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Spindrift

News Focus • Opinion • Reviews
Techno-Babble • Attitude

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...Surviving The Graphic Arts Industry Since April 2003

story • ***n.*** legend: a narrative of incidents in their sequence: a fictitious narrative: a tale: an anecdote: the plot of a novel or drama: a theme: an account, report, statement, allegation: a news article.

From Chambers Concise Dictionary

Dear Reader,

As we return from an Ifra, in good old Amsterdam, where many of the big exhibitors were noted by their absence, it seems a shift in focus is taking place in the newspaper business. The main category of absentees were CTP suppliers, which points to this trend: business focus, at least in terms of new investments, seems to be moving away from production efficiencies towards editorial competitiveness. CTP is a prime example of a production technology which has reached maturity, is stable, and where an investment now is a matter of timing, not weighing up the risk factors involved. Presses, also, are performing at top quality, top speeds and with all manner of automation available. It is interesting to note that the newspaper industry seems to have come full circle. The first area to be digitised was the front-end – editorial and advertising systems, and now we are back to a renewed focus on how to be able to compete through editorial developments. The benchmark approach must be the CCI Newsdesk, a system for editorial planning with a strangely revolutionary foundation – the story. Anyone attending the CCI presentations at the show had to marvel at the fact that this is not how everyone works. The system, which we will describe in more detail in our next issue, allows planning and collaboration in a converged newsroom, where stories, rather than production workflows, dictate what goes on. This new way of working, with multi-skilled reporters, across different media, is clearly the next big challenge for the newspaper, or rather, media industry.

Enjoy the read!

The Spindrift crew,

Laurel, Cecilia, Paul and Todd

In This Issue

Purple Reign

KPG has launched a violet CTP plate for newspaper applications, the third on the market. Writes Laurel Brunner: "The future for non-violet visible light imaging looks bleak, and between thermal, conventional and visible light it will come down to specifics for a given business. In newspapers the rate of development between the three would suggest that violet will have the edge. Violet developments are steadily eroding the main arguments for thermal as the plate technologies become more robust, the platesetters more flexible and convenient, and quality improves. It is a long way from thermal still, but this is a relatively immature technology, and it will get better." Find out who's doing what in this market...

see page 7

Colour control

Even a perfectly calibrated proof, imaged on a high quality proofing engine with ICC colour management profiles to die for, can turn out wrong. This we know, so how realistic is it that colour can be like the plumbing, quietly minding its own business and working whenever and wherever you need it? Laurel Brunner delves deep into version 4 of the ICC profile specification, and gets some answers from the big guys, Quark and Adobe...

see page 10

Regular Columns

News Focus

MAN Roland Wins Megaorder

Press manufacturer MAN Roland was one of the main absentees at the Ifra show in Amsterdam last week, but cleverly managed to publicise news of the biggest press order in recent memory to coincide with the show. The Germany company has signed a contract with News International Supply Company Limited, London for a large project with a value in the "medium EUR three-digit million region", according to MAN. (We think that means around €500 million.) The order is for 22 Colorman XXL (triple wide two around) newspaper presslines including accessories, which are to be installed over the next four years.

News International Supply Company Limited belongs to the Murdoch Group. The new presslines are part of a huge project in Great Britain that will see new printing systems replacing the existing MAN equipment. The newspaper titles to be produced on the new Colorman lines include The Times, The Sunday Times, The Sun and News of the World.

KPG's Violetnews for a Purple Reign?

KPG's long awaited violet plate finally strolled onto the catwalk at Ifra, nonchalant and confident, and welcomed with open arms. Even though there was a decidedly measly number of newspaper platesetting suppliers attending the show, all of them had positive things to say about the plate. Violetnews is a negative, photopolymer plate rated for runs of 200,000. It can be baked for longer runs and a commercial equivalent is due in around six months. We have a lot more to say about this very significant introduction on page 7.

Creo Looking to Lose 200 People

As part of its efforts to save US$24 million per year, Creo is streamlining operations and making 200 people redundant. This is about five percent of the workforce and includes the 60 job losses announced recently for the US office. The savings will not only reduce Creo's overheads but will also be reflected in the cost of goods sold. This could lead to lower prices for customers, although this is unlikely.

The cost cutting programme will result in pre-tax charges of around US$6 million on the fourth quarter figures, to 30th September (revenue of US$164 to 166 million). Restructuring costs in the Americas, Europe, Middle East and Africa will account for US$4 million and the balance will be severance costs. According to Amos Michelson, Creo's CEO, Creo is "committed to building shareholder value and profitability". He also said that "the measures announced today will allow us to achieve quarterly earnings before tax of at least eight percent of revenue by the fiscal fourth quarter of 2005".

KPG Closing the Loop with JDF

KPG has introduced a new quality control system based on the Nela high resolution CCD camera technology. This is the same technology that Agfa used when it introduced Afirma last year, but which is apparently no longer part of the Afirma system. KPG's plate quality control system checks for banding, developer fogging, dot density and the like, gathering data which is the basis for correction decisions in the imaging software. This control software is, according to KPG, entirely written in JDF. If this is indeed true it is the first system of its kind, and will provide newspaper publishers with an ideal tool on which to base their consumables contract negotiations, assuming their MIS act is together of course.

The new technology is currently in beta testing at Axel Springer and will be adapted for violet plates.

Sandy Screens Blowing a Gale

If you think dots have to be round, square or elliptical, think again. Sandy Screens, a Swiss repro house, images dots shaped like little windmill sails. The company's AM screening technology is being trialed at KPG, with a view to selling it as Newscreen SP. Based on this curious new dot shape, Sandy Screens has patented their technology. The shape was selected because it avoids visible patterning caused by closing up of dots. The developers claim that their little windmill thingies don't close up

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until 97 percent screen densities and even higher.
The dot shape preserves white space around the dots so there is less moiré and no rosettes. This is because the points of each of the four little extrusions is slightly offset one to the other. Water evaporates more quickly because of the extra space around the shape, so dot gain rates are lower. This technology is not new, having been developed in 1998, and it is proven: five of the newspapers in Ifra's colour quality club use Sandy Screens.

Tera Signs PCM

Tera Digital Publishing is to supply a 1500 user system to PCM Uitgevers, the largest national newspaper publisher in the Netherlands. The GN3 editorial system will replace a muddle of technologies from CCI, NetLinx, AMS, and Mediasystemen. Installation commences in November and is anticipated to take around eighteen months. Tera is working in cooperation with Next Systems, its Benelux distributor. PCM publishes de Volkskrant, Trouw, Algemeen Dagblad and NRC Handelsblad among others.

These newspapers will use the latest version of GN3, which includes integration with Photoshop and support for ICC profiles

Additional Modules from Quickcut

Quickcut Direct and QuickCheck are integrated versions of Quickcut's PDF and Page Store technologies for providing automatic validation and sending of PDFs to the Quickcut ad management database. The software allows the user to validate and correct ad files with a single keystroke. The two modules differ in that the latter is a web based version. Quickcut Direct is particularly suitable for smaller volume users and can include job tickets. Quickcut currently works with XML based job ticketing but is looking into support for JDF.

AdsML Bookings Specification Released for Public Review

The second release for AdsML Framework is the first in a suite of standards to address a discrete advertising industry business process. This second release follows the first one, reflecting the feedback from possible users of the technology. The idea is to make it easier for advertisers and publishers to query, make and confirm ad space reservations for ads appearing in newspapers and magazines. This suite of technology is basically a facilitator for the DIY model and will allow newspapers to jettison yet more jobs, thus tighten up on costs.

DTI Breaks Away

DTI has made a major change to its strategy, moving away from conventional relational database technology to a new database architecture. Instead of using two dimensional table based databases as the foundation for its systems, DTI is basing all systems on multidimensional array database technology from Caché. Unlike most relational technologies, Caché was developed post-Internet and post high resolution digital colour, so it provides the same functionality as relational and object orientated databases, plus more. Caché's technology can accommodate all data types and includes Internet language interfaces, so there is no need for an additional software layer to manage interactions between source data stores and Internet servers.

DTI will provide existing users with a logical upgrade route so that the transition can be managed to suit the client.

Sansui DIY Ad Creation on the Web

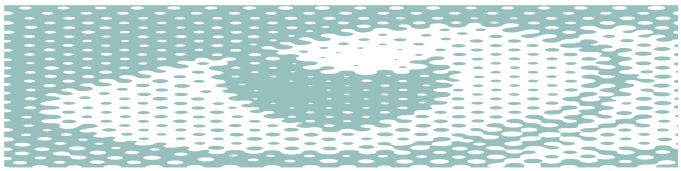
PublishNow is a web based ad system that allows customers to build their own ads, within an integrated booking and tracking system. Managing Editor is working with Sansui to provide the booking and tracking part and Sansui provides the rest using Indesign or Xpress and its own template technologies. This integration is not exclusive to Managing Editor as Sansui is opening its APIs for integration with other booking and tracking technologies.

Sansui has also introduced a variable data printing solution. XPublisha flows XML tagged data into Indesign pages and features step and repeat functions, a tagging rules palette for associating rules with tags, a data management palette for data preview, preflighting and the option to select random records to flow to the page. Output is to PDF or Indesign formats for each record in the document.

Xeikon reaches goal

During the official launch of the Xeikon 5000 in February, Xeikon Internatioal announced that it would sell at least 60 of the new presses before the end of the year. This target was achieved just 7 months later, the company announced at the end of last month. Judging by the quality we saw the machine churn out at Drupa, we're not surprised.

Further Ifra coverage will follow in the next issue of Spindrift.



Spindocs

(Where the spinner gets spun!)

We generally reserve this space for wonderfully misinformed or misleading press releases. But sometimes it's the trade journalists who ought to pay a bit more attention to their subject, as this extract from Ifra's daily Gazette illustrates.

The story covered KPG's entry into the violet plate business, and according to Ifra's writer:

"While everybody in the industry takes note of the possibility of getting non-processable [sic] plates ... KPG says that the thermal plates have the foundation to develop in such a direction. Other providers, like Agfa, aren't so optimistic about this development and that direct imaging on cylinder is more likely to arrive and hit the industry."

Oh dear. Perhaps Ifra's editorial team should have asked Agfa about the Azura plate introduced at Drupa, or even KPG about its Thermal Direct processless technology.

Letter From... Hertegenbosch

Dear Spinachachachoos,

Vell, heer vi are in Omsterdom ageen for de Ifra. I hev to say dat Ifra iz not whot it yewst to be, efen doh it's still a ferry nice show, wid lotsa friendly faces.

Dis year I was ferry confused by de missing companiez, ezpezially sinz dere were so ferry many ov de missing onez. No Agfa, no Creo, no Enfocus, no Fujifilm, no Mactive, no Man Roland. Are dese companiez maybe spending dere marketing monies on customers instead of de big expos? Dis is a gud idea I tink.

My newspaper told me dat I could go to Ifra for one day, so I am glad it woz here in byootifol Omsterdom, which iz for me quaite cloze. I won'd be aple to go anymore doh, becauz next year, dey will put de Ifra show far away in Leipzig. Better for me is Newstec in Engerlond, so dat is where we go instead, to loferly Brighton, in loferly Sussex. So I hope dat Agfa and Creo and Enfocus will be dere as well!

Frendlicherlacher Greetingz,

Hans Niesandabomsedaisy

Driftwood

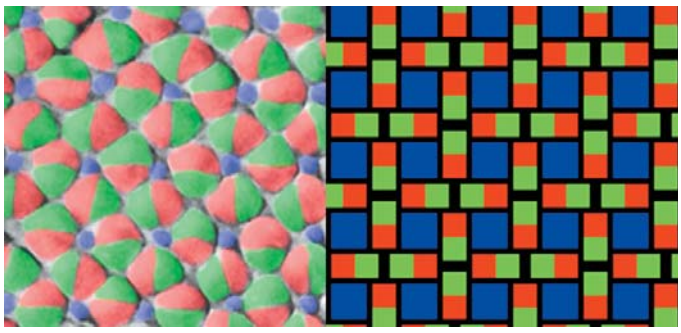
(Useful stuff washin' in on our shores)

Better images with fish eyes

Can an African Cichlid fish help developers of imaging equipment improve image quality? Well, this freshwater lake dweller is apparently gifted with particularly acute sight, so according to some Swedish scientists, the African Cichlid has a lot to teach us.

The scientists concerned are working in the Lund Vision Group at Lund University, recognised leaders in vision science. Most of the research is based on the construction of the visual systems of fish, crustaceans, insects and aquatic invertebrates, with particular emphasis on how the various sorts of eyes are adapted to a creature's environment.

The scientists have been studying the photoreceptor cells in the retina of the Cichlid Astatotilapia Burtoni (you know, the fish formerly known as Haplochromis). The cones in the eye of this particular fishy friend are arranged in a pattern that lessens the amount of colour aliasing in the images. Aliasing can occur as a result of the disparity between a CCD array's sampling rate and the optical system's resolution. The result will be patterning in the image that interferes with the mosaic of detectors in the sampling array. This creates moiré, and although the problem has been overcome using special algorithms in capture software, it makes sense to avoid it in the first place. This work is also relevant for other imaging devices such as televisions, monitors and printing engines.



The colour receptive cones in the retina of the Cichlid fish (left) and a pixel mosaic (right) that in tests shows promising low colour aliasing of image data.

It seems that fish have the same problem with the lenses in their eyes resolving finer details than the arrays of photoreceptors on their retinas. To overcome this, the eye of the Cichlid has a special pattern of photoreceptors, and other features to reduce aliasing. Ronald Kröger of Lund University is confident that the lessons learned through his and his colleagues' research can be used to improve both colour monitors and the sensors used in video cameras and still image digital cameras. They have filed a series of patents related to their discoveries.

Boomerangs

(Your feedback fed back)

We just have to include these two emails together. Apart from the fact that they reflect the breadth of the Spindrift readership so well, they illustrate why colour management isn't ever going to be easy.

Hi Laurel,

Thanks for the latest edition of Spindrift. As an ageing and greying 53-year old I am struggling to keep up with the current jargon. I was OK with html and XML but am starting to get lost with 'JDFXMLP6ofor you mate'. But this month's edition got me completely with the caption 'The average colour deviation is Delta E 2.97'. Does anyone know how to apply for a bus-pass?

David Howes
Director
Tera UK Limited

Hi Todd/Spindrift

An interesting article on proofing and the Altona test suite. I have been using the Test Suite and the Media Wedge with a number of clients, many rip/proofer combinations and in the course of implementing, via process control, ISO 12647/2 standard printing conditions.

So some comments:

As you observed, often the 'accepted best' visual match is not reflected in the best Delta E figures.

The 4/5 Delta E tolerance, especially on the solid colours is often difficult to match, indeed the manual states that this figure for the solid process areas can be 'interpreted generously'!!

Also having the benefit of comparing my reference sheets to another's, the measured difference is below an average of 1.5 Delta E, with no visual difference, others may disagree.

Also the figure of 1.5 Delta E in spectrophotometer tolerances, machine to machine, has to be taken into account. So referencing the 'reference sheets' using a tool such as Best Match in GM SpectroEye is useful in these measurements.

This figure is interesting to consider in relation to the PPA's 'Proof for Press' standard, which states a tolerance of 2.2 Delta E, which type of Delta E, and if this is an average or maximum I have yet to discover!

I have noticed, as have others, wider variations than 1.5 between instruments, and that is before we look at litho printing inks!!!

However back to the Test Suite, I have found it to be an effective tool for checking the calibration and profiles of digital proofers, if you are aiming then at an ISO standard printing condition, with the additional benefit of checking for PDF X3 abilities.

Regards

Paul Sherfield
The Missing Horse Consultancy Ltd

Editorial note: ECI/Fogra use the "old" formula of 1976 to calculate ΔE, but we've seen some reports suggesting the use of ΔE 1994 or even ΔE 2000 to achieve a better correlation with how the human eye perceives colours. Whatever formula we use, it's a good thing that the graphic arts Industry as a whole starts to measure and communicate print quality in a more objective way than in the past. We like the saying "If you don't measure it, you can't manage it and as a result you can't improve it".

Say What?

(Iffy Writing Award Presented in the Ether for Obfuscation, Confusion, Misinformation or All Out Pretentiousness)

This is a terrifying view of the future for printers from one of the UK's leading print weeklies. The article discussed the rise of print brokers, with a particularly adroit metaphor - not:

"But outsiders are little different from nomadic hunters. They can for a period of time go round stealing crops and ravishing settlers' women, but ultimately someone has to grow the food and an uneasy truce always comes into play. ... A new way of working may be beginning to establish realism between buyer [sic] of print and the seller of its production."

So the next time some print broker wants to pay a visit, lock up your grain stores and make sure the animals (and of course the women), are closely guarded!

Acrobites

(Something to get your teeth into)

Delta E

This isn't easy to define, least of all because it isn't even an acronym, which is supposedly what this column is all about. Delta E is generally written ΔE, and it is the subject of much consternation, especially if one has never quite grasped the physics nettle.

Delta E expresses how much one colour differs from another. To put it in a more academically correct way, it refers to the distance between two points plotted in a three-dimensional colour space expressed in CIELab. This means that other colour references, such as RGB or CMYK, have to be translated to CIELab before a calculation of ΔE can be made. There are several different ways of calculating this distance, but, if it's not clearly otherwise expressed, it refers to the formula from 1976. This was when CIELab was first presented by the CIE. This calculation uses Euclidean geometry, the guiding principle of which is that only one line through a given point can be parallel to a particular line. Since dear Mr. Euclid died some 300 years before Christ, his maths must have something going for it. The reason some scientists like to use different sorts of mathematics to define their ΔE values is that colours of the same hue but of varied saturation don't follow a straight line when plotted in a CIELab diagram. A slightly adjusted formula helps express how colours really appear to the human eye.

$$\Delta E = \sqrt{(L_2^* - L_1^*)^2 + (a_2^* - a_1^*)^2 + (b_2^* - b_1^*)^2}$$

where:

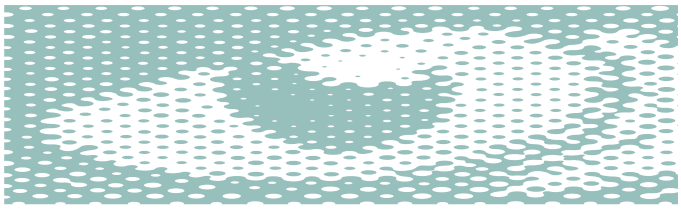
L_1^*, a_1^*, b_1^* = CIELAB coordinates of reference color
L_2^*, a_2^*, b_2^* = CIELAB coordinates of comparison color

Why should we care at all about ΔE? Among other things, ΔE values are used as a measure of colour print quality. You set a value (most printers are happy with around ΔE 5) and measure the spectral values of your critical colours throughout the run, adjusting the press if things start to drift away from accepted values. The value can also be used in colour management as a means of keeping an eye on colour rendering, for example on the screen or on a proofing device.

The problem with using CIELab values as part of a colour conversion algorithm, is that, although the distance between two points is a straight line, apparently the maths doesn't quite work out, which is why there are aberrations in colour conversions, particularly going from a large colour gamut to a smaller. That's why for example a deep blue sky expressed in RGB may turn purple when converted to CMYK. Adobe claim to have fixed the problem a long time ago, but as far as we can judge Photoshop (and many other ICC-based solutions) still have problems converting "out of gamut" colours accurately.

CIE L*a*b*

In 1976 the Commission Internationale d' Eclairage published its description of the L* a* b* colour space. In this approximately uniform, three-dimensional colour space, colours are defined according to their rectangular coordinates based on their luminance, from black to white, and their degree of red or green-ness, and of yellow or blue-ness through two additional axes. The standard has been widely adopted in the graphic arts, because of its scope for accommodating a vast range of colours, and because it is the chosen colour space for the ICC's Profile Connection Space, or PCS.



Developments in Newspaper CTP - or Maybe Not?

This article was supposed to be about computer to plate technologies in newspapers. Having seen so much activity in the commercial platesetter market, we had quite reasonably thought it about time we took a closer look at what was happening in newspaper CTP. And Ifra, which took place last week in Amsterdam, had seemed the ideal place to get caught up. After all, isn't it supposed to be the main event for newspaper technology? Sadly there was only a sparse handful of platesetter suppliers showing products in Amsterdam: ECRM, IPA, KPG and Krause. Strobbe was there but only showed its platebending technology. Yum. Compared to years gone by this was a pathetically poor showing, but it reflects the market reality.

The most interesting hardware introduction, well pretty much the only real hardware introduction, was KPG's Newsetter TH100/TH180 CL.There is absolutely no difference in this version of the thermal engine, except that a plateloading mechanism including interleave removal and capacity for 300 plates (to a maximum of 460 x 670 mm), has been placed on top of the imaging unit. It's pretty nifty and it means that newspapers with limited space can now accommodate a Newsetter. Previously the plateloader would have taken up a wodge of additional space. Of course a separate plateloader can feed two machines at once. The Newsetter price is also coming down by 30 percent, to around €150,000, for engines with the integrated autoloader. Commercial deliveries are scheduled for Q1 2005. The Newsetter is built at Heidelberg's old Kiel factory by Hell and the factory has been kept pretty busy: KPG recently took an order for 28 engines from the Freedom Press in the US, a healthy addition to the 208 already sold.

Today, although technology plays an important part in investment decisions, it is not the key driver. Rather, investment protection and business development support are the main considerations for most newspapers.

With this integrated plateloader the Newsetter now has the smallest footprint on the market according to KPG. Newsetter is positioned as a replacement engine, and KPG has Agfa Polarises in its sights for such sales. This will be most obvious in the UK market where Agfa and Fujifilm have an estimated 90 percent of the market and KPG a mere 5 percent. KPG has said that it has no plans to enter the commercial platesetting market with this technology.

Market's third violet plate

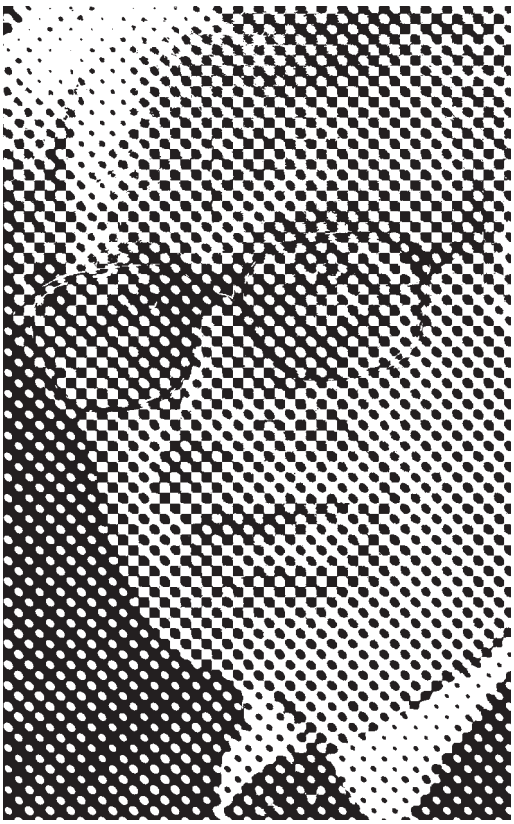
Far more interesting than the hardware however, was KPG's introduction of its violet plate for newspapers, soon to be followed by a violet plate for commercial printers. The new Violetnews plate is a negative photopolymer material that can be baked for longer runs (200,000 unbaked) and that has "fast imaging speed". KPG is selling it now in controlled situations and the plate is already in use at Axel Springer, which has a small herd of Polaris engines waiting to start chomping away at Violetnews. According to KPG the new plate has half the processing chemistry replenishment rate of Agfa's equivalent processor, and it can hold a 2 to 98 percent dot at up to 175 lpi, although this is utterly dependent on press conditions, paper and so on. The new plate will be produced on KPG's existing line in Osterode, Germany with real sales beginning early next year, with a commercial market equivalent due some six months from now.

The European plate market is estimated to be 70 percent visible light (mostly non-violet) and 30 percent thermal. For newspaper platesetting

there are no longer any platesetter developers or suppliers of consumables, not active in violet imaging except for Creo. The effect of KPG's introduction on the CTP market will be profound and places Creo at the very least in a position, if not of isolation, then looking just a smidge marginalised in the newspaper business. Even though KPG itself only sells a thermal engine, and that purely for newspaper production, the company's support for violet imaging consumables effectively leaves Creo in a club of one. Creo, despite an installed base of over 300 units in newspapers, cares entirely for thermal engine and consumables development, an exclusivity that limits the company's technology options and severely constrains its market opportunities. The violet imaging technologies and markets are advancing so very quickly. How long can Creo afford to ignore the fact that customer choice is reality, not folly or ignorance? The market may not scream and shout, but its voice sooner or later gets loud enough to hear.

KPG will continue to support both violet and thermal and, besides the Violetnews plate, introduced a new version of ThermalNews. This thermal plate for newspapers is 30 percent faster than its predecessor, with higher resolution and greater chemical resistance. Rated for over 200,000 impressions it is suitable for FM screening, with testing of the new Sandy Screens technology (see News) underway.

Perhaps things would seem different for Creo if KPG's violet plate hadn't been so well received, but it was. The platesetter suppliers working with it at Ifra were unanimous in their praise and even those suppliers who develop platesetters, but chose not to show them at Ifra had good things to say about the new Violetnews. ECRM, IPA, Krause and Strobbe have all had positive experiences when testing the new plate.



Two photos comparing Sandy Screen's innovative new dot pattern for newspaper applications.

ECRM slim but trim

ECRM has sold over 100 violet machines in the last fourteen months, mostly to small to medium sized newspapers, where the company is becoming a leading supplier. Part of ECRM's success lies in the company's well-toned business model. It's so toned it borders on anorexic, but the commodity market attitude – low overheads and a lean sales organisation – with purpose built technologies, rather than scaled down versions of high end systems, is part of why ECRM has survived apparently against the odds. ECRM designs machines with a low cost basis, and welcomes the Violetnews plate because it helps change the cost basis for users, reinforcing the violet message and opening the way for newspapers to invest in lower cost technologies.

Taking a similarly pragmatic approach to market is IPA, which has offered violet platesetters for some little while now. The FastTrak Violet photopolymer engine shown at Ifra imaged the new KPG plate with a 60mW laser, at a rate of 150 plates per hour. The pricing of this engine is somewhere between that of ECRM and Agfa equivalents, and IPA's cost structures are more in line with those of the former than of the latter. Most of the 70 FastTraks installed are at newspaper sites.

Krause has sold over 400 platesetters, of which 300 are at newspaper sites. The company has focused on newspapers but the introduction of violet consumables for VLF applications will change this for Krause. The company claims to have the fastest engines on the market and to offer the greatest range of options for its customers. Indeed there are several models of Laserstars for VLF and 8-up output as well as newspapers, for imaging both thermal and violet plates. Ifra saw the introduction of a

100mW violet device for newspapers and another outing for the CTP Easy engine introduced at Drupa for smaller newspapers or as a backup engine. 23 of these engines have been sold since Drupa with nine sold at the show to the Hind newspaper in India! Krause is working on a 30 unit sale to another Indian newspaper group, but cannot yet disclose the name. Krause is the dominant supplier of platesetters to the Indian newspaper market.

Violet on the up

The future for non-violet visible light imaging looks bleak, and between thermal, conventional and visible light investment decisions will come down to specifics for a given business. In newspapers the rate of development between the three would suggest that violet will have the edge. Violet developments are steadily eroding the main arguments for thermal as the plate technologies become more robust, the platesetters more flexible and convenient, and quality improves. It is a long way from thermal still, but this is a relatively immature technology, and it will get better. It all suggests Creo might want to consider a broader consumables and imaging position.

Violet developments are steadily eroding the main arguments for thermal as the plate technologies become more robust, the platesetters more flexible and convenient, and quality improves.

It's a sad thing but Ifra is not the show it once was. Clearly, in a Drupa year especially, suppliers no longer see the need to present their technology at too many trade shows whose primary purpose is about profit for the organisers. That's one possible reason why Agfa, Creo, Fuji, MAN Roland, Enfocus, plus others, chose not to participate in the show. These were serious absences for the Ifra organisers, demonstrating that the rate of return on investment into this type of marketing is simply not high enough.

But there is more to it. Today, although technology plays an important part in investment decisions, it is not the key driver. Rather, investment protection and business development support are the main considerations for most newspapers. In the future we expect to see continued sales of newspaper CTP, but they will be mostly based on replacement sales. This means Agfa as the leading supplier will need to watch its back as the likes of KPG start striving for a stronger position. Speed and quality will be the most likely battleground, with shrill violet and thermal arguments, engine prowess, closed loop control and screening technologies the main choice of weapons.

– Laurel Brunner

Colour Management for the Masses

If ever there was an oxymoron, that headline has to be it. In much the same way as the meek don't want to inherit the earth even though the Bible says they shall, the masses don't want to manage colour. It has to be said that knowing the ins and outs of colour production does not figure high in the top ten list of most peoples' things to do before they die. We just have to accept it. But be not distressed, dear reader, colour management is fortunately a deep and abiding concern for the ICC and for both Quark and Adobe, on whom the fate so much colour production depends.

Quark and Adobe, when they were living other lives, brought typesetting and composition to the world, and they are working to do the same with colour. For those meek souls who don't want either to inherit the earth or manage colour, this is good news because colour technology should just work. Like the electricity or the water supply, it should be part of every media professional's environment, without them necessarily having to understand either volts or the intricacies of plumbing.

That sounds ridiculous doesn't it? Anyone who has had to explain colour management to a client knows that it doesn't work that way, and that you have to at the very least, teach him something. Even a perfectly calibrated proof, imaged on a high quality proofing engine with ICC colour management profiles to die for, can turn out wrong. This we know, so how realistic is it that colour can be like the plumbing, quietly minding its own business and working whenever and wherever you need it?

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Such consistency and reliability is precisely what the ICC strives for in its work, even though colour is far from simple. Its management is hardly helped by a lack of effective, proactive market education by all concerned, and this is in part why general adoption of ICC working methods has been patchy in all but a couple of areas. But it is also about the technology. ICC uptake has been very successful in the direct conversion of single images to a given print space, generally using Photoshop, and it's also been successful in proofing. There is an almost overwhelming array of output devices on the market and a substantial number of them are ICC controlled proofers, producing CMYK prints. Uptake of ICC methods has been rather less successful in other areas such as managing RGB images within a PDF workflow and working with RGB profiles – an area that has been rather too slippery for many RGB-orientated users.

Casting off ambiguities

One of the reasons why many people became disillusioned with ICC standards has been dodgy interoperability across software and hardware. The organisation recently introduced version 4.0 of the ICC's profile specification with a view to solving some of the difficulties. In trying to compare ICC version 2 to version 4, the first question that comes up is what happened to version 3? But don't think you missed anything, it was a purely internal affair and it's best left in peace. The primary comparative difference between 2 and 4 is to do with solving interoperability problems, most of which were down to ambiguities in the specification. Version 4 also has a more precise definition of the Profile Connection Space or PCS. For example, on the issue of perceptual rendering, version 2's instructions for implementation were somewhat confusing, and

this led to differences in how profiles were implemented and how they functioned within the PCS. Version 4 has much clearer instructions of what to include in profiles, so they are not vulnerable to interpretation differences and behave themselves properly in the workflow. Whatever version 4 compliant ICC colour management technology is used, the profiles should now always produce the same result. Perhaps we will finally see the end of deep blues turning purple on press, which Adobe attributes to people using the custom profile tool instead of Adobe press profiles. Printers may not always want to do this however.

There have been other improvements besides. The PCS has been tightened up so that colour mapping from source to a device independent version of an image, is more tightly constrained. Now in the PCS all image colours are converted to the values in what would be the equivalent in an idealised reflective print. Much of the difference between version 2 and version 4 has been about defining what would constitute an ideal reflective print without constraints on the operator.

One of the problems in version 2 was that it gave people the flexibility to modify data before building colorimetric tables for a profile, and this naturally could lead to variations in how colorimetric data might get interpreted. Version 4 ensures that colorimetric rendering is measurement based, with an improved media white point specification. Overall this makes calculations for absolute colorimetric rendering tables less ambiguous.

These are just some examples of changes, but there are many more, most of which respond to experiences in the burgeoning ICC colour management user community. It takes time, but fortunately, through its broad membership base, the ICC has been able to absorb and resolve many of the processing ambiguities that cropped up when the technology was used in live production environments. According to Craig Revie, the ICC's chairman, it has been vital for the ICC to work especially close with Adobe and Quark, since so much colour is either originated or specified using their technologies. He says: "As far as print production is concerned, Adobe and Quark are key companies as far as being able to create consistent documents."

Low user uptake

According to Quark, less that ten percent of the company's user base uses ICC methodologies however, and it seems that most activity is in Europe, particularly in magazine workflows. Adobe was asked the same question, but didn't give us a clear answer.

Both companies are now making their colour management much simpler to use, so that colour workflows can be set up with a single set of controls, optimised for specific workflows. This is about applying profile concepts to a workflow so that the colour will be consistently good for print and image creation, regardless of output method or destination, be that web, digital press, or gravure cylinder. The model ought to extend to the use of a commonly supported colour management module that is available to any applications that want to use it. This was the original idea with Apple's ColorSync and Microsoft's equivalent but it hasn't really worked in practice, not least because Adobe still uses its own internal colour management engine that only works with Adobe applications. Quark's colour whizz David Allen says the company is committed to "working to improve the colour experience for all of our customers using standard ICC methodologies. The reason for using ICC is

Kamar Aulakh, president and CEO of Quark. He has been instrumental in establishing dependable release schedules and turning around Quark's attitude towards customer relations.

Leon Brown, Senior Product Manager, Adobe Creative Suite.

so that users may modify the way QuarkXPress outputs colour in very specific ways and to allow/promote colour consistency among various applications and devices that might be used in the workflow. This would include Adobe applications." According to Leon Brown, senior product manager at Adobe, "we can add significant value to our customers and the industry by lowering some of the barriers. Some of the areas that we are currently investigating for future release include safely turning on the colour management system in our applications while preventing unwarranted CMYK-to-CMYK conversions, since these conversions are one the biggest complaints of users investigating colour-managed workflows. In short, we want to make today's device-dependent CMYK work safe, while allowing for incremental (i.e. optional) experimentation with calibrated RGB content in device-independent workflows".

Nimble thinking required

Ironically, although profile management is becoming a key part of all digital workflow management, uptake of ICC methodologies in PDF workflows isn't what one might hope. This may be because only PDF/X-3 supports grown up colour management, allowing inclusion of RGB images and LAB defined spot colours, so one can defer decisions about print until the last minute. But PDF/X-3 is based on version 2 profile technology, so at best processing colour will require some nimble thinking on the part of the operators involved. That PDF/X doesn't support version 4 profiles is also the reason why standard profiles in Photoshop CS are ICC version 2.1 and not 4.1.

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Craig would like to see "PDF/X move up to be based on PDF 1.4. The present standard is based on PDF 1.3 and you can only include version 2 profiles. To avoid ambiguity when converting documents to a different printing process you really need to be using version 4 profiles". Time ticks on though, so developers are working on tools to produce verified PDF/X-1 and PDF/X-3 PDFs, with integrated colour management that gets the most out of these technologies' colour restrictions. There will still be conflicts however, particularly if users are not entirely clear with what means what in the user interface.

This is an especially important concern for broad-based colour management development, since we have no common lexicon of terms used within control screens for print output. We need some sort of accepted lexicon to enable users throughout the print supply chain to work anywhere within it, and to be able to understand any user interface that deals with PDF or ICC Profiles. Not a lot of work is yet being done, however, to develop common nomenclatures. According to David Allen "Quark is always on the lookout for the terminology that can be used to describe functionality in a consistent way. Since neither one of the specifications originated with us, we have no strong attachments to any current terminology. However, we will look to the source of the technology to drive the standard and adhere to those specifications as closely as possible. My hope is that the JDF initiatives will encourage vendors to use common terminology." That may be a vain hope given the fact that the JDF community can't even agree on their own acronym!

The training imperative

So much of colour management is about education, yet so few colleges are actively teaching it. Colour management is still a leap, it still needs training but as Craig observes "colleges tend to teach people the basic principles of applications used in print production and not the details of

how individual applications work. They also teach basic ICC techniques, however, since each application uses a very different set of controls, the terminology and basic philosophy as implemented in applications is not likely to be part of the college training modules."

Digital colour management was never going to be easy. The latest ICC specification, combined with the move towards using profile and process automation techniques, is helping matters. It seems that the best way to make colour management work is to teach users about the need for accurate device profiling and calibration, and of course how to use the technologies. If ICC members, Quark, Adobe et al, can work towards a common goal, progress will inevitably be made.

– **Laurel Brunne**r

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