Why working with spectral color data is so beneficial

The true digitalization of color, automatic prediction of halftones & smooth overprinting of spot colors

The future of managing color is "spectral". This article will demonstrate why, summarizes the key benefits of working with CxF data & explains how you can easily use spectral CxF data throughout your entire production process – from design to print.
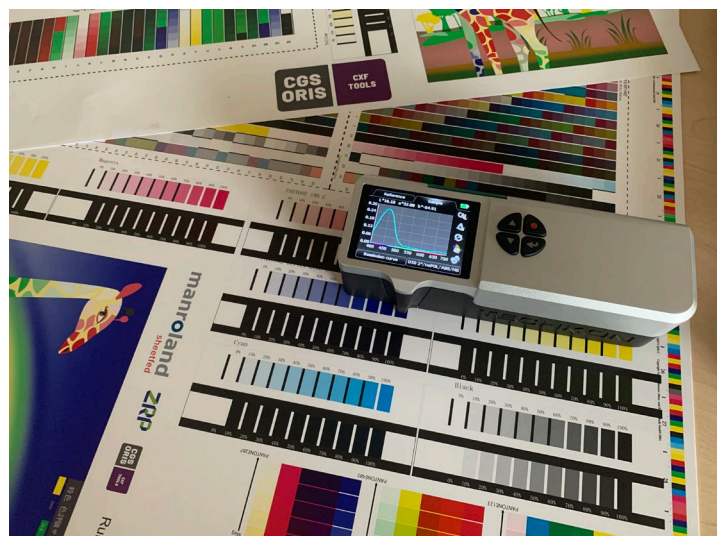
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Initially, for many in the graphics industry it may seem cumbersome when you explain their daily business will be greatly simplified by the implementation of spectral data as a cornerstone to their color workflow environment. At first glance the concept may seem complex. Until now the CxF open standard has been in early stages of true adoption and we still find some reservations related to change. The fear of change is a natural one, but it can also enable companies to be more profitable when they embrace new technology advancements.

The "Color Exchange Format" (CxF) which is the basis for spectral color data is discussed in many industry expert forums related to color management. This is for very good reason and is already referred to as "The silver bullet to communicate and manage color."

Let's explain why and introduce you to some newly developed features which make working with spectral data simple and help your business' overall efficiency.

The tremendous advantage & great potential of spectral data

A huge advantage of capturing CxF color data is that all characteristics of the color are included and easily communicated. This sounds "so simple", right? But, if you take a good look at the daily business of many companies out there, you will see, that many members of the graphic arts industry are struggling with challenges based on a lack of complete or insufficient color data – which they usually receive from their clients or which they may provide to their suppliers.
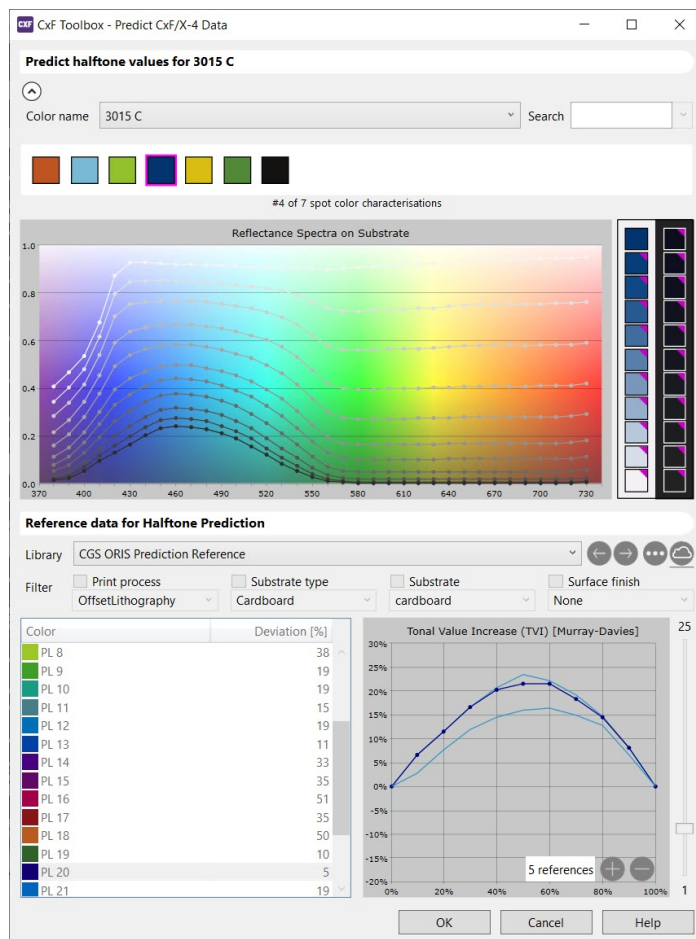

To communicate color effectively it is not enough to describe the solid tone value as it is done in most cases today. You need to have all the aspects of a color included, e.g. the halftones and even the overprinting behavior. Ultimately this is crucial information, spot color gradients are a requirement to be accurately reproduced if color will be printed on transparent substrates for

instance. This is of great importance for packaging printers (→ we will focus on this particular point later in more depth). With spectral data and the suitable tools, you can do this easily.

Working with CxF data is very simple

Many reservations still remain in the market around the adoption of CxF data. In our experience this is often related to the uncertainty of how to manage CxF data, the benefits and the onset of how to go about implementing a CxF based workflow. Many times, people are under the impression they will need a lot of time to create the initial CxF data which is necessary to begin working with it. In some cases, they are correct: In the conventional way commonly used it is indeed time consuming, because you need to create, print and measure CxF tint ramps for all the individual colors you will need to work with.

We have great news though: There have been great advancements and new tools available in the market today that make it possible to avoid the time consuming work in doing so. New functionality in our CXF TOOLBOX makes this a very simple task. The software has been intelligently developed to create, organize and edit spectral data. Most importantly it easily communicates CxF data reliably, with our new "prediction feature".

This **new cutting-edge functionality enables users to calculate spectral values of a printed spot color in an entire gradation automatically** as opposed to only understanding the color characteristics of a solid draw down.

In addition to the solid tone value you only need to understand the target substrate – the rest is expertly managed by CXF TOOLBOX. Accurately predict single colors, but also entire color libraries! This new capability was developed together with SCREEN Graphic Solutions Co., Ltd. and is available in our latest software version recently launched. Completely based on a very precise color algorithm and a large data base which is continuously growing.

Just predict the missing values & color behavior

The prediction feature is incredibly beneficial, because it is extremely fast, very efficient and greatly minimizes user errors which have sometimes occurred in the past. Access to the spectral world of color is possible, it is easy and there is no need for an experienced color expert. The

software is very simple to learn and makes everyone a color expert with only a few clicks of the mouse button.

All CxF data – whether it has been created with conventional print processes or with our prediction feature – will be stored, organized, edited and shared with CXF TOOLS. It is also possible to extract CxF data which may already exist – e.g. when they are implemented in a PDF file. The CXF TOOLBOX easily extracts that information, too.

Store & share your spectral data – locally or in the cloud

You have the ability to save your data locally or use the CXF TOOLS to share the data with anyone you like – or with any system you may need to. This is a very important point, you can use your spectral data for designing, proofing and in the production print process. The CXF TOOLBOX and its COLOR CLOUD are directly connected to all of the other applications in our CGS ORIS COLOR SUITE.

1. You can use the data seamlessly, in applications like FLEX PACK to print contract packaging proofs and to produce the most design complex mock-ups with stunning finishing effects.
2. CxF data is also very beneficial for use in X GAMUT, our award-winning color management software for multi-color printing (→ get more information about extended gamut printing) as you can use it directly within the workflow and easily produce the most color accurate print production runs.

For instance, as a label printer you can take full advantage of all our software tools: It begins by creating and predicting spectral data of the spot colors integrated in your customer's job, using them when producing contract-proofs and mock-ups and lastly within your print production run. You can even use them to separate spot colors (described in spectral values) easily and accurately to an extended fixed ink palette of process colors like CMYK+OGV in multi-color printing machines.

In addition, CxF data is also perfect for use in conventional production. Your in house ink room or ink supplier can use the data within ink formulation software when preparing ink recipes.

"It is very important – and a basic requirement – to ensure optimal color communication between brand owners, designers, agencies, ink manufacturers and printing companies. Completely eliminating any potential misunderstanding of color requirements – no matter where a supply chain partner may be located", Bernd Rückert, CEO at CGS ORIS, summarizes.

"With this new feature CxF data can be implemented very quickly and without any need for a high level of color expertise. This new algorithm is able to calculate all necessary color information and most importantly the color's behavior based on a large archive of color values from all different types of production environments which is continuously growing – this really simplifies and speeds up the process of creating and working with CxF data", he continues.

Spectral overprinting

This has really been an amazing breakthrough. With the latest versions of our CGS ORIS applications a very challenging aspect of color management has been greatly improved: The ability to accurately overprint spot colors. Thanks to the development and implementation of spectral data technology 4.0 the overprinting is smooth and even more accurate than ever before. There are now different modes available to offer the best possible results you may require.

As you can see, working with CxF data is of prime importance for brand owners as well as the entire packaging industry. When spot colors are used in all aspects of their design and production, the unique advantages of CxF data are becoming obvious and everybody who needs to work with them should definitely consider the huge potential and advantages of CxF data.

Successful pioneers & their experience

A global leader in the spirits and beverage alcohol industry has shared their experience, organizing and communicating more than 200 brand colors with our CXF TOOLS: "It is incredibly easy to gain secure access to our brand colors – which are our *crown jewels* – this creates confidence in the supplier, and makes it easy to reach the aim to be one team with one color scheme." (→ read the full story). This opens up even more benefits and advantages of working with CxF.

"For each company in the graphic industry it creates a huge additional value to work with CxF data. It facilitates tremendous time and cost savings. This is why our CXF TOOLS is a core component within our entire software suite and why we are continually advancing the technology every day. The COLOR CLOUD is an instrumental product, the organization and communication of color is a central part of the processes in our industry. CxF and the implementation of a completely accurate color database enables simple color management without a requirement for color expertise. Finally delivering the key to really digitize and globally communicate color. There is no need to use expensive couriers who deliver printed draw downs and color cards from A to B and vice versa", Rückert concludes.
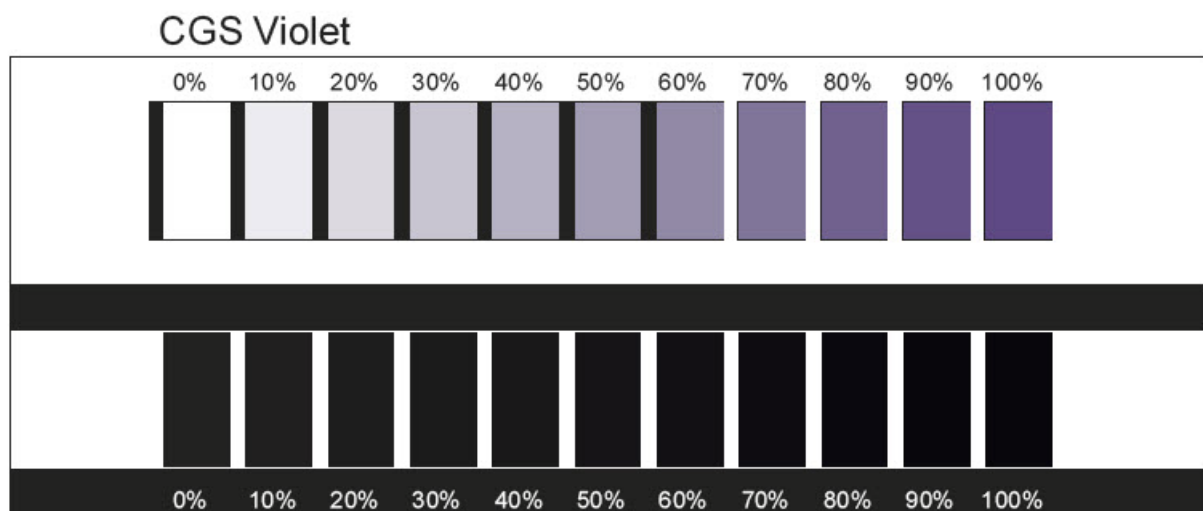

Figure 1. With just one click color cards can be created by the CXF TOOLS

"Of course, many people like to see and experience their color printed in a particular context before they make a final decision – and this can easily be provided with just one click – but at this point in time with our powerful technology CGS ORIS removes the need for visual color checks. Making it possible to completely automate and digitize the color production workflow.

Summary

Working with CxF data and with the newly developed prediction feature finally makes it easy to **enter** the beneficial world of spectral data. It creates much greater **accuracy** (an exchange color space is no longer needed), **security** (as colors are captured with all their properties and behavior) and production work is becoming simpler and much **faster**. The experience of a large brand customer has shown that one month of time each year has be saved in the product innovation cycle in comparison to before. This leads, of course, to huge **cost reductions**.

CXF TOOLS **reduces many errors** (during the production process and between project partners), all color data is always **up-to-date** and a **timeless/durable, reliable benchmark** (which does not shift over time like color cards/chips), several challenges can be met and it helps to **dissociate processes from individual color experts** within a company.

It also ensures a high level of **flexibility** – because CxF is an **open standard** and can be applied to each printing process and varying substrates – an **enormous simplification** of the entire color

workflow. **Greater productivity** and **efficiency** are the results with positive effects for everyone involved in the production process. From design all the way through to end print production.

Therefore, working with spectral data and the suitable tools easily guarantees consistent **color all over the world**, wherever and whenever color is printed.

Benefits at a glance

√ Simple & fast entrance to the beneficial world of CxF/working with spectral data

√ Accurate, safe and fast color processes/production

√ Cost-reduction

√ Error-reduction

√ Up-to-date, timeless/durable color data/benchmark for entire supply chain

√ Dissociation of knowledge from individual color experts, simplification of processes

√ Flexibility (open standard)

√ Simplification of the entire workflow

√ Greater productivity & efficiency

√ Consistent color all over the world

Links & Contact

∞ CXF TOOLS | Ideal solution for organization & communication of spectral color

∞ Case Study | Brand color communication

∞ FLEX PACK | Innovative system to produce color accurate packaging proofs & mock-ups

∞ X GAMUT | Specially developed software to streamline multicolor printing

@ Further information are available at www.cgs-oris.com or get directly in touch contact with our team contact@cgs-oris.com.