ISSUE ONE

SPRING / SUMMER 2007

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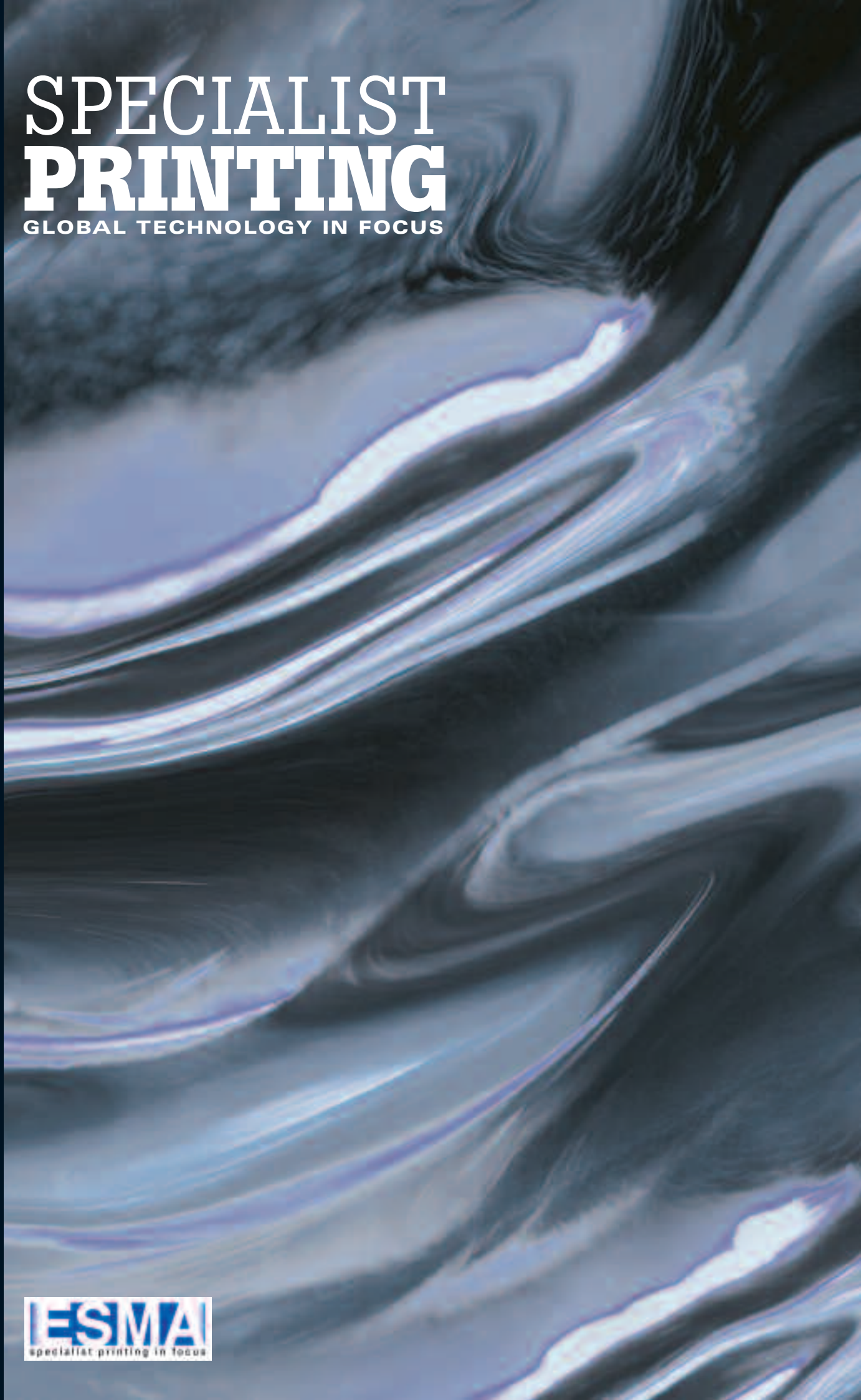
SPECIALIST PRINTING

GLOBAL TECHNOLOGY IN FOCUS



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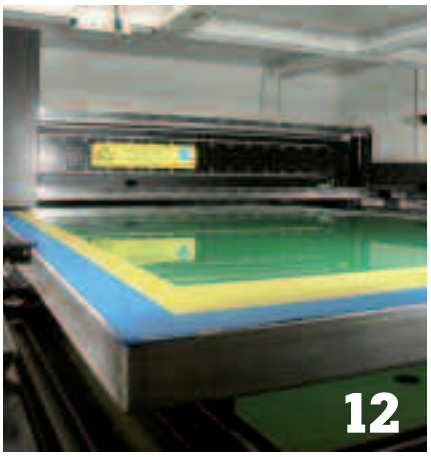

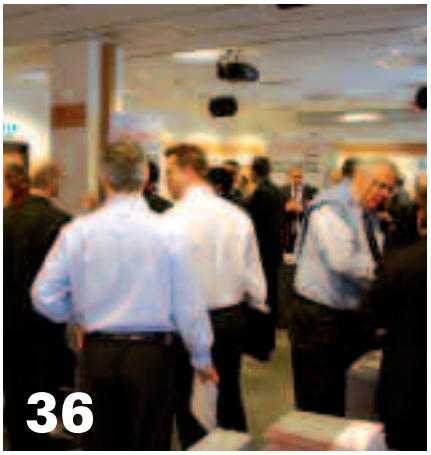

Welcome
Benvenuti
Bienvenue
Willkommen
Bienvenido
欢迎您
Добро пожаловать

A MESSAGE FROM ESMA'S GENERAL SECRETARY

The members of ESMA are delighted to be in a position to sponsor this new magazine. It is likely to be highly innovative, with a clear focus on technological matters relating to screen and wide format digital printing.

ESMA and its members produce a lot of high level technical information which can be invaluable to the users of specialist printing processes, and see an obvious advantage in having access to a magazine distributed worldwide to publish this information.

ESMA is the European association of manufacturers of machinery and consumables used in the specialist printing processes across industrial, graphic and textile printing. Part of its objectives is to make as much information available as possible for the advancement of the specialist printing processes versus competitive processes such as off-set litho and gravure printing. This objective will be advanced with the support of *Specialist Printing* magazine, together with training and information seminars sponsored by ESMA.

ESMA wishes *Specialist Printing* every success.

Bryan Collings
ESMA General Secretary

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Think ESMA for print

ESMA IS AN ASSOCIATION OF EUROPEAN MANUFACTURERS OF MACHINERY AND CONSUMABLES FOR THE SPECIALIST PRINTING INDUSTRY, INCLUDING SCREEN, DIGITAL AND PAD PRINTING PROCESSES. IT IS A NON-PROFIT ORGANISATION, FUNDED BY MANUFACTURERS, FOR MANUFACTURERS AND TO THE ULTIMATE BENEFIT OF THEIR CUSTOMERS.

People using specialist printing technology looking for a supplier of machinery, equipment or consumables can do no better than logging onto the ESMA website (www.esma.com) where a full list of ESMA members may be found with a summary of their products and a link to their own corporate website, where full information will be available.

ESMA insists on its members meeting their legal obligations with respect to labelling, packaging and the provision of product information. If you trade with an ESMA member you have a guarantee that they have implemented this policy and can buy with complete peace of mind.

ESMA OBJECTIVES:

1) Promoting screen printing, digital imaging, pad printing and other associated processes
2) Obtaining greater standardisation in all processes
3) Improving user training and knowledge via technical articles and seminars
4) Stimulating the worldwide exchange of technical information
5) Lobbying at Brussels for reasonable regulations and legislation, relevant to all processes, particularly in health, safety and environmental issues
6) Identifying and supporting major exhibitions relevant to all processes.

These objectives are managed through four working committees staffed voluntarily by ESMA members.

The Health, Safety and Environmental Protection Committee studies all present and proposed European Union and some national legislation to determine its effect on members and their customers' activities. This means that members' customers can have the confidence of having the best advice on health, safety and environmental issues when buying from an ESMA member.

The Technical Development and Standardisation Committee works to produce standards on various aspects of specialist printing. By joining ESMA and working on that committee, companies can have an influence on the standards which are set. The increased networking amongst technical professionals leads to more focused innovations.

The Applications Committee arranges well supported seminars and magazine inserts to inform existing and potential customers of the possibilities of using specialist printing in their industry. This is continuously expanding the market for specialist printing and has recently been particularly successful in the glass industry, where decoration by specialist printing is growing rapidly.

The Exhibitions, Promotions and Publicity Committee not only promotes ESMA and its members to the printing marketplace, but also arranges special terms for members with exhibition organisers. A recent initiative has been to arrange for statistics on the market place to be collected by a third party organisation to be collated and fed back to participating members. This is providing valuable benchmarks for members to compare their own market-related performance against.

By using the ESMA website to announce product information, members generate new business leads. There is a link from the ESMA website to each member's own website. They also have access on the private area of the website which includes databases for magazines on a worldwide basis and a fully detailed list of relevant worldwide exhibitions. Each member has the possibility of advertising its own training facilities to printers on the ESMA website.

Meeting and talking with fellow professionals is an important part of membership whether one is a producer of machinery, substrates, inks, mesh or other supplies. Gaining new business is a priority for all companies and ESMA provides a fertile environment for contacts to be made and partnerships to flourish. This is a two way process and ESMA members often turn to their colleagues when sourcing supplies.

Membership of ESMA provides a unique opportunity to interact with colleagues from other companies who share the same goals. Through activity in the organisation, members interface with executives from all areas of the specialist printing manufacturing suppliers. The working groups within ESMA which help shape the direction of the association and the industry it serves are open to all members and provide opportunities for excellent networking.

ESMA truly is an organisation which provides not only benefits to its members, but also develops and improves the specialist printing community in its entirety.

Further information:
web: www.esma.com

An interview with DANIELE DE ROSA

Specialist Printing speaks with the ESMA Chairman about the future role and direction of the organisation

ESMA, THE EUROPEAN ASSOCIATION OF MANUFACTURERS OF SPECIALIST PRINTING COMPONENTS, RECENTLY NAMED PETER BUTTIENS AS ITS NEW GENERAL MANAGER, MAKING THE POST FULL-TIME TO REFLECT THE GROWTH IN THE NUMBER OF ITS MEMBERS AND ACTIVITIES. CONSEQUENTLY ESMA'S ADMINISTRATIVE OFFICE WILL TRANSFER FROM THE UK TO BELGIUM. PETER BUTTIENS WILL TAKE OVER ESMA'S MANAGERIAL ROLE FROM BRYAN COLLINGS, WHO IS THE EDITORIAL CONSULTANT FOR THIS MAGAZINE.

On making the announcement, Daniele De Rosa, Chairman of the ESMA Board, commented that the appointment "should bring the association to a higher level", reflecting ESMA's changing priorities as the organisation continues to grow and adapt to the industry it serves. *Specialist Printing* spoke with him about this exciting future.

What will a major change mean for ESMA?
Moving to Brussels is one of the first steps we have taken to refocus ESMA. The main goal of ESMA is not just to provide a meeting place for members, but to deliver service and support to each member. So we decided to have a full-time working manager with very high marketing experience.

The first step is to interview each one of the members of ESMA to understand better what benefits they expect to be delivered from this association. Peter Buttiens has started to visit each member of ESMA and from the results, we will understand where we should position ESMA in the future. All opinions from ESMA members are valid and we will find our future path from those opinions.

In the future, only suppliers that are able to reshape in time will survive. We have to be flexible and we have to adapt, because changes will be more radical than in the past. I do believe that screen printing will survive in a well-balanced manner with digital, pad and even off-set printing. ESMA needs to represent speciality printing, not one technique, because one technique is not enough to meet the needs of our printers.

Will the structure of ESMA change?
Possibly, yes. The first possibility is that Peter's appointment may bring about the redefinition of the existing EPP committee. It might be that the EPP may disappear in time. Peter will not complete his research before the end of this year, so we can assume that such a complex and articulate organisation as ESMA will not be able to completely redefine its strategy before this time.

The Industrial Applications committee has become the Applications Committee, and we also discussed possibly launching a new Machine Committee that will highlight aspects of health and safety related to the equipment manufacturers to satisfy the needs of the members involved in equipment production.

We already have in mind in the future to have several continental associations, such as ESMA and NASMA, joining altogether under the roof of a global association. Many ESMA members have a subsidiary or other company in the USA which is a member of NASMA, so we have to move together to represent a big portion of the global industry. ESMA priorities remain in Europe and NASMA priorities are in America, but we all have a reason to work internationally. We have already formed good relations in China and India.

We hear ESMA is financially strong. How will this benefit members and their customers?
ESMA is a not-for-profit organisation but we do end every year with surplus cash. With the money generated by technical forums and an increase in membership, the economics of ESMA are becoming stronger every year. Our economic strength enabled us to make the decision to hire a full-time general manager and this appointment demonstrates ESMA's financial position.

Is ESMA growing?
We have 45 members, which is the highest number of members ESMA has ever had and other companies will become members very soon. In recent years the membership numbers have been increasing, which shows we are on the right track.

What is ESMA's primary objective in having a stand at FESPA Berlin?
ESMA is an association of members who deal in specific industries, so we have to tell visitors what we can provide in terms of technological support. We will give exposure to the most updated techniques for printing, digital, pad, screen. ESMA members have customers from all over the world and FESPA 2007 is a great place to present to them all that is new.

Show organisers like FESPA and DRUPA are companies that act as marketing suppliers to manufacturers. Manufacturers


Daniele De Rosa


Peter Buttiens


Bryan Collings

need a booth space for visibility and to exhibit their technology. On every occasion where ESMA members buy an exhibition service, ESMA should be present.

We are in talks to have a Screen-City area at DRUPA to help ESMA members achieve focus with the visitors. This will happen at other events in the future. ESMA made a friendship agreement with CISPA that they would, in some ways, be the sister association in China and support exhibitions there. ESMA had a booth offered at Print China and Screen Printing India last year, because ESMA is working with the local association (the SGAI) and helped them to organise their show by supporting them.

What is ESMA's relationship with show organisers and national associations?
ESMA is growing better relations with national associations directly. Our technology is available to help improve national associations. FESPA has designed for itself a commercial role to organise shows, and we respect this because they are doing it very well, so we are not in competition with them. Better relations between ESMA and FESPA can only be good for the industry in general.

We are trying to strengthen our relations with any show organiser. FESPA as a show organiser is one of the best that is available in the market, so we recommend FESPA as a quality show that is very well organised and we recognise that since the last show, there have been tremendous improvements in the quality of that organisation. We understand that FESPA is doing a great job and we are more than happy to strengthen our relationship with them, as we are already doing with other show organisers.

We notice that ESMA is running more forums and seminars. Is this allied to the training role of ESMA members?
Our focus has to be to support technical development to improve market knowledge. The success of GlassPrint 2005 convinced members of this. With the CTS Forum, we had a major consensus from members that this was a success and I am sure that with the help of Chameleon Business Media, GlassPrint 2007 will be a success. In the next year, we are planning to have three technical conferences to spread technology amongst members and major players all over the world.

ESMA is throwing its substantial weight behind *Specialist Printing* magazine. What are its objectives for doing this?
ESMA as an association can spread technical know-how through forums, but even the most successful ones are normally only attended by 100 people. Magazines offer maybe less immediate communication, but are able to hit many more people. So we have a tremendous opportunity for ESMA and its members to spread the value of what we do in a dedicated specialist printing magazine focussing on technical issues. The objective of ESMA is to increase the technical knowledge of our customers; *Specialist Printing* offers us a great opportunity to do it better.

Business relations between ESMA and the publishers of *Specialist Printing* started many years ago and we found that Chameleon Business Media is the best available to represent ESMA and its members. As Peter Buttiens becomes more familiar with the industry and the association, he will work with Chameleon Business Media to help serve the interests of all members. Bryan Collings (*Specialist Printing*'s editorial consultant and outgoing General Secretary of ESMA) is a great guy and it is very good that he has a crossover period with Peter.

What are the benefits of Bryan Collings being involved with *Specialist Printing*?
It is absolutely perfect because Bryan is a great man and his industry experience is a great asset to the venture. The partnership will be of great value to the industry – we see it as an excellent combination. Bryan's role with *Specialist Printing* will be fruitful for ESMA.

THE NEW EU CHEMICALS POLICY – it's here and it affects us all!

Dr Sem Seaborne discusses the new European Union chemicals policy, which, he tells us, affects us all

GET TO KNOW THE ACRONYM REACH – IT STANDS FOR THE REGISTRATION, EVALUATION AND AUTHORISATION OF CHEMICALS. IT IS THE NEW EUROPEAN POLICY FOR CONTROLLING CHEMICALS AND CHEMICAL PRODUCTS; IT COMES INTO FORCE FROM JUNE 2007 AND IN SOME WAY OR OTHER IT IS LIKELY TO AFFECT THE LIVES OF ALL EUROPEAN CITIZENS.

REACh sets out to protect human health and the environment from potentially harmful properties of chemicals being used in all walks of life. It is regarded as the most complex, expensive and far-reaching legislation ever to emerge from the European Commission. It was initiated back in 1998 amidst howls of protests from European manufacturers, to ensure all chemicals used within Europe (above 1 tonne per annum) are registered with a detailed portfolio of toxicological and ecotoxicological properties, and that their use is then the subject of a detailed Chemical Safety Report controlling the risks of exposure to any potential hazards.

Many of the chemicals on the existing European Chemicals Inventory (EINECS) are there by virtue of already being on the market when the inventory was created in 1985, and at that time no requirements for additional tox/ecotox data existed. Although this has developed through ELINCS for new substances introduced since then, there are still many substances around of uncertain toxicology.

REGISTRATION

Now, anyone along the chemicals supply chain will have to ensure that the chemicals they use have been (or are going to be) registered with the newly-formed European Chemicals Agency (ECA) to be reassured that the chemical has a portfolio of defined toxicological and ecotoxicological properties or that work is underway (initiated by the ECA) to acquire this information. Moreover, the chemical must be registered for the type of application being considered, since that has a bearing on the likelihood of exposure to potential hazards. For example, a chemical used in a gravure ink would have a different exposure scenario from the same chemical used in a screen cleaner.

Since everything we use in modern life starts off with chemicals as the building blocks, it is not difficult to see that many of the products we encounter as 'downstream users' will be affected by the security of the registration process and the 'upstream' communication with the chemical manufacturers who are responsible for registering with the ECA. If a business imports the chemical from outside the EU, then they alone must complete the registration process.

The cost of doing all this is high and a variety of numbers have been thrown around. The fact is that it is impossible to be precise about cost until we learn about what chemicals may disappear as part of the REACh process. Cost estimates vary from €2 billion to €11 billion. The cost of setting up the ECA alone, with a staff of hundreds in Helsinki, is estimated at €1.189 billion over 15 years. The cost of just one of the screening tests (for carcinogenicity, mutagenicity and reprotoxicity) is about €90,000 and involves tests on live animals.

AUTHORISATION

If a chemical displays properties like carcinogenicity, mutagenicity and reprotoxicity, environmental toxicity or environmental persistence, the ECA will need to issue an Authorisation for its use and will require a substitution programme. If substitution is technically not possible and continued use is justified on socio-economic grounds, a very strong submission will be required to guarantee public protection. The REACh process therefore offers an opportunity for chemical manufacturers to 'rationalise' their product range so that expensive administrative work is not wasted on unprofitable chemicals or those with an uncertain future.

Already ESMA member companies are aware of chemical suppliers pruning their range of chemicals available. In other cases where companies have speciality chemicals made solely for their unique products, they will probably become responsible for sharing the registration cost with their supplier. The bills will run to thousands of Euros for small and medium-sized companies. Looking at reformulation of products will equally run to enormous bills and divert technical efforts away from innovation and creating new products. Some ESMA members are managing over 40,000 different formulations.

Do our competitors in the USA or China face such costs? Certainly not. Will there be import controls on products (articles) manufactured outside the EU more cheaply? Certainly not, unless it can be demonstrated that a chemical exists within an article and exposure is a possibility.

PRE-REGISTRATION

Needless to say, chemical manufacturers are not keen to get drawn into this costly process if there are not satisfactory returns on their outlay. The REACh process commences with pre-registration of all chemicals from June-November 2008. This will help the ECA identify the existing state of knowledge for all chemicals sold/used in Europe. The list will be published in January 2009 when all businesses must check to see if the chemicals they use have been registered for their application.

Full registration for chemicals >1000 tpa will take $3^1/_2$ years, ending in December 2010. This will also include chemicals sold in smaller volumes (>1 tpa) if they display carcinogenic, mutagenic, reprotoxic, and >100 tpa if they exhibit ecotoxic or ecopersistence properties. Registration for all chemicals >100 tpa ends in May 2013 and >1 tpa ends in May 2018. The mistaken idea that small quantity producers can afford to wait until 2017 before they do anything will not be acceptable. All chemicals must be pre-registered by January 2009 to determine what gaps in the technical portfolio need to be filled.

Supporters of REACh insist that the Regulations represent an opportunity to develop new low health risk, eco-friendly chemicals that will ultimately give the EU chemical industry a global advantage. Financial benefits are also predicted to derive from better health standards across Europe. In the distant future that may be true, but there is the painful next 11 years to survive in the meantime. For any company working in the printing industry, it is highly likely that we shall be facing a round of price increases for products containing affected chemicals and perhaps even more importantly, some products will actually cease to be made as chemicals producers cut low volume chemicals from their ranges due to the high cost of certification.

Dr Sem Seaborne is ESMA's Health Safety & Environmental Protection Committee Chairman

SCIENCE FOR SURVIVAL

Steven Abbott has a warning for European and US printers if they don't raise the quality standards of their technical screen printing

I'VE SPENT THE LAST FEW YEARS LIVING ON THE EDGE. I'VE BEEN WORKING IN OUR LAB AND WITH CUSTOMERS AROUND THE WORLD TO SEE HOW FAR WE CAN PUSH SCREEN PRINTING TO GIVE RELIABLE (I.E. PROFITABLE) HIGH-TECH (E.G. NARROW LINE WIDTH) PRINTS.

What I've found has depressed me. In the USA and in Europe I've found a widespread misunderstanding of how screen printing actually works. Therefore a lot of time, energy and money is being wasted in trying to achieve better results by treating the symptoms and not the root cause.

In Asia the scientific understanding may also not be very high, but through the continuous exploration of what really works, many Asian printers have discovered for themselves what the science has been saying for some years. Printers there are routinely producing jobs that are believed to be impossible in the rest of the world.

The reason that I used the word "depressed" is simple. The recipes for good printing are very straightforward. A modest concerted effort with mesh, ink, stencil and press would allow European and US printers to do just as good a job as the best in Asia. But time and again the science is rejected because it is believed that screen printing is an art, rather than a science.

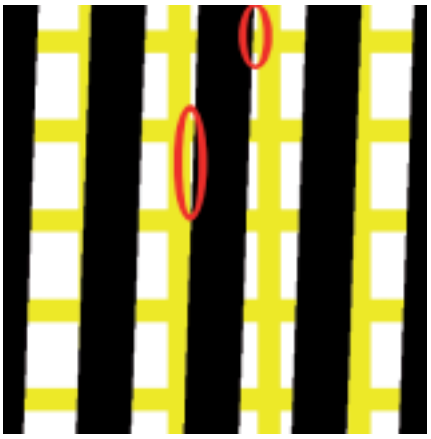
In this article I will quote some specific examples from my own experience. I will disguise some of the details but every bad example is from the real world.

FAT MESH MEETS FINE LINE

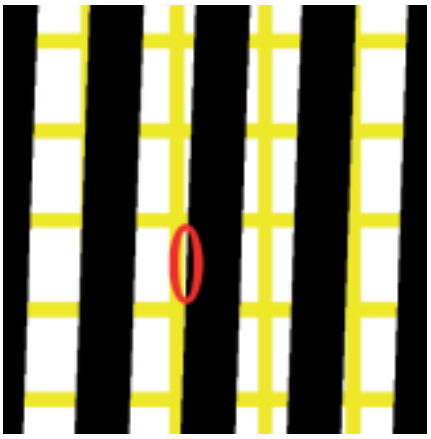
I was asked for my opinion on a project where high quality 100µm lines were required. As I regard 100µm as rather easy to do (and it is seen as crude in parts of Asia), I said they simply needed to get hold of a stainless mesh 120/20 (or in stainless terminology 65/20) or better and use a stencil that gave a low Rz and low EOM on this very open mesh.

Unfortunately, they used a polyester 150/31, used an excellent stencil and were astonished to find that the line edges were unsatisfactory, with alternating smooth regions and jagged regions. They had all sorts of explanations about the jaggedness, including the bizarre idea that the EOM of the stencil (3µm) was too low.

It takes only a moment's thought to see that a 31µm thread diameter must pose problems for the print under certain conditions. When the thread is fully in the open then of course it's not a problem, and when it's fully covered by the stencil it's also not a problem. It's when the stencil edge is close to the fibre edge that problems arise. With a 31µm thread (in reality it's flattened to more like 34µm when it's woven and stretched), there's a very high probability of such a clash. With a 20µm thread the probability is very much reduced and the edge quality is better. By going to a 16µm mesh (relatively rare but still useable) or a 13µm mesh (I'm told they exist in Asia but have never seen one), the problem of printing a 100µm high quality line disappears.



A thick mesh with lots of interference



A thin mesh with much less interference

Eventually the printer got hold of a stainless mesh with a 23 micron thread and the prints were more than good enough for his application. If he'd done the right thing first he would have saved a lot of time and money.

THE PROBLEM OF SPARKLE

There is, of course, a downside to stainless. When you expose the stencil you get a lot of reflected light that reduces the resolution of the stencil. It's obvious that the stainless mesh should be provided with a blackened, anti-halation surface. In Asia this elementary fact has been known for years and high-resolution printing with stainless is routine. Despite my best efforts I have not been able to source any fine, blackened stainless in Europe or the USA. I have no idea why the whole fine-line industry has not been making it clear to the stainless mesh suppliers that this is as basic a necessity as yellow mesh is to normal graphics printers. Until we get anti-halation stainless as a matter of routine, our lives are guaranteed to be a lot tougher than they need to be.

THE EVILS OF THICK STENCILS

It's five years since William Shorter at MacDermid Autotype published his work on controlling fine-line printing. He showed that a high Rz (rough) stencil is obviously useless when they want superb edge quality. Controversially though, he also showed that a high EOM (thick) stencil causes unnecessary problems as well – it gave much too large a variation in line width and edge quality when the orientation of the line changed with respect to the squeegee stroke, and also gave too much variation when print parameters changed. The results were no surprise to us as the science of screen printing had predicted the results in advance. One of the worst problems with a thick stencil is 'negative sawtoothing', where the upstream edge (with respect to the squeegee stroke) fails to print cleanly. You also (for thicker lines and solid blocks) get a large edge effect and much more slump.

A thick stencil (high EOM) gives a thick edge to the line …

… or else gives negative sawtoothing when the squeegee can't push enough ink through to reach the substrate

A high-tech customer showed me some of his prints in some distress that he was getting too much process variability. I asked him what his EOM was. He had no idea. The thought that any high-tech printer did not routinely measure the EOM of his stencil was shocking enough to me, but one look at his prints was sufficient to see that he must have been using a high EOM stencil and, sure enough, this was confirmed when I measured it with a simple Isoscope that most of us use regularly. But what distressed me the most was the reason he'd chosen such a thick stencil.

He was convinced that a thick stencil "gave a better gasket". This is one of those half-truths that infest our industry. Of course a thick emulsion "gives a better gasket" compared to a thin emulsion because, other things being equal, the extra coatings will have reduced the Rz. But there is plenty of evidence that thin, smooth stencils give excellent gaskets and none of the nasty side effects of a thick stencil. You can get thin and smooth either via a lot of hard work with emulsions or via one of the more modern capillary films. This printer was working on the basis of a half-truth with no actual knowledge of his EOM or his Rz, the two most important stencil variables in the process!

SLUMPING TO FAILURE

One of the most difficult problems to solve is the issue of the spreading of the printed line immediately after printing – so-called 'slump'. This issue is easily understood with some standard physics. As ever, the issues get clouded when printers use the wrong stencils and the wrong inks and there are erroneous notions that slump depends on gravity (it doesn't).

In brief, a layer of ink that starts off with a contact angle of θ expands sideways with a velocity proportional to θ^3 and inversely proportional to the viscosity of the ink. It is, of course, helpful to have a higher viscosity ink, but given a parameter that varies as the third power, it's obvious that that's the key parameter on which to focus. To simplify even further, θ essentially depends on the initial thickness of the ink. Halve the thickness of the ink and the rate of expansion will decrease by more than a factor of two, so your line width will stay under much better control. And the recipe for a thinner ink deposit? Of course it's a thin fibre (16µm is good) and a low EOM stencil (3µm seems fine). Get those things right and you're off to a good start.

A big ink deposit has a high contact angle and therefore a large slump

And then we discover a virtuous circle. By having a thin fibre and a thin stencil it's very easy to print even a high viscosity ink – it's easier to squeegee through the mesh openings and there is less resistance as the mesh comes out of the ink during the printing. By using a higher viscosity, you get a lower slump. By using the right stencil, the ink doesn't have to compensate for the inadequacies of the mesh/stencil combination, so the ink designer can concentrate on getting its other properties right.

The single most important property to help reduce slump is not so much high viscosity as a rapid return to a very high viscosity immediately after the shearing processes during the printing. The classic particle-filled cermet inks have a wonderfully fast recovery to high viscosity and give narrow lines. Classic polymer inks have a very slow recovery and give wider lines. I'm sure that clever ink designers, focussing on the rapid recovery (for example, by using associative thickeners) will be able to provide superior polymer inks.

NO MOIRÉ MAGIC

Most industrial printers don't have to worry about moiré, but I include this short section because high-end colour printers waste lots of time and money fighting it with irrational tools. I've written a little book (available free of charge) explaining all the moiré phenomena in our industry and providing straightforward cures. There is not a screen printing moiré that I can't explain, because moiré is only maths and I have a computer that can do the sums for me.

IT'S NOT MAGIC

The process is complex but it is not magic, or a black art. I have met one really good example of an industrial printer in the West that fully understands the science. They claim, and I believe them, that they never have difficult problems on their presses. Their 'zero-magic' operation means that they don't have to waste precious hours on the press tweaking this and that to treat the symptoms because they are already treating the cause. Their business is flourishing as a result.

If you were to have a long hard look at your screen making and screen printing processes, do you have any areas where problems come and then go as if by magic, or are you in total control of the science behind the process?

It is time to take the science seriously before your competitors do!

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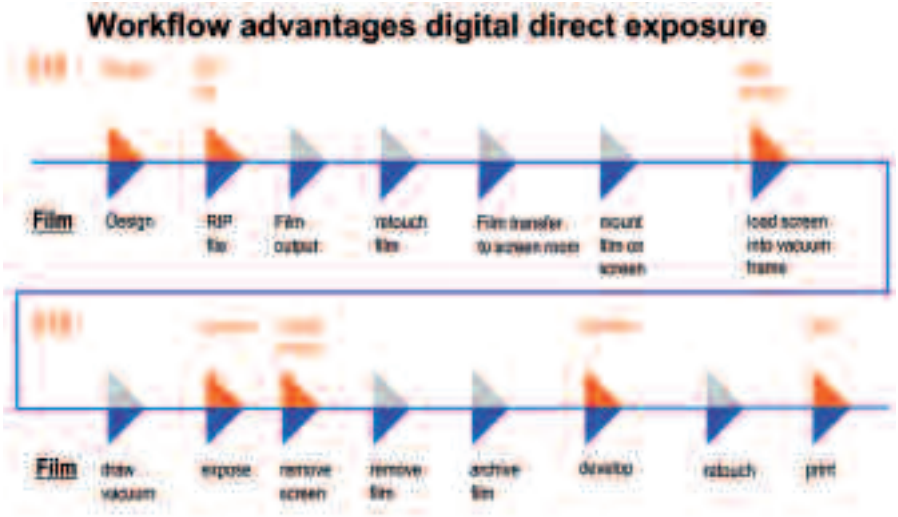
COMPUTER-TO-SCREEN SCREEN PRINTING TECHNOLOGY

Rudi Röller describes how computer-to-screen technology will have an effect on screen printers in the future

THOSE IN THE SCREEN PRINTING FIELD WHO CONTEMPLATE THE FUTURE ARE WELL-ADVISED TO EXAMINE NOT ONLY THE FUTURE MARKET POSSIBILITIES, BUT ALSO CLOSELY INTERCONNECTED AND MORE EFFICIENT PRODUCTION METHODS WHICH HELP PRINTERS TO STAY AHEAD OF THEIR COMPETITION.

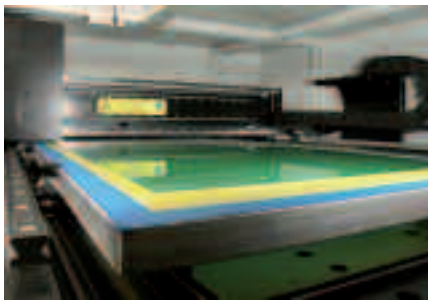
In the digital age, where we are confronted with the challenge of old and new printing technologies, XXL offset printing or digital printing, it is of vital importance to clearly highlight the strengths of screen printing, as well as recognising and introducing all the technological advantages which the other technologies have already put into practice. It is not just a question of stressing the quality advantages of screen printing, but also to use technological advantages in order to reduce production costs, be more profitable and competitive.

Here we are specifically talking about rationalisation and savings in the pre-press phase, where offset printing has proved over the last 10 years that not only can you do without lithographic film, but at the same time exploit the potential of work-flow advantages.



The workflow advantages of using digital direct exposure

Rudi Röller, Member of the Board, Marketing & Sales



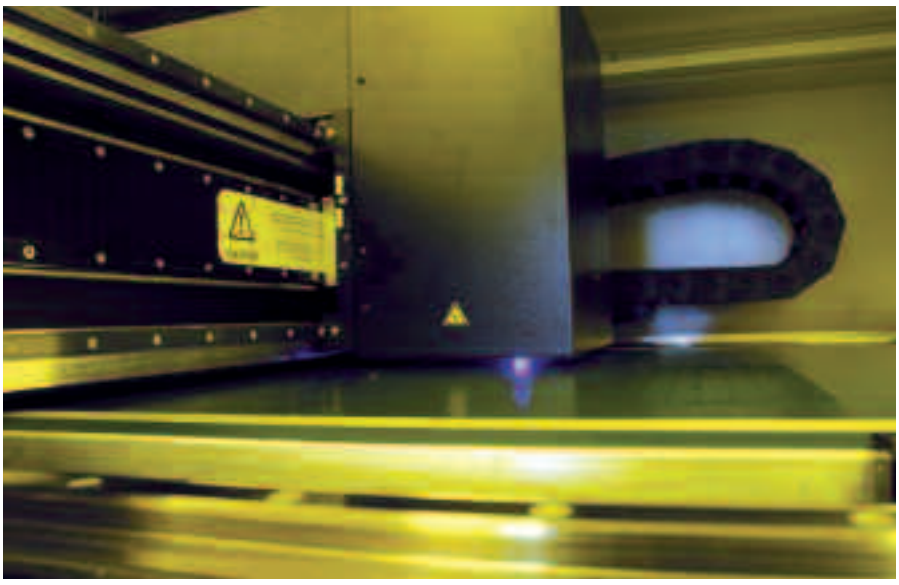
A CTS system preparing for exposure

An operator using computer-to-screen technology

THE CTP MARKET

In offset circles, the question is no longer whether to convert to CtP (computer-to-plate), but when and which technology to best fit individual requirements. This usually means thermo plates, the new violet laser diode technology or analogue plates with UV setter exposure.

The CtP market is on the rise and will



Direct UV exposure on a CTS system

continue to grow. Today the majority of medium-sized offset printers, as well as the larger ones, use computer-to-plate systems. Even small offset printers are now ordering CtP printing plates from service providers.

What consequences does this have for screen printing? The lithographic film market has changed because of the switch-over in technology, and the availability of traditional lithographic film will begin to be restricted in the medium-term. Lithographic film will play a less important role and prices will disproportionately increase. Certain film types will not be available in the long term for the screen printer.

THE GOOD NEWS IS CTS

The best thing that a screen printer can do is to adapt to CTS technology as quickly as possible! The first positive examples have already been seen in large-format printing, where screen printers use inkjet or wax technology for computer-to screen in application fields for industrial glass (automotive and architectural glass), textiles (banner and flag printing), as well as poster printing.

The primary motivation for these printers was to save on the high costs of lithographic film and replace it with more economical alternatives. This is an on-going search to find ways to make even more savings by, for instance, reducing the relatively high costs of wax or ink or even eliminating such products entirely.

With DMD (digital mirror device) technology primarily used in beamers and large picture projection, a technical solution is available. This technology has been used as a UV exposer for offset printing since the mid-Nineties and for screenprinting since 2000.

The development of CTS laser systems is in its early stages and is dependent on the use of special and highly sensitive photo-emulsions. The laser systems currently being supplied do not operate within the spectral light sensitivity normally found in screen printing pre-press systems. DMD technology has the significant advantage that conventional photo-emulsions and capillary films can continue to be used and thus the screen printer does not have to make any changes.

EXPANDING CTS USE

Even today, computer-to-screen is still not widely used by the majority of screen printers as the need has not been recognised and the number of suppliers is low, thus restricting competition. There are currently around ten suppliers or manufacturers of CTS systems – this number will surely grow. As competition is vital for business, future users will be made more aware of the opportunities offered by CTS.

The direction of technical development tends to lie in the fields of DMD and in laser technology, which is restricted due to the spectral light sensitivity. Resolution of 1500 dpi is state of the art today with DMD technology, which is equivalent to the quality of lithographic film with 2400 dpi. CTS for high-end users is already available. However, the majority of screen printers are still using lithographic film but, to remain competitive, companies should seriously think about investing in this new technology.

The CTS systems available today have their advantages and disadvantages. There are already a considerable number of suppliers of different systems, so competition is guaranteed. Every customer should analyse which CTS scenario is the right one for them. DMD technology has to be taken into serious consideration during the decision-making process because it represents a good, technologically advanced, reliable and economic CTS solution.

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INVESTING IN NEW TECHNIQUES PAYS OFF

Ad Versteeg details why pre-press automation enables faster and more efficient screen printing

WITH NEW SYSTEMS IN PREPARATION TECHNIQUES, SCREEN PRINTERS ARE WELL PREPARED FOR THE FUTURE AND WILL IMPROVE THEIR POSITIONS TOWARDS THEIR COMPETITORS, BOTH IN THEIR OWN FIELD OF TECHNIQUES AND IN OTHER FIELDS. FAR-REACHING AUTOMATION IN PRE-PRESS IS EXACTLY THE REASON WHY SCREEN PRINTING COMPANIES ARE ON SOLID GROUND AND WHY THEY CAN OPERATE FASTER, LESS EXPENSIVELY AND MORE EFFICIENTLY.

Those who claim that the screen printing technique will become superfluous in the long run apparently do not know enough about the possibilities of this technique in the first place, and moreover, they are badly informed about the latest developments.

For quite some time, the screen printing technique has been a very efficient and functional process; we have been dealing with advanced printing machines for a long time now and preparation times are getting shorter and shorter because of new or improved techniques. The screen printer is able to compete with colleagues who have other techniques at their disposal, both in terms of price and quality of printing.

ONGOING DEVELOPMENTS

For some time we have worked with direct projection cameras, which were important money-savers for large format screen printers in particular, because of the enormous savings on film costs. With this system, films of smaller formats are blown up to the required format during exposure.

After that we had machines that sprayed the image on the coated screen print mesh, with a black wax-like (inkjet) ink directly controlled by the computer. This meant that the lithographer or the film exposure unit had become completely redundant.

The latest development is one that makes the spraying wax redundant as well. Now it is possible to 'write' directly onto the sensitised mesh by exposing it to light, which means that the frame is exposed immediately as well and that it only has to be rinsed, which takes less time than spraying ink on the mesh. Again, that will be one operation less.

MORE EFFICIENT SCREEN PRINTING

Producing a ready-made screen printing frame is becoming faster and faster – coating, exposing, rinsing, drying and printing is all that is required. It used to be necessary to produce a positive (whether or not in actual size) before the coating, exposing, rinsing and drying. When things were against you, you also needed to retouch in detail, because the edges of the film and dust were exposed as well.

Nowadays the process is more efficient and much less time-consuming; for instance, the Sign-Tronic Stencil Master is one such machine that can make a lot of work superfluous. The offset printer uses the system to expose its plates. Combined versions of the machines are also possible, that is, systems that can process both screen printing frames and offset plates.

The system uses the Digital Micromirror Device (DMD). These chips contain thousands of microscopic aluminium mirrors that can be controlled individually and in such a way that the UV-light is reflected towards the frame that is to be exposed, or is deflected and made 'harmless', because the mirrors are tipped over by about 12 degrees.

The Stencil Master offers fast exposure on standard emulsions at 1270 dpi

DETAILED PRECISION DRAWING

The large amount of reflecting surfaces match the pixels (Fm) that have to be projected. This means that it is possible to draw with light in great detail and with precision. The chip with the mirrors is directed across the frame and projects the image in stripes and the result is a high-precision and smooth image of dots, text or pattern.

The system is available for maximum frame sizes of 4600x2600, 3400x2600, 2700x1800 and 1800x1400 mm. Smaller sizes are available, so screen printing businesses that only print smaller formats of printing but still have to produce a considerable amount of frames per day can also be served in the future.

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CTS TODAY

Thomas G Wübbers analyses different types of CTS systems

FOR SOME TIME NOW THERE HAVE BEEN SEVERAL DIFFERENT COMPUTER-TO-SCREEN SYSTEMS ON THE MARKET, THE DIFFERENCE BETWEEN THEM BEING THE DIRECT AND THE INDIRECT KIND OF SYSTEMS. INDIRECT SYSTEMS INK JET AN OPAQUE TINT OR WAX ONTO THE STENCIL AND UV EXPOSURE IS DONE VIA A CONVENTIONAL METAL HALIDE UV LAMP.

The true direct computer-to-screen (CTS) system will image the complete stencil pixel by pixel. Resolutions of up to 2540 dpi are realistic and the quality, compared to the standard film method, is comparable. The exposure/image times are comparable to the standard system.

There are two different methods of the direct imaging system which compete with each other. One system generates UV emission by a conventional UV lamp; the UV beam is controlled by a micro mirror device to generate the image. The micro mirror device is a chip with multiple single controllable mirrors, which travels slowly over the complete area of the stencil and does the imaging.

The other system uses laser technology. The laser sends a pulsed beam of a specified wavelength which is reflected by a mirror and directed onto the stencil, which moves underneath the laser. This system requires less consumables and personnel.

REDUCING SET-UP TIME

Standardised working procedures, which have been established with offset printing for years, are very hard to establish in the screen printing industry. These standards and working methods have a lot of advantages for the complete manufacturing process. The requirements, therefore, are high quality screen frames, ideally with fitting holes for pre-press, and for the adaptation of the screen frames in the printer.

When using straight and right-angled stretched fabric, moiré/interferences can be avoided. The use of one or possibly two different angles of the stretched mesh helps to limit the storage of stencils and keeps manufacturing costs to a minimum. Emulsion thicknesses and a small RZ-value are also very important for repeatable and high quality stencils.

The use of unmodified inks without additives and the standardisation of squeegee pressure, squeegee angle and the use of defined squeegee rubber will also reduce the set-up time and will lead to a repeatable high print quality.

POTENTIAL FOR OPTIMISATION

Of course all of this requires that the print heads of the corresponding screen printers must have state-of-the-art screen adapting systems, quick change capabilities, scaled adjustments and home-position adjustment. These features will help the goal of shorter set-up times.

Digital imaging of screens and the use of standards for the multiple variable parameters can make the screen print method more effective in all ranges. There is a lot of potential for optimisation in areas such as pre-press, screen making and design of screen printing equipment.

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THE HEXACHROME TRIAL

Marc Doligé recounts the success of an 'Open Day' event last year which demonstrated how screen printing can be an innovative technology

CONSTANTIN IS A COMPANY, BASED IN BARBEZIEUX NEAR BORDEAUX IN FRANCE, WHICH SPECIALISES IN THE PRINTING AND THE TREATING OF PLASTICS AND CORRUGATED CARDBOARD. LAST YEAR THE COMPANY INSTIGATED AN AMBITIOUS PROJECT IN SCREEN PRINTING: IT INVESTED IN A THIEME 5000 XL SIX-COLOUR SCREEN PRINTING LINE WITH A PRINTING FORMAT OF 1600X2100 MM. THIS INVESTMENT ENABLED THE COMPANY TO INCREASE PRODUCTIVITY AND OFFER CUSTOMERS 'HEXACHROMY' – PRINTING A SIX COLOUR PROCESS DURING ONE SINGLE OPERATION STEP.

In order to highlight the advantages of this technology compared with quadrichromy (the four colour process), Constantin organised two 'Open House' days in March at its workshops with its partners Thieme and VFP Ink Technologies / Tripette and Renaud. During this event, large format substrates were screen printed in six colour process on a Thieme automatic 6-colour line under real production conditions. A number of leading screen printing companies attended this event, which was a technical and social success.

Constantin's printing operators prepare the 6 ink colours

The Thieme 5000XL six colour machine showing 4 and 6 colour process printing

Many screen printing companies attended the event

NEW INK SERIES

VFP Ink Technologies used the occasion to present its new Multipop UV ink series, specially designed for printing on various POP media types (paper, board, PVC, corrugated PP, styrene etc.). The 1400x1800 and 1400x2050 mm prints were done with a 72 lines/cm image, using screen stretched by Tripette and Renaud with NBC L screen mesh.

During this event, Thieme also presented the technical features of its new generation of 5000XL multi-colour screen printing lines, such as fine adjustments, printing regularity, smooth running of the machine and set-up times of under five minutes per print station.

SIX-COLOUR SCREEN PRINTING

The Thieme 5000 XL is the latest evolution in the Thieme 5000 series. This machine is able to print large sheets up to 2000x3030 mm at a speed of up to 3000 m^2/h. It is equipped with a number of technological features such as a fully programmable squeegee unit, a gripper system capable of transporting thicker substrates up to 10 mm, its 'Speed Set Up' ensuring fine adjustment and quick positioning of the screen, and the UV intermediate dryer with AEM (Advanced Energy Management), allowing substantial power savings.

With this new generation of machines, Thieme has placed the emphasis on a simple and user-friendly operating concept that is similar to offset printing. The machine is completely set up by entering the format, the thickness and the weight of the substrate on the touch screen.

CHINA BRANCH OFFICE

VFP Ink Technologies has opened a new Chinese branch office in Scenzhen. This office will be for technical and marketing support to VFP's distributors, as well as technical support for VFP ink end users. The telephone number of the new office is +86 755 834 79324 and its fax number is +86 755 834 79424.

(From left to right:) Christian Borel (Européenne d'Impression), Denis Constantin (Constantin), Marc Doligé and Daniel Degueurce (both VFP Ink Technologies) check the 6 colour process printing results

EVENT HIGHLIGHTS

The event highlighted several advantages, such as the efficiency of chocks between different prints (as only one kind of ink was necessary to print the various media); the high quality of the new ink was also appreciated by printing operators and visitors. The optical density of the VFP Multipop UV ink, perfect stability of the dots, quality of the registration and colour gamut possibilities were also highlighted, as was the absence of moiré.

This event also highlighted the increased colour possibilities of six colour process printing. Chromatic details are more contrasted and spot colours are more precise. The difference in quality between two identical images printed with 4 and 6 colour process techniques impressed the many screen printers present. The new VFP ink is available in 4 and 6 colour process.

IN CONCLUSION

This open house event proved that screen printing, often wrongly considered as the 'Cinderella' technique of printing, is a noble and innovative technology. Thanks to automation and the important technological evolution of UV inks, screen printing is becoming a fully industrial technology.

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BUILT TO COMPETE

Harald Gavin explains how modern screen printing machines can increase the competitiveness of direct screen printing onto 3-D items

THE COMPETITIVENESS OF DIRECT SCREEN PRINTING ONTO PLASTIC TUBES, CARTRIDGES AND GLASS OR PLASTIC CONTAINERS/BOTTLES HAS INCREASED THROUGH ADVANCES IN THE DESIGN AND MANUFACTURING OF FULLY-AUTOMATIC, MULTI-COLOUR SCREEN PRINTING MACHINES; THESE MACHINES ARE OPTIMISED FOR EITHER PRINTING AT VERY HIGH PRODUCTION SPEEDS OR HANDLING A WIDE RANGE OF COMPLEX-SHAPED ITEMS.

Advances made in mesh material, screen coating, squeegee materials, UV inks, UV drying systems and surface treatment systems have improved overall process reliability; screen printers can reduce staffing levels and benefit from improved machine capabilities that make printing of intricate images at high speeds possible.

Figure 1: Adjusting the excenter drive of a screen printing machine with rotary indexing table

Figure 2: Printing a wrap-around onto an oval container; the diagram illustrates the required movements of squeegee, screen and container

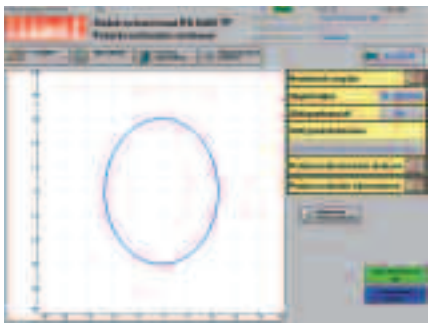

Figure 4: The control system has read the polar coordinates of a cross section of an oval bottle and displays the shape of the cross section at the touch screen

HIGH PRODUCTION THROUGHPUT

Designers of screen printing machines use mechanical drives for achieving very high production speeds; these drives can be designed to have the rigidity required for high-quality printing at high speeds. 1-up machines can consistently achieve a production throughput of 100 items/minute, while 2-up machines can achieve a production throughput of 180 items/minute. Six or eight colours can be printed with accurate colour to colour registration, and the mechanical drive elements will maintain their accuracy during years of 24/7 production.

Mechanically driven screen printing machines have quick changeover features; for example, in a machine with a rotary indexing table, a single adjustment (see figure 1) of an excenter drive for screen carriages and fixtures sets screen speed and item rotation for printing onto cylindrical items that have a specific diameter.

Mechanical drive elements are limited in the variety of shapes that they can handle. For example, changing the drive set-up of the printing stations for printing onto flat areas, such as the sides of square bottles, is possible, but a set-up for printing wrap-arounds onto oval bottles or containers is not possible.

PRINTING ONTO COMPLEX-SHAPED ITEMS

When printing onto complex shapes, servo-based screen printing machines do not have the same limitations as machines with mechanical drives, and production speeds of the servo-based machines can be as high as 80 items/minute. A servo system can accept a set of parameters that is electronically sent from a machine control system. These parameters are used to either make servo motors follow electronic cam profiles, or to simulate gear boxes.

When each print head, each screen, each squeegee and each fixture is driven by its own individual servo motor, and a motion controller controls all print movements, then one-pass multi-colour printing onto complex-shaped bottles and containers is possible.

The simultaneous movements of screen, squeegee and fixture during printing depend on the shape of an item:

- a cylindrical item is rotated, the screen moves horizontally, the squeegee is stationary
- a square item with flat printing area is held stationary, the screen is stationary, the squeegee moves horizontally
- an oval item is rotated when a wrap-around is printed, the screen moves horizontally, the print head with screen carriage and squeegee moves vertically, the squeegee moves horizontally.

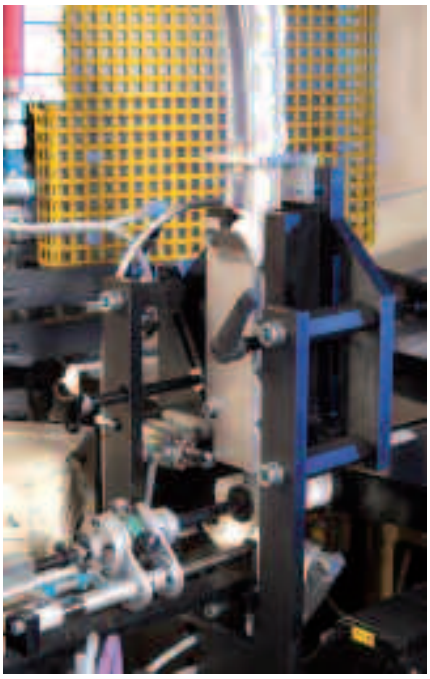

Figure 3: Capping station for cosmetic tubes integrated into a screen printing machine

The print movements for printing a wrap-around on an oval container are illustrated in figure 2; the centre diagram shows clearly that the squeegee has to move not only vertical with the print head, but also backwards and forwards horizontally to maintain the line of contact with the item. Printing a wrap-around on a square container that has round edges ($r > 10$ mm) is also possible.

The print movements in a printing station are independent of the movements in the other stations. Therefore it is possible to print onto differently shaped surfaces at different printing stations. For example, an image can be printed onto the body of a bottle in one station, an image can be printed onto the neck of the bottle in a second station, while in a third station a conical image can be printed onto the conical shoulder of the bottle.

HIGH EFFICIENCY

High efficiency is achieved by eliminating non-value adding steps in the decoration process and by increasing machine availability through a reduction in times required for job changeovers, routine maintenance and repairs. The independence of the print movements in the printing stations of servo-based screen printing machines eliminates the need for a second or even third machine pass of items that have differently shaped printing areas and require specific print movements for each printing area.

Figure 5: Printing onto an oval bottle

Today's screen printing machines have six or eight printing stations, enabling screen printers to meet with one machine pass the demand for more colours in a printed image; this is not possible with older machines that have only three or four printing stations. The modular design of a state-of-the-art screen printing machine gives designers options for streamlining the decoration process by integrating ancillary units into a screen printing machine, for example:

- a capping station (see figure 3), a torque control station and a lacquering station can be integrated into a six-colour tube screen printing machine
- a surface treatment station for glass hollowware can be positioned on an infeed conveyor, the glass hollowware can be loaded into the screen printing machine immediately after surface treatment.

Set-up times of mechanically driven machines are significantly reduced when an excenter drive is used for driving screen carriages and fixtures, as described previously. Extensive motorisation and motorised positioning can significantly reduce the set-up times of servo-based machines. The operator can input item dimensions at a touch screen or the machine control system can read the item dimensions from a specially formatted CAD-file (see figures 4 and 5). The control system uses the item dimensions to automatically pre-set the machine and to adjust the print movements for printing onto the item. A comprehensive job management with job storage and recall also drastically reduces set-up times for repeat jobs.

High-quality components, such as lifetime sealed bearings, reduce the chances of machine failure. However, should a failure occur, then a remote diagnostic link to a machine control system enables the machine manufacturer to check the machine status and assist operators on site in troubleshooting. Servo-based machines have enhanced error reporting because servo drives – in contrast to mechanical drives – can monitor their own performance and can initiate the display of error messages on the touch screen. A service engineer examining a list of error messages in an error log can not only view the error history as seen by the press control system, but also the error history of an individual servo drive.

NON-VISIBLE INTERNAL SOPHISTICATION

Today's automatic high-performance screen printing machines use sophisticated mechanical and electronic designs, but the internal sophistication is not visible to operators. Experienced screen printers can fully utilise the capabilities of these machines and are able to profitably print images of superior quality and significantly increase screen printing's competitive edge.

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CYLINDER PRESS PERSPECTIVES

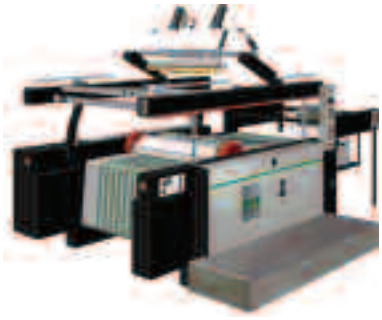
Axel Kaiser outlines a cylinder line programme for the screen printing industry

MODERN ELECTRONICS PLAY A VITAL ROLE IN STATE-OF-THE-ART MACHINE DESIGN. FROM 1980, ALL FULLY-AUTOMATIC SPS MACHINES WERE FITTED WITH MICROPROCESSOR CONTROLS AND ELECTRONICALLY OPERATED DRIVE SYSTEMS.

SPS STOP cylinders were first manufactured in 1957; the original SPS STOP Cylinder Principle still forms the basis of today's core production programme. Here, the cylinder only turns during the print phase and remains stationary during the return movement of the screen. During the stationary phase, the incoming sheet is directly guided to the lay stops in the cylinder. In this way, high precision registration can be maintained, regardless of turning speed.

Full in-line integration joins press with feeder, dryer and stacker to a uniform configuration

The Vitessa XP



The Vitessa SL

CYLINDER MACHINES

Screen printing on cylinder machines generally offers a number of advantages. Due to the cylindrical form of the print base, a 'natural' distance is given between the printing material and the screen, both in front of and behind the squeegee edge. Beyond this, the cylinder design allows the off-contact to be set, even close to zero. As a result, the lowest squeegee pressure can be applied, avoiding print distortion and stencil wear. The additional lifting of the screen away from the printed surface by peel-off mechanisms, as with flat-bed machines, becomes unnecessary. The result is high-precision image reproduction down to the smallest detail.

A nominal speed of a maximum of 4200 per hour for the fastest model (the Vitessa XP1) means that reliable production speeds of above 3000 per hour – if ink, substrate, and job profile meet such high speed requirements – can be reached.

The stationary heavy-duty squeegee bridge in the STOP cylinder machines can be equipped for ease of operation with automatic features. The squeegee actuation at the print start is automatically synchronised to the machine sequence, the gripper margin can be adjusted to demand from the control panel position, and squeegee kinetics / dynamics and pressure transmission are pneumatically / hydraulically controlled, providing both accuracy and repeatability.

DRYER TECHNOLOGY

Automatic cylinder machines with a high print capacity can only be effectively operated when combined with a dryer which is both fully integrated into the print-line and capable of reliably handling the sheet stream, even at maximum press speed.

SPS jet dryers have well-balanced energy transfer. Geometrically optimised spaced jets provide an even flow of air across the surface of the printed material. The air pressure for the jet zones is generated in the section hoods. The high air speed achieved means the degree of efficiency at relatively low temperatures copes with the fastest cylinder print runs. It is possible to integrate infrared and UV modules for customised combination dryer systems. The synchronised sheet transfer between machine take-off and dryer infeed enables good sheet conveyance by automatic transfer speed adjustment. Cylinder press, modular jet-dryer and sheet stacker are finally combined to a uniform print-line structure by the central project management team.

Substrates which are thermally very sensitive, and inks with slow solvent (or water) release still require long-term drying. Dryers with room air re-circulation are employed in the production of ceramic decals. Where high capacity print runs are involved, the length of the configuration can be reduced by double track operation. One-track versions of the SPS wicket dryers, with integrated heating, are used for specific industrial production purposes, such as printing on plastic films or the curing of water-based inks for textile transfers.

APPLICATIONS

The technical and commercial advantages achieved through the use of cylinder press systems, also with relatively low runs and at reduced process-defined speeds, now embrace a vast range of production areas in sheet-fed screen printing. The 'industrial' assignment of machines with a cylindrical basis – i.e. the use of such presses for non-solely graphic coating processes, using 'functional inks' – is gaining in importance. The characteristics of the screen printing technology – such as its adaptability to varying substrates, its versatility with regard to many kinds of printing media and the possibility of defining the layer of the medium applied – have made it a key finishing method for a variety of products, such as:

- refinement and upgrading of offset pre-prints by manifold effect colours, including traditional spot varnishing
- cover coats and protective layers, gold and silver colours, conductive fields on plastic (bank) cards
- security documents on plastic sheets (such as driving licenses or passports) or on paper (such as bank notes)
- ceramic decals in conventional and UV technology with usually more than seven and up to 50 colours per sheet
- automotive decoration and dials
- formable FIM (IMD) films for 3D objects and membrane switch foils
- textile transfers and sublimation prints for indirect quality decoration.

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DECORATING OPTICAL DISCS

Karoly Lauthan predicts a bright and beautiful future for screen printing in optical disc decoration

OF RECENT TIMES IT HAS OFTEN BEEN SAID THAT SCREEN PRINTING IN THE OPTICAL DISC DECORATING MARKET IS DEAD. COMMENTS SUCH AS "DIGITAL PRINTING IS THE FUTURE" AND "THERE IS NO SPACE FOR SCREEN PRINTING" ARE OFTEN HEARD. AT ESMA WE ARE MORE CERTAIN OF THIS ANCIENT FORM OF IMAGING'S FUTURE.

Our certainty comes from considering the history of imaging technology. After the invention of photography, which produced more accurate pictures more quickly, many thought that the art of painting would disappear. Of course it has flourished. More recently the advent of moving pictures was thought to be the death of photographs, but again the art of photography has continued. Although technologies advance, different imaging techniques have their place and are only limited by our imagination.

Screen printed CDs

DVDs are a premium product and must be decorated in the best way possible. Today offset printing is a popular process for decorating optical discs. Offset has its own advantages, such as high productivity and resolution, leading to perceived better quality. But does striving for finer detail actually mean better quality? Screen printing is regularly used for printing 150LPI half tone images with the added advantage of a versatility that designers dream of. Surely this must be considered better when it comes to generating a high impact image?

Many CDs are decorated by the screen printing process, taking advantage of the enormous potential that it offers. Specially formulated inks are available in a wide range of vibrant colours; fluorescent, pearlescent, metallic and even luminescent inks can be used to create stunning visual effects. With screen printing it is possible to directly print a high gloss or matt white background. Speciality inks offer further possibilities. Imagine what could be done with thermochromic inks! High value discs could benefit from security inks.

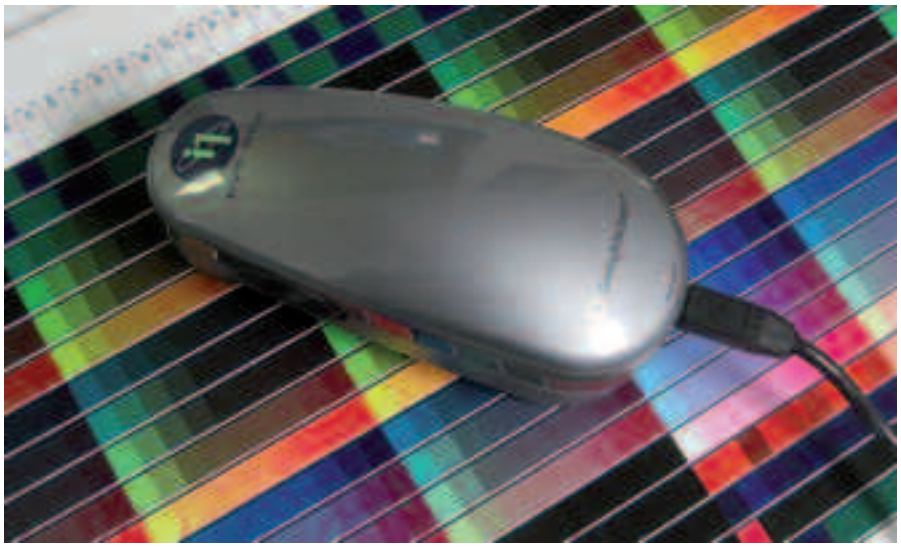
Screen printing may be considered to be a black art as manufacturers strive for consistency in production and process capability. This, too, is changing. Basic parameters such as the positive, mesh, stencil, ink and squeegee are now easily controlled and measured. This allows control of the whole process, which makes it more cost-effective. The many CTS systems now available are reducing design to production time further still.

With this unique combination of industrial production capability and artists' design versatility, screen printing is very much the printing process of the future. At ESMA we firmly believe that the future for screen printing in the optical disc market is bright and very beautiful.

Karoly Lauthan is a member of the ESMA Applications Committee

COLOUR MANAGEMENT BASICS

Jeff Burton explains how the use of colour management systems can help printed material achieve a greater degree of colour predictability



A colour optimiser can be used to manually scan colour targets and to calibrate colour for tools such as computer monitors

THE WAY YOU SEE IMAGES ON A COMPUTER SCREEN AND THE WAY THEY LOOK IN HARD PRINTED FORM ARE GOING TO BE DIFFERENT, THAT'S A FACT. THE DIFFERENCE LIES BETWEEN WHAT'S ACCEPTABLE TO YOU, AND WHAT IS ACCEPTABLE TO YOUR CLIENT. COLOUR MANAGEMENT IS A PROCESS THAT ENABLES YOU TO OUTPUT PRINTED MATERIAL WITH A MUCH HIGHER DEGREE OF COLOUR PREDICTABILITY THAN BY JUST GUESSING.

CHARACTERISING INPUT DEVICES

The purpose of a colour management system (CMS) is to provide colour consistency and predictability throughout the entire workflow. The CMS does this by correcting the differences in colour introduced by each device, thus ensuring consistency in reproduction. The first important step when setting up the CMS is calibrating the input device in order to understand the small colour changes that particular device introduces each time an image is scanned. Calibration must be performed under optimal conditions.

Characterisation of an input device is simple. The device scans a reference image containing well-defined colour patches, and these 'actually measured' results are related to the 'ideal' values measured with a spectrophotometer in the manufacturer's lab and supplied by internet download. The two sets of data are assembled to yield a complete profile of where that particular scanner differs from the ideal. Since characterisation is so important, most new scanners are delivered with both the items required for the characterisation:

1. A reference image (an IT 8.7/2 reference target for input characterisation). The target is specifically for reflective art scanners; transparencies are available for film scanners.
2. A set of reference values for that same image. These values are read by the calibration software and compared to the scanned values; they appear in text format.

Once the CMS understands the individual characteristics of your scanner, it will be able to correct for these every time you perform a scan. Let's assume that your particular scanner yields results that are a little strong in the blues and slightly weaker in the reds: once your CMS knows this about your scanner, it will control the blues and adapt the reds accordingly to yield results that correspond to the ideal.

All colour management systems depend on device profiles that store the colour characteristics of each model of input device, described in terms of the device-independent CIE colour model. The pre-made, generic device profiles that some colour management systems come with describe the manufacturer's specifications for the product. However, if the device is not actually performing to those specifications, the profiles will be less accurate. To bring the device in line with its intended specifications, regular calibration is necessary.

CHARACTERISING MONITORS

Another one of the colour management system's roles is to ensure that your computer monitor provides as accurate a representation as possible of the colours in a given image. In order to carry out this process, the CMS will first analyse how the monitor behaves under controlled conditions.

Four calibration elements must be set on the monitor in order to characterise it properly:

A strip scanner can increase the efficiency of the creation of custom colour profiles by automating the colour target scanning process

brightness, contrast, gamma levels and white point temperature. The brightness and contrast levels are set manually; the gamma levels and white point temperature of your monitor are set within the monitor's own software, and are typically adjustable by the user from the control panel within the system software.

The next crucial step of the characterisation process involves the use of a light meter or colorimeter, or sometimes even a spectrophotometer. These colour measurement devices generally come with a rubber suction cup which affixes it directly onto the front of the monitor, much like a miniature camera strapped onto a computer screen. The CMS takes control of the monitor and tells it to broadcast different colours onto the screen. The device measures the colour emitted by the monitor and sends this data back to the CMS. The CMS then creates a profile of the monitor's performance by relating the actual colour values measured to the ideal colour values that should have been emitted.

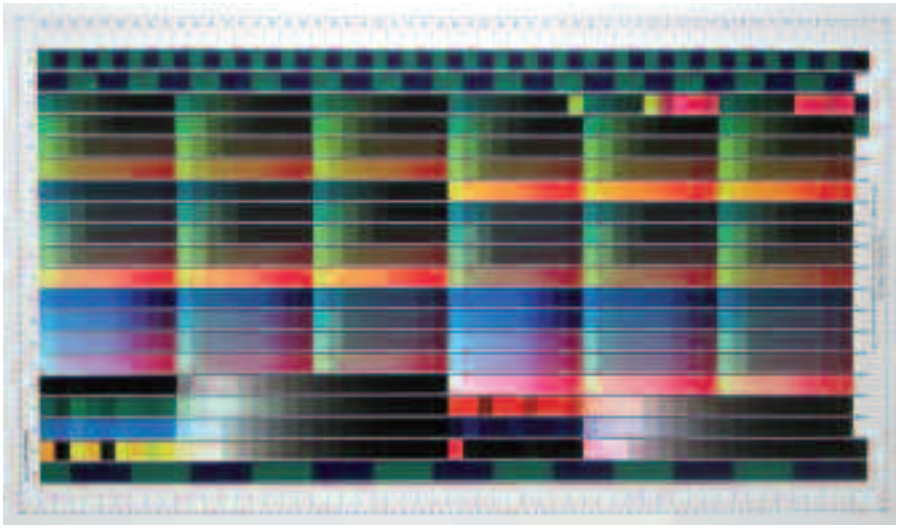
Certain colour management systems do not need to undergo a complete measurement procedure every time the white point or gamma level setting is altered, they can automatically adapt to a new white point or gamma level, or both.

INPUT LIMITATIONS

The different types of input devices are CCD ('Charge Coupled Device' is a semi-conductor image sensing device) scanners, digital cameras and drum scanners, each of which is available from many different manufacturers. Whatever the type or the brand, all input devices function approximately in the same way: they expose the original with light and measure the amount of red, green and blue light reflected back off or transmitted through the object. These measurements are converted into digital data, which is then recorded onto a computer's disk. Some scanners save the original RGB data, while older scanners convert it automatically to CMYK, drastically limiting the amount of colours in the gamut.

With flatbed scanners, light is reflected off the original onto a set of CCDs which are coated with filters that break the light into its RGB components. The number of CCD elements in the scanner determines the resolution of the scan. With drum scanners, a light source is moved in tiny increments across the original. The reflected light is then sent through a photo-multiplier tube, which breaks the light into its RGB components. Other circuitry converts the analogue light information into digital CMYK separations.

It is important to note that input devices – be it a digital camera or a scanner of any nature – respond differently to the same colour information, much like we who, as individuals with different visual sensory systems, perceive colours differently from one another. Indeed, different types of input devices will yield slightly different colours for exactly the same image. Similarly, different brands of the same type of device will also yield slightly different colours from one another. Also, two identical devices bearing the same label from the same manufacturer can even measure different colours from one another. The characteristics of the light source – such as its age, the filters used and the optical path along which the image travels as it is scanned – can all introduce colour discrepancies.



A colour reference target is used to create custom colour profiles for printers or media products

To create a digital image, the analogue charge generated by CCD elements is quantified into a finite series of steps by an analogue to digital converter. Each step is assigned a unique binary number representing a specific tone or grey level.

PROFILING OUTPUT DEVICES

The same image printed onto various output devices can yield different results, hence the need to adequately calibrate the specific output device. Characterising an output device is similar to characterising a scanner or a monitor; in this case, it is best to make a print of the industry standard IT8 7/3, which contains 928 small patches of different colours (defined in CMYK values).

Each one of the colour patches on the IT8 7/3 you output is measured with a colorimeter or spectrophotometer. As it reads the colour values of the different patches, the CMS relates the actual colour printed to the original CMYK values for each colour patch. Thus, the CMS is able to build a complete profile of the printer. Once this profile is built, the CMS will automatically perform the necessary adjustments on the colour information sent to the printer. For example, if the measurements of the test chart show that most test patches are a little too red, the CMS can compensate for this by reducing the amount of red in the images.

Before printing the IT8 7/3, you must establish a stable environmental situation in which all the output parameters will be the same as when you eventually execute the print job. The medium you use (the type of paper or other support material), the ink or the screening techniques – even the temperature of your work environment – all influence the accuracy of your characterisation.

It is important to remember that the profile you build for a particular situation will not be valid for any other situation, i.e. one in which one or more parameters will have been altered. Check your situation regularly and don't hesitate to re-characterise your output device. Some of the better colour management systems available today offer the option of measuring and comparing (onscreen) the profile being built with the most recent profile recorded. This allows you to decide whether you would like to implement the new output profile or not.

IN CONCLUSION

Whether you implement some or all of the parts of colour management into your workflow, the choice is dependent upon the quality and colour consistency of the final output desired. Can decent final products be produced without colour management? Yes, but colour management enables you to achieve consistent, quality output from multiple types of input and output devices.

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Grünig to display new products at FESPA 2007

Grünig has announced that it will be attending FESPA 2007 in Berlin, Germany from 5-9 June and has invited show visitors to a welcoming aperitif at its stand on the opening day between 5 and 7 p.m.

The G-Bond UltraCure has been developed with KIWO

Amongst the new products that Grünig will be displaying at the exhibition is the G-Prep 370, a compact and automatic frame cleaning system which uses high-pressure water nozzles to remove residual mesh and glue from frame profiles.

A new stretching and handling system with automatic gluing for serigraphy meshes has been developed in partnership with KIWO; the G-Bond UltraCure enables all stretching and gluing processes to be programmed via a touch-screen terminal.

Also being presented for the first time is the G-Stretch 270 stretching machine, which has motorised stretching beams and a telescopic design so that is can be adapted for different screen sizes. A wide range of washing and coating systems will also be on display.

Grünig will be exhibiting at booth B420 in hall 2.2; for more information on FESPA 2007, see page 33 of this issue.

US solvent inks now available in Europe

Digital Ink Company has announced the availability of the US manufacturer Nazdar's Lyson 2000 series of solvent digital inks for the European market. Designed as a low odour alternative to full solvent inks, the Lyson 2000 Series inks can be installed immediately after OEM inks without prior flushing or cleaning. The colour gamut is calibrated to original Eco Ultra inks to enable users to continue to use ICC profiles.

Marabu celebrates 20 years of UV technology

Marabu will be celebrating 20 years of producing UV inks at FESPA 2007. In 1987 Marabu introduced its first set, a matt and a high-gloss UV ink, which were both general graphics inks. Several more products over the years, including UltraVision for sceen, print and pad were introduced, and last year the company displayed its Ultraglass UVGL organic inks at Glasstec.

At the FESPA exhibition this year, Marabu will be introducing a new graphic screen all-rounder, the Ultragraph UVSP, which the company claims is "enormously effective" in reducing UV energy costs.

'Green' fabrics

3P InkJet Textiles offers a range of eco-friendly fabrics for inkjet printing; the textiles contain no heavy metals, PVC resins, phthalates or fungicides. Value fabrics, made of 100% polyester, can be used for soft signage, flags and banners, displays and interior design. Value textiles are produced according to the environmental management system EN ISO 14001 and the quality management standard EN ISO 9001, avoiding atmospheric and environmental pollution.

On-demand switching between display and textile applications

EFI has announced that its VUTEk 3360 superwide format printer can now switch between dye sublimation and solvent applications in minutes. The 3360's Fusion option is an ink delivery system that allows users to switch from traditional solvent-based applications, such as exhibition and display graphics and point-of-purchase materials, to dye sublimation textile applications in two minutes without the need to flush the entire system.

The VUTEk 3360 system's three metre roll-to-roll configuration, together with the new Fusion option, enables the use of solvent or dye-sublimation solvent inks for printing on a wider range of substrates, including direct printing on textiles. The Fusion system is also available as an upgrade for the VUTEk UltraVu II 3360 or later systems.

EFI also recently launched its new UltraTex dye sublimation ink for use with the VUTEk 3360. This ink solution is wash-resistant and dryer-resilient for reusable indoor/outdoor graphics. The new launch follows the introduction of the first solvent-based superwide printing ink made from a renewable resource, corn, which is the only ink recognised by the US Environmental Protection Agency. BioVu ink has no harmful VOC emissions and is non-hazmat. Another new product is the UV Series 50TM UV-curable ink, which allows printing on a wide range of rigid substrates including glass, lexan, acrylic and coroplast.

The 50TM UV-curable ink can print onto a wide range of rigid substrates

New virtu-printer at FESPA

Spühl will show its new virtu RS35 printer at FESPA 2007. The user-friendly product, which is capable of printing with white colour, places special emphasis on maintaining high safety standards for users and the environment. Spühl is exhibiting in hall 6.2, booth D710.

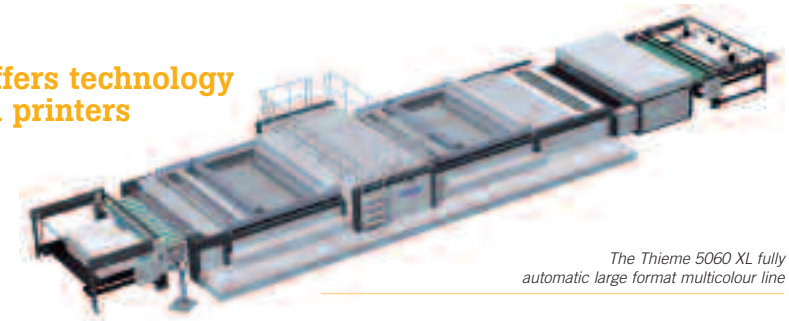
New 30 kg take-up system for Rockhopper 3 and Spitfire

Wide-format printer manufacturer Mutoh Europe has started shipping a new 30 kg take-up system for the Mutoh Rockhopper 3 Extreme eco-solvent and Spitfire Extreme mild-solvent printers. The new Tension Winder 30 is a 64" (162 cm) take-up system that will allow motorised winding of finished prints up to a load of 30 kg. It has been specifically developed for sign makers mainly doing short run production jobs and/or frequently printing onto different types of media.

Flatbed UV-inkjet production printer

NUR Macroprinters has released its Tempo Q, a UV-inkjet flatbed printer which is a higher resolution version of the company's flatbed UV-inkjet production printer. It prints directly onto rigid and roll-fed substrates and is designed to produce very high image quality of up to true 1270 x 800 dpi for a broad range of wide-format printing applications. It accommodates rigid substrates up to 3.2 x 2 metres and 5.1 cm thick, as well as roll-fed media up to 221 cm wide.

Thieme offers technology for screen printers



The Thieme 5060 XL fully automatic large format multicolour line

Screen printing machine manufacturer Thieme will be demonstrating its latest system technology at FESPA 2007. The Thieme 5060 XL two-colour line, part of the company's 5000 XL large format series of multicolour lines, is a fully automatic system with UV intermediate dryer and stacker. Easy set-up and access allow minimum tooling times when dealing with frequent changeovers.

The 3020 three-quarter automatic screen-printing system has three options (automatic screen cleaner, Wandres cleaning unit and anti-drip system), whilst the ScreenClean screen-cleaning unit automates the cleaning and opening of the mesh during printing.

Thieme's TSC squeegee cutter is able to cut all of the industry's typical polyurethane squeegee rubbers using a single cutting operation with a rotating blade to deliver a smooth, unbroken surface.

Thieme will be located in hall 2.2, stand B430 at FESPA 2007.

Sefar exhibits at Fespa 2007

Sefar, the Swiss-based manufacturers of screen printing mesh, stretching systems and measuring instruments, will focus on two main products at FESPA 2007.

The Sefar PCF is a pre-coated screen printing mesh for high performance industrial use, and the Sefar LDS is a laser technology-based exposure system for small and medium format screen printing stencils.

Sefar will be exhibiting at stand B210 in hall 2.2 at Messe Berlin.

The Sefar LDS

New patch for ONYX Version 7 products

ONYX Graphics has announced a new patch update for Version 7 software products including ONYX ProductionHouse, PosterShop and RIPCenter. The 7.0.5 update includes several enhancements such as improved Pantone spot colour matching, better ICC build default settings, cutter precision resolved specifically for European systems, new ink restriction and ink limit swatches for new 12-colour printers (CMYKRGB) or an improved ICC profile generator. The user can also download a range of printer drivers with profiles specifically created for use with ONYX Version 7.0.5. The update can be downloaded from www.onyxgfx.net

New textiles up to 5 metres wide

MCK-Trading has developed digital printable textiles up to 5 metres wide, which it will present at this year's FESPA show in Berlin. The 200g Deco T200K is designed for decoration purposes and exhibition stands and can be printed with solvent or UV inks. The Omni T350CK, a 350g textile, is coated on one side which can be printed with either solvent or UV ink; the reverse side can be printed using sublimation technology. MCK-Trading will be in hall 6.2, booth D840.

SCREENING SUCCESS

Specialist Printing takes a look inside Saati, one of the most successful producers of screen printing applications

SAATIPRINT IS A MAJOR MANUFACTURER OF FABRIC FOR SCREEN PRINTING APPLICATIONS. SAATI WAS FOUNDED BY THE GRANDFATHER OF ITS CURRENT PRESIDENT, WHO TOOK OVER FROM HIS FATHER; IN EACH GENERATION THE GRANDFATHER, FATHER AND SON HAS BEEN THE SOLE SHAREHOLDER.

The company started in 1935 as a local weaver of technical fabrics, and during the Second World War it wove military fabrics. After the war, Saati became involved in the screen printing industry when synthetic fibres became available – the company claims to be the first weaver in the screenprinting world to use polyester.

Today Saati has several factories and employs more than 800 people around the world. It follows a strategy of locating itself close to its customers; it has subsidiaries in the USA, Mexico, Brazil, China, Spain, France, Germany, Italy and last year it acquired an Indian company. It is headquartered in Como, Italy.

SaatiPrint ensures excellent dimensional stability, regularity, lastingness and quality finishing of polyester and polyamide

MESH PRODUCTION

Saati's mesh is manufactured from a special polymer-based yarn that is manufactured by only four producers in the world. "Oil prices should affect us because we use a lot of polyester-based yarn," explains Daniele De Rosa, the Managing Director of SaatiPrint, "but in general it is so peculiar to our industry and the supply is so small that in practice, the price of the fibre is very little dependent from the oil prices. Apart from our users, there are no other users of this specialist yarn."

Saati believes it is competitive within Europe and America and is growing consistently each year in China. "The formula we put in place seems to be the right one because we are growing constantly," says

Saatichem high-quality photosensitive emulsions and auxiliary chemicals for screen printing

Daniele. "We were the first European company from the screen printing business to have a legal entity in China. Last year we had tremendous growth and this was possible because we have been seen to be competitive against the Chinese weaver."

Low wages and the lower price of raw materials in China contribute to the low cost of finished products. "Chinese weavers mainly use the local-made fibre that has a completely different performance," Daniele explains. "Also, we need a lot of capital to be invested to produce our fabric. Whilst the biggest players in our arena use up-to-date looms, we know from our travels that most of our competitors in emerging countries frequently use second-hand machines, making depreciation a much less important factor."

As well as cheaper production costs, there have been instances of Chinese counterfeit mesh appearing on the market to hamper competition. "We have had a few cases of local companies copying our brand and trademark, but we prosecuted these cases," De Rosa confirmed.

When Saati opened its Shanghai office in 1998, the company registered its trademark as a Chinese legal entity so it was protected by local law. This meant that the counterfeiters were forced to stop and had to pay a large amount of money to Saati for damages. "It is a very positive story we can tell," Daniele smiles, "we used the law to defend our own interests."

ADVANCES IN PRODUCTION TECHNIQUES

This intense competition means that Saati has to continually focus on advances in production techniques to reduce the labour content of mesh. "This is a big issue because in every emerging country there are competitors starting weaving and there are customers open to buy on price," Daniele asserts. "So we have to stay sound economically whilst continuously improving."

To this end, Saati usually launches two or three new products each year in the screenprinting market. "We have recently developed a very special fabric for screenprinting especially for large formats," Daniele says, "aiming to reduce the quantity of ink needed to obtain a good quality print and, at the same time, increasing the definition and resolution of the image that is to be printed."

"We also launched a special product for electronic printing, where special performances are required of the mesh in terms of stability and tension," he continues. "The highest degree of differentiation a weaver has is in the finishing department, where Saati is probably the most complete weaver in the world, offering very wide opportunities in terms of being efficient."

Graphic, textile, ceramic, electronic, glass and optical disc are the most specific applications for SaatiPrint fabrics

Saati was, Daniele claims, the first company in the world to develop a plasma treatment machine that can treat very wide meshes. "We even have several patents on surface treatment on mesh with specific chemistry," he continues. "Saati is not only a textile company but also a chemical company – we formulate not only our emulsion, but many different types of resin that we use in composites. So we have specific knowledge on how to treat the surface and can change or adapt the behaviour of the fabric to the specific job the customer is printing."

THE PRODUCTION PROCESS

Over the last two years there has been a major reorganisation of the Saati group to make it more efficient, which was completed in February 2007 and resulted in all the previously independent business segments being merged. Giulio Salvalaglio is the Production Manager and is involved in the whole production process.

"Production is separated in different parts of Europe and we launched a project to reduce the production and delivery time," he explains. "Saati has always produced at very high efficiency, so it was a difficult process to offer the same high quality but to increase our capacity to be able to meet the customer's demands even faster. However this is what the market required for us to be competitive."

ADVICE FOR PRINTERS

Saati has advice for printers on how to extend the life of their mesh. "The Hibond treatment allows the stencil (the compound of fabric and emulsion) to increase the life and durability in any condition of printing," De Rosa offers. "This is expressed mainly in heavy printing conditions, such as when you print in mid-temperature or on aggressive and abrasive environments, such as glass printing. This has resulted in a lifetime duration of the stencil of up to four times longer than a normal fabric."

Saati believes that customers can best receive technical support through education, and has technical laboratories in the Como, Shanghai, New York and Sao Paulo offices to enable the company to provide free technical training all over the world. The company also has a team of travelling experts that can help customers with specific printing problems.

Nowadays printers have to stock a number of different meshes to print different jobs. Whilst some printers may see this as more of a problem, Saati sees it as an opportunity. "I do believe that having access to such a huge variety of fabrics is more of an opportunity than a challenge because this allows the printer to very precisely customise the job," Daniele says. "Having so many types of mesh offers the opportunity to have different resolutions as well as well-tuned applications."

SaatiPrint offers a wide range of fabrics for all pre-press needs

"Today, our printers tell us the major risk is the non-differentiation of their job," he continues. "They need differentiation and only by the wise application of different types of mesh and emulsion, the right choice of inks and the right products in the printing process, can they really make a unique printing job."

See page 85 of this issue for more details

Saati continually responds to the needs and requests of the screen printing industry

PRODUCT DEVELOPMENT

Saati has been at the forefront of the development of CTS (computer-to-screen) systems and patented its first laser system for CTS in 2001. SaatiPrint currently makes a high-performance laser system capillary film for CTS. "It works in a wonderful way with the plasma treated fabric and we do believe that this is absolutely independent on the colour of the mesh," De Rosa states. "We understand that there are issues with the absorption of the energy that the light source can provide by having orange, yellow or white meshes, and this was a big issue, especially for the projection exposure system."

Raimundo Mediavilla is Saati's Product & Development Manager. "In my role in charge of research and development, I am dealing with innovation every day. Although innovation follows the same principle as it did 20 years ago, it is even more crucial today so that we can compete with low cost products from emerging regions in the world. Today, innovation is a way to survive," he asserts.

As well as product innovation, Saati also thinks in terms of process innovation – and on many occasions a new product has arisen from a new process. "Our constant contact with customers naturally makes us aware of their requirements regarding new meshes and new fabrics," Raimundo says. "Looking outside of our normal scope, we must think really differently than in the past, and must look at the processes of our customers and what additional value we can give them in terms of innovation."

Daniele adds that there will be significant developments in the next couple of years. "We are working on the state of art of finishing technologies and on special coating and we believe that the trend is already set," he says. "We will disclose some of the most advanced developments at our booth at FESPA 2007. Being as usual on the cutting edge of the technology, Saati will propose the future."

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SGIA '07

Orlando, Florida, USA; 24–27 October 2007

SGIA '07 IS BUILDING ON LAST YEAR'S RECORD-BREAKING SUCCESS TO ONCE AGAIN BE A MUST-ATTEND EVENT FOR THE SPECIALITY IMAGING COMMUNITY.

At the time of going to press, the Expo has sold 86 per cent of the expansive trade show floor space at the Orange County Convention Center to the industry's leading manufacturers and distributors, with many new exhibitors signing up to showcase their products and services.

"The energy and enthusiasm from our exhibitors has been incredible," said SGIA President/CEO Michael Robertson. "They're excited about informing attendees on the latest equipment, consumables and services to all segments of the specialty imaging industry."

"The opportunities for digital have been growing and SGIA is the best way to reach this targeted audience," said Cindy Pilch, Senior Product Manager for GBC, one of the Gold Sponsors of the event. Other Gold Sponsors include Bayer Films Americas, Intelicoat Technologies, MacDermid Colorspan, NUR America and Roland DGA. Platinum sponsors are 3M, Digital Graphics Incorporation, EFI VUTEk and US Screen Print & Inkjet Technology.

BUILDING ON LAST YEAR'S SUCCESS

In addition to an Expo floor, SGIA '07 has 54 educational sessions and networking opportunities, such as the golf tournament and Friday night dinner party. Visitors to the website can get more information on the Expo and can also sign up to be notified when SGIA '07 registration opens (online registration will go live in June).

SGIA '07 aims to build on the success of the 2006 event staged at Las Vegas Conference Center, which saw a record number of 21,424 visitors – a 43% rise on the previous attendance record set at SGIA '94. The majority of visitors were from within the USA, but other attendees travelled from 104 other countries including Canada, Mexico and Japan. SGIA '06 also attracted a record number of 598 exhibitors.

SGIA MEMBERSHIP

The expos are staged by the Specialty Graphic Imaging Association, whose mission is to provide imaging professionals with the tools and information needed to make the best possible business decisions.

Membership benefits include the SGIA information network; through such portals as SGIA.org, ASSIST, SGIA News and the SGIA Journal, members are provided with the latest news shaping the industry, such as emerging markets, government regulations, and technological developments.

Connecting to a global community, members help each other and the industry, sharing ideas, insights and innovations. Members network and learn through workshops and seminars, and via conferences and symposiums they develop relationships that build better business.

SGIA '07
The Specialty Printing & Imaging Expo

Further information:
web: www.sgia.org

FESPA 2007

Berlin, Germany; 5–9 June 2007

FESPA 2007 AIMS TO BE THE LARGEST WORLDWIDE EXHIBITION FOR SCREEN AND DIGITAL WIDE-FORMAT PRINTING. THE EXHIBITION IS SOLD OUT, WITH OVER 600 VENDORS TAKING 32,000M^2 OF FLOOR SPACE ACROSS 11 HALLS. PRE-REGISTERED VISITOR NUMBERS SHOW AN INCREASE OF 25% COMPARED TO THE SAME PERIOD FOR FESPA 2005.

The event will be staged by FESPA, a federation of trade associations and an organiser of exhibitions and conferences for the screen and digital printing industry.

Frazer Chesterman, Managing Director of FESPA, commented: "FESPA 2007 is this year's number one destination for anyone planning to invest in screen or digital wide format printing equipment."

"The event will feature the world's leading vendors, many of whom typically use FESPA exhibitions to showcase their full range of products and solutions, not to mention brand new products," he continued. "It will also provide a myriad of complementary educational opportunities via the extensive programme of showcase theatre seminars."

NEW PRODUCT LAUNCHES

New digital product launches planned for the show include the European debut of the MacDermid ColorSpan 5400uv series of all-in-one UV inkjet printers, a new addition to the Rho family of flatbed inkjet printers from Durst, and the introduction of the Jeti 2030 UV TRUE flatbed printer from Gandinnovations.

Regarding new screen printing products, Servis Centrum will premier its Magra $^3/_4$ automatic screen printing machine and Vastex will be showing its new entry-level press, the V-1000 and the new E-1000 exposure unit, designed to bring high quality machinery to those with a limited budget.

FREE REGISTRATION

Free exhibition entrance registration is available on the website before the event or for €30 on-site. Visitors will also be able to attend free educational seminar sessions, visits to local printing factories, the FESPA Awards competition and the gala dinner.

Corporate sponsor of FESPA 2007 is HP Invent and platinum sponsors are EFI VUTEk, Marabuwerke and Saati. Official press sponsors are Sun Chemical and Technology Partners are AGFA, EFI VUTEk, HP Invent and XAAR.

Future FESPA events planned are:

- FESPA World Expo India (New Delhi, December 2007)
- FESPA Digital Printing Europe 2008 (Geneva, April 2008)
- FESPA Asia Pacific (Bangkok, November 2008)

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ESMA's Computer to Screen seminar

MANUFACTURERS OF CTS EQUIPMENT AND SUPPLIES SUPPORTED THIS VERY SUCCESSFUL SEMINAR TO INFORM USERS OF THE LATEST TECHNOLOGICAL DEVELOPMENTS IN COMPUTER TO SCREEN PROCESSES LED BY JON BULTEMEYER, A BOARD MEMBER OF ESMA. THE FORMAT WAS A ROOM WITH TABLETOP DISPLAYS FOR MANUFACTURERS AND A SERIES OF LECTURES GIVEN BY LEADING EXPERTS IN THE INDUSTRY.

The seminar spanned two days which gave delegates the opportunity to attend a reception and dinner together with the exhibiting companies, giving them plenty of time to explore possibilities for their own businesses.

The tabletop exhibition included 23 companies and the lectures, lasting two days, were attended by 130 delegates from both printers and manufacturers. A keynote speech reviewing the progress of CTS was given by Uwe Heinisch of SIP Magazine. This was followed by 10 separate lectures covering all aspects of Computer to Screen technology,

The Seminar included a room with tabletop displays for manufacturers

Plenty of time was available for delegates and visiting companies to do business

The tabletop exhibition included 23 companies

Lectures were attended by 130 delegates

giving attendees an excellent insight into the systems available, the screen and stencil considerations and the in-house requirements to maximise the benefits of using CTS. Each presentation was followed by a question and answer session with a panel of experts in the subject matter.

Both exhibitors and delegates confirmed that the seminar had exceeded their expectations and were keen to see a follow-up event in two years time. David Zamith commented: "We would like to congratulate ESMA for the recent CTS Forum organised in Frankfurt. For us it was good value… the forum was excellent as total, almost all CTS producers could talk about their position, technology and approach. We use different CTS technologies and we also have completely different dimensions and industrial segments. It was also excellent in terms of dialogue between the subjects as well as between members and also the Table Top room was an excellent idea."

Future events

JUNE
5-9 FESPA 2007 (Berlin, Germany)
12-14 EastPack 2007 (New York, NY, USA)
26-29 Expo Pack Mexico 2007 (Mexico City, Mexico)

SEPTEMBER
20-22 VISCOM 2007 (Düsseldorf, Germany)
26-29 Labelexpo Europe 2007 (Brussels, Belgium)

OCTOBER
24-27 SGIA 2007 (Orlando, FL, USA)

NOVEMBER
13-15 Rad Tech Europe 2007 (Vienna, Austria)
13-16 Productronica (Munich, Germany)
15-17 Glasstech Asia 2007 (Bangkok, Thailand)
21-22 GlassPrint 2007 (Frankfurt, Germany)

DECEMBER
7-9 FESPA World Expo India (New Delhi, India)

JANUARY 2008
8-9 Glass World Expo (Mumbai, India)

GlassPrint 2007 – 60% growth on last event

Frankfurt, Germany; 21–22 November 2007

GLASSPRINT 2007 IS A TWO-DAY CONFERENCE THAT WILL PRESENT GLASSMAKERS AND GLASS DECORATORS WITH THE LATEST SCREEN PRINTING TRENDS AND NEW DEVELOPMENTS FOR THE FLAT AND CONTAINER GLASS INDUSTRIES.

Accompanied by an exhibition of specialist suppliers of equipment, consumables, technology and services to this developing and expanding sector, GlassPrint 2007 returns to the easily accessible NH Moerfelden Hotel in Frankfurt, where the successful 2005 event was staged.

Keynote presentations will be from well respected speakers from Nestlé and Saint-Gobain. Leading industry experts also presenting papers will include: DIP Tech, Ferro, ISIMAT, Werner Kammann Maschinenfabrik, KIWO / Kissel + Wolf, Marabuwerke, PPG Industries, REMCO CHEMIE Rentzsch, RUCO, Saati, Sefar, Sun Chemical and Tiflex.

The exhibition has grown by over 60% since the 2005 event and confirmed exhibitors at the time of writing include: DIP Tech, Durst Phototechnik Digital Technology, Dubuit, Fimor, Fusion UV Systems, Grünig, ISIMAT, Werner Kammann, KIWO / Kissel + Wolf, Lüscher, MacDermid Autotype, Marabuwerke, PPG Industries, Printcolor Screen, REMCO CHEMIE Rentzsch, RUCO, Saati, Sefar, Sun Chemical, TCG and Tiflex. Further details on these exhibitors and their products and services can be found at www.esma.com

REDUCED REGISTRATION

Delegates who register before 2 July will qualify for a reduced 'early bird' delegate fee of €395. Registration after this time will be at the normal fee of €495.

GlassPrint 2007 is jointly organised by ESMA and Chameleon Business Media, publishers of this magazine and *Glass Worldwide* – the industry's leading bi-monthly magazine for all sectors and regions of the glass industry. For a free copy of the March/April 2007 issue of *Glass Worldwide*, including 28 pages dedicated to printing on glass, email subs@glassworldwide.co.uk

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