



As devices age and environments change, colours can drift out of tolerance

MAKING COLOUR MANAGEMENT WORK FOR YOU

A remotely monitored colour-monitoring system enables printers to take proactive corrective actions to keep their presses running. Tim Quinn explains how Nazdar's colour-management services prevent rejections to maximise valuable set-up and press time

Remote colour management seems to be one of the latest buzz words in the industry and for good reason. In theory, these products and solutions promise the user a whole host of benefits that could completely overhaul the way they operate and make life a lot easier. However, when referring to the subject of colour 'management', it can potentially be a Pandora's Box, pertaining to everything from ink density, paper type and machine variation to lighting conditions, environmental fluctuations, training and technology – to name just a few variables.

"A remote colour monitor knows beforehand when to recalibrate and why"

Considering all of this, who wouldn't want to outsource a time-consuming and sometimes expensive part of doing business? It is for this reason that investment in the right sort of solution is critical for success. Unfortunately, 'remote colour management' is often construed to be as easy as simply



Tim Quinn, Consultant at Nazdar Ink Technologies

hiring someone offsite to create profiles, period. This notion is almost entirely wrong.

I agree that any expert could assist remotely, but I hesitate to deem the efforts true remote colour management. In theory, this would need to be an all-encompassing system with a manager willing to accept liability for all aspects. For me, remote colour management is a marketing buzz word that in reality has aspects of remote monitoring management but is not controlled remotely.

A remote colour 'monitor', on the other hand, knows beforehand when to recalibrate and why, by virtue of having quantified over time each device's variation relative to tolerances within its capability.

THREE-STEP APPROACH

So how do you address this conundrum? In essence, there are three levels of conformity an expert should use to passively monitor the entire process. I say 'passively', because once the system is in place, alerts are set into place that identify drift. If the drift exceeds acceptable behaviour, but still within tolerance, action needs to be taken.

"In today's world printers cannot afford to wait until something breaks"

The first and most important thing to monitor is how well the device behaves over time using variation tolerances. 'Baseline' refers to the reference condition last taken for calibrating the device. I frequently get asked how often a device should be recalibrated, to which I always reply, 'as often as it needs to be'.

The second level of monitoring conformity is the adherence to industry standard printing aims and their tolerances. This is sometimes used as the contract between brand owners and printers. If, for example, a device fails to meet the printing aim specification, it will also already have failed device variation.

The third level of monitoring, and perhaps the most crucial for profitability, is how close [in terms of conformity] each unit prints to the next. We employ a metric from ANSI/CGATS TR016-2014 called cumulative relative frequency (CRF) ΔE , at the 95th percentile, to compute the colour difference between two or more printing devices.

While ΔE gives a single number for colour differences measured between single samples, CRF compares and sorts several samples or an entire data set from lowest to highest ΔE . The full data set's 95th highest percentile ΔE is then used – a single value to determine the colour difference between two printing devices.

We use CRF to specify a machine's tolerance, typically set to a maximum of five ΔE . To assess conformity, a printed data set is compared to a reference printing condition data set, which is either a standard printing



Nazdar's Managed Colour Services is a cloud-based monitoring solution staffed by a team of colour experts who keep an eye on printing environments 24/7

aim or the machine calibration data set.

This is an interesting concept because, as we are all aware of ΔE used as a single number between colours, this is a single number used between devices. In this way, we can easily monitor which machines are printing closest to one another [high conformity], or furthest apart. I am not proposing we change remote colour management terminology, it's just that I see a lot of companies, mostly OEMs [original equipment manufacturers], offering remote colour management services.

PROACTIVE ANALYSIS APPROACH

As devices age and environments change, colours can drift out of tolerance and, in today's world, printers cannot afford to wait until something breaks to fix it. Lost opportunities together with waste related to downtime can result in losing thousands when you factor in labour, material and press time.

At Nazdar, with the support of

"The true value of Managed Colour Services is transitioning from a break-fix mentality to a proactive analysis approach"

Chromachecker – the industry's first colour conformance platform – we offer Managed Colour Services, a cloud-based monitoring solution staffed by a team of colour experts who keep an eye on printing environments 24/7. Our services detect print device colour drifts beforehand, by using advanced trend analysis and we are able to proactively address issues and prevent colour rejections that waste valuable set-up and press time.

Our system will alert your team to take proactive corrective actions to keep your presses running. For example, when colours drift towards a device's maximum defined tolerance,

a new baseline can be measured. Furthermore, we use tolerances that your device can achieve by defining them based on the gamut and performance of each individual device.

In summary, the true value of Managed Colour Services is avoidance of downtime and saving money by transitioning from a break-fix mentality to a proactive analysis approach. With the help of ChromaChecker, a printer can assess if the output device can meet expectations by establishing their own capabilities and customer expectations. It is compatible with virtually any software that a printer is already using at proof and press, so operators don't have to change their workflow.

Our customers are also very happy with the approach. George Palovcak from BGP Bristol Graphics & Printing, reports that: "Since 2018, our client U-Haul has implemented Nazdar Consulting Services remote-printing monitoring services via chromachecker.com to understand the

characteristics of all of the different printing devices and control our colour variation to keep our fleet of trucks with SuperGraphics looking consistent over the years." ■

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