variable costs to a minimum with a lean standardized process. The end result could be a house standard, your own personal way of printing. But usually when we talk standardization, we really mean standardizing to an industry standard (internationally agreed upon, i.e.

Chris Schowalter, Product Marketing Manager, EFI

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"universal") printing condition. This will not only make the product predictable and repeatable, but also interchangeable with other locations and/or competitors.

Process control is tightly intertwined with standardization. Once you have defined what standard you want to adhere to, you will need to control your complete process to ensure you stay within the given tolerances, and that your print product stays consistent. Always keep in mind: Color management and/or standardization is not an event, but an ongoing process. Controlling it day-in and day-out is essential. This is, unfortunately, neglected so often that it can play a key role in how a standardized print shop can differentiate itself from peers.

The Rewards of Standardization Outweigh the Risks

Adoption of standardization is still in its early stage in the wide-format market. To understand some of the implementation steps and concerns, let's look at another market segment that struggled with exactly these questions, but overcame them successfully.

Commercial offset printers have embraced standardization for years. First, starting with the densitybased SWOP movement in North America, then moving to measurement-based standardization — either constructed on the ISO guidelines typically used in Asia and Europe, or on the G7 process and its characterization data sets in North America. No matter the region or industry standard, the concern was always the same. "We always thought that our color reproduction was our differentiation. We were printing what we considered better, more saturated and more vibrant products than the next printer down the road. We felt that we kept our customers because we provided a better-looking result," said Gene Green from SWPP, Houston, Texas. Standardizing the print process was considered a threat because it would remove that "unique" added value. But something interesting happened.

Print buyers and brand owners were trying to figure out a solution to a big problem. They were not able to produce their work at different locations since every print provider produced slightly different output. In a global economy, that was simply not an option anymore. Shipping costs and go-to-market times had to be reduced while providing a superior product. First the big brands started introducing their own house standards. They then quickly understood the value of industry-standard print conditions, and the power it gave them to produce work around the globe. Suddenly printers were forced to either use industry standards or lose the job. Shops already adhering to a standard, or that were ready to do so kept their businesses. The others simply lost the big customers. But there was a big upside, too. Once standardization was in place, brand owners started relying more and more on the print provider. They realized that, when they delivered a properly created file, it became the responsibility of the print provider to reproduce the job according to the industry standard. This created a new clarity in the relationship between the parties.

Standards Create Processes

Color is such a subjective thing. But once you sign up to adhere to a standard process, you commit to a whole set of tools to measure and verify color using hard numbers. This is process control. For the first time, both sides agreed to a fact-driven way to quickly track down the source of potential issues. Print buyers have learned to value print providers that have the process control to adhere to the standard and keep their printing equipment within given tolerances at all times. Buyers realize this precise process control can be measured. Measurement also means print providers can differentiate themselves from competitors with hard facts, and can charge a premium for state-of-the-art process control that will provide a more consistent and reliable print product.

"Once we were fully optimized with the G7 process, we first had a tough awakening when we realized that, once the color consultant that helped us to get to G7 left, we had to continue to measure, control and improve ourselves to ensure that we stay on target. Once we did that though, we became a more value-add partner to our customers and were able to deliver better product to them," summarized Green, talking about the G7 process for his offset operation. "The most important piece was that we were now able to help our customer to adhere to the standards on the file creation side. We really became a deeply rooted partner to them which we are sure we will stay for a long time."

If there is so much benefit for everyone involved, why do we not see a lot of traction for standardization in the wide to super-wide production segment yet?

Standardizing Super-wide

There are a couple of reasons why we are still in the starting phase when it comes to process control and standardization in wide to super-wide printing:

- **Size of customers** — The bigger the print buyer, the more likely they are to have interest in getting consistent product. Big customers will place more priority on the accuracy of their brand colors. As demand grows among these customers for wide to super-wide printing, there will be more demand for standardization and the process control that enables achieving it.
- **Profitability** — Wide to super-wide printing still has very healthy profit margins that allow print providers to compensate for the lack of process control with expensive trial-and-error processes and costly reprints. As competitive pressure increases, it will be more important to achieve the highest quality result fast and the first time. Process control will be the only way to do this.
- **Variables** — Wide-format environments are simply working with significantly more variables. These variables can include different ink sets for each output device, as well as the almost unlimited range of media and substrates. This can make standardization more complex, and is probably the biggest hurdle.

Luckily we are seeing a lot of progress in the standards groups. They appear to have realized the challenges of different media, and are offering solutions to standardize our process — even though one of the main variables is changing all the time, e.g. the ISO 15311-1 draft — which will be the basis for a new family of standards, providing the means to judge and report image quality of printed matter. This will be the basis for media-relative color reproduction that allows visually similar results without forcing paper tint to a certain value, while still providing a clear metric on the process control to achieve the result and create a clear communication chain.

This means we can now produce standards-compliant work, no matter what

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Standardizing your wide to super-wide production environment will help you produce better, more consistent and repeatable work. It will help you create a lean and effective environment that reduces costly reprints and trial-and-error color adjustments.

G7 Qualified Master Printer and FOGRA PSD are two of the seals of approval that one flavor of standardization was achieved.

media is used. As long as the printed result will be evaluated by itself, the media color will be taken into consideration and the visual experience will be as expected. This is changing everything and will make standardization for wide-format printing a reality.

Tools, Certifications and Qualifications

As always, the standard comes from the International Standard Organization (ISO) but FOGRA and IDEAlliance provide us with tools to get to this standard, and with the certifications/qualifications to prove that we achieved what we set out to do.

Ready to take your operation into the future of standardized production in wide-format imaging? You have a couple of options.

G7 Master Qualified Printer

This program is run by the IDEAlliance and uses the G7 calibration method for adjusting any CMYK imaging device to simulate a defined grayscale. G7 promises to yield a visual match between different imaging systems using simple one-dimensional curves, and enables shared appearance between different printing devices or specifications when additional color management is not available.

In order to achieve this qualification, you need to have a certified G7 expert teach you the G7 calibration method, and to send printed sheets to IDEAlliance for evaluation. Since most RIPs have sophisticated color management functionality today, they usually use industry standard profiles or characterization data sets based on a G7 calibration. GRACoL is one example of this. Once that characterization set or print condition is achieved, the process will fall in place within the G7 guidelines, whether the G7 curves were actually applied or not.

As of this writing, no tolerances or specific wide-format characterization data sets have been released. Nevertheless, IDEAlliance is working hard to close the gaps and has recently conducted a wide-format round-up where they tested most major wide to super-wide printer/RIP combinations in order to gather more data for defining tolerances and more wide-format-focused certifications.

G7 has been widely successful in North America and chances are that your print buyer in this region will be asking you if you have this qualification. It is fairly straightforward to achieve and most color consultants as well as printer manufacturers offer a program to assist you achieving it.

FOGRA PSD

The Process Standard Digital (PSD) was developed by FOGRA and closely adheres to ISO 15311-1/2/3 drafts. It is the description of an industrially oriented and standardized procedure for the creation, modification and output of digital print products. Using the PSD certificate, service providers can show their quality approach and the overall understanding of output processes. Successful implementation of PSD provides printers with the benefits of improved cost, quality and time performance, with better sustainability and reduced waste.

FOGRA, the leading print research institute in Europe, sets the bar higher and provides a real certification. Because it uses tight tolerances, it is quite a bit more difficult to achieve.

Since the PSD certification checks the capability of the print service provider over the long term (and is not based on a snapshot), you are required to prove before starting PSD certification that you have your file preparation and environment under tight control by passing the following preliminary tests:

- PDF/X-Creation
- PDF-X-Output
- Ready to produce proofs by means of FOGRACert Validation Print Creation (VPC) or Contract Proof Creation (CPC)
- ISO 3664 conforming viewing environment

Once you have passed the initial hurdle of the preliminary tests, FOGRA or a qualified partner will come on-site to collect all the necessary prints and tests for your audit.

One key difference is that FOGRA requires you to test three different (representative for your business) print

conditions, instead of just one for the G7 Master Printer program. Also, FOGRA applies tight tolerances and will categorize your achievements into three different quality levels. You will also have to send in prints or measurements once a month as long the certification is valid.

Finally, FOGRA differentiates between side-by-side evaluation, which is color-accurate reproduction of a characterization data set, and media-relative — which addresses the reproduction on different media. This is something we need for wide- to super-wide-format printing.

The FOGRA PSD is expected to find a solid following in Germany and Western Europe, and only time will tell if it can take hold in other markets.

Be Prepared for the Future

Standardizing your wide to super-wide production environment will initially create more work for you. But long term, it will help you produce better, more consistent and repeatable work. It will help you create a lean and effective environment that reduces costly reprints and trial-and-error color adjustments. At the same time, you can keep margins high since you increase your added value to your customers with a more consistent product and exact match to their expectations. Standardizing will not make you lose differentiation over your competitors, it will help you position yourself as a premium print provider — ensuring added value to bigger customers and creating a tighter relationship with your clients.

There are still questions to be resolved before we can standardize a very nonstandard environment like wide-to-super-wide-format printing with all its different substrates and variables, but you have some great options when it comes to achieving qualifications or certifications that show the world of potential print buyers that you are ahead of the curve and can treat their jobs in the most professional manner.

Implement standardization and tight process control today, or at least inform yourself about the available programs, to ensure you are prepared for this new way of printing.

Christian Schowalter joined EFI in 2011, and serves as product marketing manager for the Fiery wide format RIPs and servers, He has over 10 years experience in high-end color management and key accounting in commercial, wide format and packaging printing. Before becoming a marketer at EFI, Schowalter was certified as G7 expert, FOGRA partner and First implementation level 2. He and his team spent significant time in press rooms to help his clients pursue standardization and customized color strategies. Schowalter obtained his degree in Print- and Media-Technology at the University of Applied Sciences in Munich.

If you have trouble with consistent color — SGIA has your solution! We've partnered with Nazdar Consulting Services to offer members significant G7 discounts. Learn more at SGIA.org!