SPOT COLOUR ACCURACY AND CONSISTENCY

CxF/X-4 is becoming the file format of choice to manage spot colours. Tom Mooney, at Global Graphics Software, asked colour experts across Hybrid Software Group what is known about this relatively new ISO standard and its advantages and disadvantages

Tom Mooney is Product Manager at Global Graphics Software

Hybrid Software PACKZ

CxF/X-4 – an ISO standard (ISO 17972-4 2018) – which stands for Colour Data Exchange Format. The 4 represents the spot colour characterisation data. It is a means of describing a spot colour without resorting to CMYK values which are specific to a press or Pantone book. Think of it as the information the paint mixer at a DIY store needs to prepare a pot of paint.

VALUE OF CXF/X-4

CxF/X-4, as an open specification, has no cost. However, on its own, a CxF/X-4 file can do very little. Apps are required for support and are costly. The biggest outlay is not the price of the software, but in formulating, mixing, creating and printing high-quality and reproducible spot colours. Subsequently, spot colours can be measured (as CxF/X-4 a, b or full version) and saved as CxF/X-4 files. The value of the software is not just the file format, but the work that has gone into making it available for production.

> *"Think of it as the information the paint mixer at a DIY store needs to prepare a pot of paint"*

SPECIFYING SPOT COLOURS

CxF/X-4 is a data container for spot colours. It has three versions to communicate any spot colour in a spectral way and can also have optional tint values and opacity.

Spectral data – the actual light and wavelength readings from a spectrophotometer (a colour measurement device) – is always required. This is in opposition to values in colour spaces, which are RGB (emitted light from a screen), L*a*b* (human light perception) or CMYK (four-colour printing process).

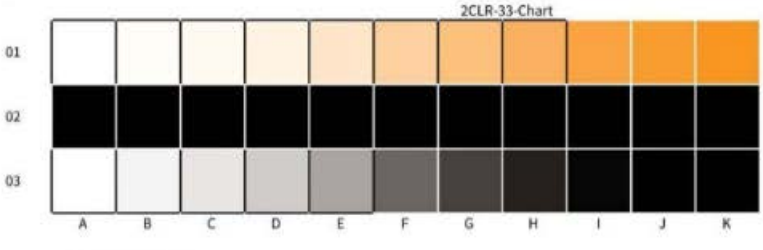
OPTIONAL/COMPULSORY

CxF/X-4 offers different levels of detail. The compulsory – 'b' – is the basic solid colour printed on the substrate, rather like a Pantone book ink mix. The next level up is 'a', which includes tints on the substrate. Three levels are required but 11 are recommended. The full CxF/X-4, also includes these tints on a black background for use with overprints.

CXF/X-4 VERSUS PANTONE

Pantone is a commercial product, where CxF/X-4 is an ISO standard. It is non-proprietary and can thus be used without a license. The value of Pantone is providing ink books and measurement data, ready for production. Instead of ink weights mixed like Pantone, CxF/X-4 records the detailed light and wavelength data, and represents the printed sample in data format.

> *"CxF/X-4 is a data container for spot colours"*



A simple test chart to measure a spot colour to generate CxF/X-4 data

Continued over

Embedding CxF/X-4 measurement data in a PDF file with ColorLogic's ColorAnt

CxF/X-4 is completely device- and environment-independent. Pantone books come in two types – C for coated and U for uncoated which can be limiting. For example, if you want to print Pantone 185 on the same pink paper as the *Financial Times*, or brown corrugated board, knowledge is needed for how opaque or transparent the ink is and how it will interact when overprinted on coloured paper.

"Pantone is a commercial product, where CxF/X-4 is an ISO standard"

Creation of customised ink books can be created for specific presses with CxF/X-4. These capture the exact colours approved by the customer. The colours can also be sent to a print supplier, embedded in the original artwork as a PDF.

ACCURACY AND FLEXIBILITY

CxF/X-4, with tints and opacity, allows for changing viewing conditions, such as different LED lights, tint specifications, spectral predictions for mixing of spots and spots with CMYK. In this way, CxF/X-4 is more flexible and offers more accurate predictions, for real-world usage, because the information about the ambient light, background and opacity of the ink is available.

CONSISTENT COLOUR

CxF/X-4 is a relatively new standard, so adoption has been slow. It can be used from design all the way to print and anything in between. Brand owners are the early adopters. This is because brand owners want colour to be consistent across a range of products, printed on different substrates by a range of printers in separate locations and viewed under a range of conditions. The most extreme example is in supermarkets, where the lighting changes around the store. Different LED lights are used in the meat section to enhance the reds, while greens are important in the fruit and vegetable aisles. The red or green brand colours still have to look good wherever they are viewed and on any product. This can only be achieved with a fully spectral, colour-managed workflow. ■

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