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The Guide to JDF

Second Edition

**Digital Dots
Technology
Guides**



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The Digital Dots Technology Guides

This publication is part of a series of independent technology guides for publishers, graphic arts professionals, printers and print buyers. Technology Guide titles provide straightforward explanations of how technology works, what it's for and considerations for investment.

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About Digital Dots

Digital Dots is an independent graphic arts research and content development company established in 1999. The company is a collection of like-minded graphic arts consultants, pixies and professional journalists specialising in digital print production and publishing technologies. Digital Dots provides exclusive market research and content based on its own testing and evaluation services for prepress and publishing applications. It also publishes Spindrift, the industry's only independent journal for graphic arts news, analysis and comment.

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Introduction

Welcome to the Technology Guide to JDF

This guide should really be called the Technology Guide to Automation, and who knows, perhaps the next edition will be. Automation is the key to what the Job Definition Format, or JDF is all about, but JDF isn't everything that automation is about. Without understanding what JDF is and how it works in the context of a digital workflow, the route to total process automation, is long, boulder strewn and riddled with potholes of unfathomable depth.

JDF is about process efficiency, helping to automate media production so that traditional printing and publishing can extend into the broader realm of digital media communications. So in the following pages we cover everything you need to know about JDF. We introduce the basics to explain what JDF is, how it works and its importance for workflow automation and business efficiency. We also cover all the main issues that you need to consider for your investment into JDF, including a brief description of our own experiences producing and printing this five title series within a JDF workflow.

This guide is meant to be read, so it does not include an endless list of JDF compliant technologies. Wherever possible we have tried to provide examples of how companies are using JDF, how it works with other data standards, and why it's important to keep an open mind.

JDF affects the entire media supply chain and successful investment is about choosing the right technology for your business. It is vital to understand what you expect to gain from automation and production efficiencies, because JDF investment is about supporting changing production needs in line with market development. The Technology Guide to JDF is intended to help you better understand the technology and to give you ideas about how to implement it. We hope you find this publication useful and welcome your feedback.

The Job Definition Format in the Market

Ever since Drupa 2004 we've been waiting to see the fruits of JDF, the Job Definition Format. Although JDF adoption is viewed with caution in many print halls and publishing houses, steady progress is nonetheless being made. Graphic arts professionals recognise the importance of digital integration for the future health of their businesses, and JDF's role as facilitator. They are looking to automate business processes and lay the foundation for digital integration, increasingly relying on JDF. Internally within printing companies and externally for interactions with publishers, commercial customers and suppliers, process efficiency depends on this technology. But the rate of JDF uptake is determined by how quickly printing and publishing companies move to invest in new technologies. The rate of investment is driving JDF's implementation throughout the printing and publishing industries, for all companies, large and small.

Most of the noise about JDF implementations has come from suppliers and showcase large customer sites, but this data format is relevant for small companies as well. JDF is about process automation, so it's important for any company that wants to maintain its competitive edge. JDF automates production processes, streamlining the workflow and saving money so that it can be better spent. Although large printing companies have played a major role in driving JDF developments, their efforts are benefiting both

large and small businesses. This is particularly true when it comes to getting developers to talk to one another.

For example, at Williamson Printing in Dallas, Texas, manager Joe Novak has pushed Kodak and Esko-Graphics to work out their JDF interfaces, so that the Kodak Upfront imposition software will feed impositions into the Esko-Graphics Scope workflow system with a few clicks of the mouse. What used to take fifteen to twenty minutes, now takes a mere few seconds per flat. Upfront also passes JDF data to Williamson's cutting equipment, reducing a thirty minute process to something that is instantaneous. With people costs of \$150 per hour, the company's JDF investment is being rapidly recouped. Cost savings, plus substantial speed and efficiency improvements, continue to drive Williamson's JDF implementation. As Joe Novak explains: "speed is money and the more implementation there is, the more you save. Some people would argue that it costs you money to implement, but we were in the process of replacing presses and bindery equipment with new equipment, so it's not costing us any more than it would otherwise."

How Many and When?

Besides Williamson's, suppliers and developers have many reference sites for successful JDF implementation. Em. de Jong in the Netherlands has been using JDF for several years and recently upgraded its Agfa Apogee X technology to do full prepress production of 200 jobs per day, transferring information for administration, page and colour management,

as well as imposition. In the UK, Wyndeham Heron has also used JDF for a number of years, as has Western States Envelope in the US where Kodak's Pandora sends JDF and PDF files to Apogee X. AGI Media, Schultz Grafisk, Kraft Foods, Niedart & Schon, SGS, Alcoa, Connect Digital, Schawk, MCG, and many more companies have well documented JDF experiences. But what about the rest, the companies that don't want to shout about JDF? How many of those are out there?

We asked suppliers and their agents to tell us just how many customers work actively with JDF. Responses vary from silence, to the humble such as Agfa, Esko-Graphics and Fuji, who claim some small percentage of their user bases, through to one company's claim that all of its customers are active JDF users. We have conducted our own research and we estimate that there are around 800 active implementations in printing companies worldwide, with the numbers for publishing companies trivial in comparison. Most printers we spoke to have seen excellent returns on JDF workflow investments, but whether the return is down to JDF or more efficient technologies isn't clear because for most people we spoke to the return was almost impossible to isolate.

It's all a bit vague, suggesting that JDF's adoption in the market isn't really a matter of numbers. According to James Harvey, Executive Director of CIP4 (Cooperation for Integrated Prepress, Press, Postpress and Processing), the JDF adoption rate is increasing, and there are now too many users to list. Of CIP4 supplier members, 136 companies estimate they have around 3,000 JDF installations with nearly 7,000 companies planning to purchase JDF compliant systems. Based on its own research, CIP4 estimates that there are approximately 3,500 to 4,000 users worldwide working with one or more of over 184 JDF enabled products. Besides

these 184, customers are working with at least 50 more products supporting the format and developed to meet specific requirements. In CIP4's JDF Marketplace, a supplier listing of JDF products, there are 360 JDF enabled products. Several systems in this list fulfill functions of more than one type of software, such as MIS, pressroom controllers and production tracking, hence the difference.

It is important to remember that JDF isn't actually a product in the same way as hardware devices or boxed software are, so its implementation can't really be counted quantitatively. For the same reason, predictions of the number of printers who will use it aren't very meaningful.

It is important to remember that JDF isn't actually a product in the same way as hardware devices or boxed software are, so its implementation can't really be counted quantitatively. For the same reason, predictions of the number of printers who will use it aren't very meaningful. The extent and complexity of JDF implementations vary with a printer's

automation priorities, system expertise and technology investments. For example, exporting data from a customer database for use in another part of the business, can be achieved without JDF. Also, even though JDF support is at the heart of all sorts of equipment and systems used for graphic arts production, JDF implementation is not necessarily a planned part of the picture when customers invest in new technology. For these and other reasons CIP4 estimates that around 700 of the worldwide JDF user community is actively working with JDF.

Whatever the numbers are it really doesn't matter. As more companies take small steps towards automation, they take advantage of JDF without necessarily even realising it. JDF implementation is spreading organically throughout the industry, although we might not always be able to see it. With every new technology investment, JDF uptake, and with it the capacity for cross industry process automation, is rising.

The JDF Revolution in Context

In the context of other revolutionary technologies for graphic arts production, such as desktop publishing or direct to plate output, JDF is making solid and rapid progress. For the first time in this industry, developers and users are working in concert to develop a cohesive data format specification with the scope to support all printing and publishing sectors. This was not the case with desktop publishing where there was serious confusion surrounding such issues as font formats and page description languages and companies struggled to compete, acting not always in the interests of customers or the industry as a whole.

With JDF, developers and users alike appreciate its importance for the competitive future of print. They also recognise that JDF implementation all comes down to education, planning and working out suitable business development models. For many companies, understanding where to start with process automation and JDF is the biggest problem. Should they look at it from a printing and production technology perspective, or from an IT perspective? There can be no single answer to this question because whether process automation should be production technology driven or not depends on the size of the company and the complexity of its IT infrastructure.

**George Callas,
owner of
Metropolitan Fine
Printers, a \$15
million business
in Canada:**

"If I can increase my profitability in anyway [with JDF], I will do it."

JDF technology is well developed up to a point, but its future evolution is ultimately in the hands of the user community. Fortunately every time there's an investment decision to be made, JDF is part of the conversation. JDF is spreading through the market and understanding of its contribution to business efficiency is getting clearer. Developers shouted loudest in the early days of JDF, but we expect to hear more noise coming from users in the near future.

What Is JDF?

Even though it's only a data format, the Job Definition Format (JDF), has caused more crackle in the market than we've seen for years. Not since PDF's initial introduction have we seen a data format cause such excitement as JDF. Despite the efforts of suppliers and CIP4 (Cooperation for Integrated Prepress, Press, Postpress and Processing, responsible for the JDF specification), for many printers, and publishers especially, there is still considerable confusion about what JDF is for and why it is important.

The Technology

At the risk of sounding melodramatic, JDF is fundamental to the successful future of the printing and publishing industries. However at the risk of sounding undramatic, JDF is just a data format, nothing more, nothing less. JDF's power lies in the fact that it is designed to take media production into new territory. That territory is uncharted and, much as we found with the development of the digital printing market, routes into the new world have to be invented. This might be why JDF can seem so confusing: we are exploring without a map, searching for the best routes to process automation for print production.

Version 1.3 of the JDF specification has a number of important additions. It is for example, possible to track individual elements on a page, rather than just whole pages. There are also improvements to file format conversions, making it easier to build systems that can manage legacy material and equipment. Job ganging, where numerous jobs are produced on output as a group or gang, and

consumables identification are also improved. There are also improvements to support advertising workflows, web offset printing and newspaper production. CIP4 is making its first step towards addressing packaging and converting, and we can expect future changes in the specification to cover the diverse production methods used in these sectors.

CIP4 & JDF

Universal and extensible, the JDF standard is managed by CIP4, the Cooperation for Integrated Prepress, Press, Postpress and Processing. CIP4 was formerly CIP3 and responsible for development of PPF for communicating prepress data to press and finishing technologies. CIP4 is responsible for JDF development and its membership includes all major players within the graphic arts community. The specification is written to support every kind of production process, from content creation through to distribution. It is designed to bring coherence to digital workflows, by unifying automated processes for improved efficiency and optimised media production.

JDF is an automation technology that can be applied anywhere in the workflow. The question is where and how, but understanding how, will help the business. JDF implementation starts with understanding its basic principles and purpose. It does not require an in-depth knowledge of the data

specification for JDF files, nor does it require a detailed appreciation of the Extensible Markup Language used to create the specification. Just as we don't need to know the intimate details of the internal combustion engine to drive a car, we don't need to be computer programmers to understand JDF.

We do however need to keep a cool head in the face of a barrage of nerdy acronyms. Try this on for size: JDF is an XML application designed and stewarded by CIP4, incorporating Adobe's PJTF, CIP 3's PPF, JMF with HTTP and MIME, plus XML. These initials may be handy for people yearning to awaken their inner geek, but for most end users of graphic arts systems they are bewildering and largely irrelevant to day-to-day work. They are important, but only because they power the JDF standard and so digital workflows, and this is far from irrelevant. With these technologies underlying it, JDF is the digital equivalent of the traditional printer's job bag with the scope to do much more than an over-scribbled paper envelope.

What is it For & Where Did it Come From?

JDF is designed to ensure that when a customer gives production people a new address and telephone number, the information only ever has to be keyed into a computer once. Through JDF it is automatically accessible to any other digital system that wants to use it, without going through complex export, reformatting and import routines. The same is true of all other data, from financial details to job impositions, regardless of the host system. Not only does JDF keep track of a print job's components, it can also help manage access to such things as digital assets, logos or company addresses that might otherwise have to be manually sourced.

JDF is designed for workflow and process automation, so it can instruct production tasks' related activities. JDF data files can trigger actions within the workflow initiating subsequent tasks, such as notifying operators when proofs are approved, or sending approved files for output.

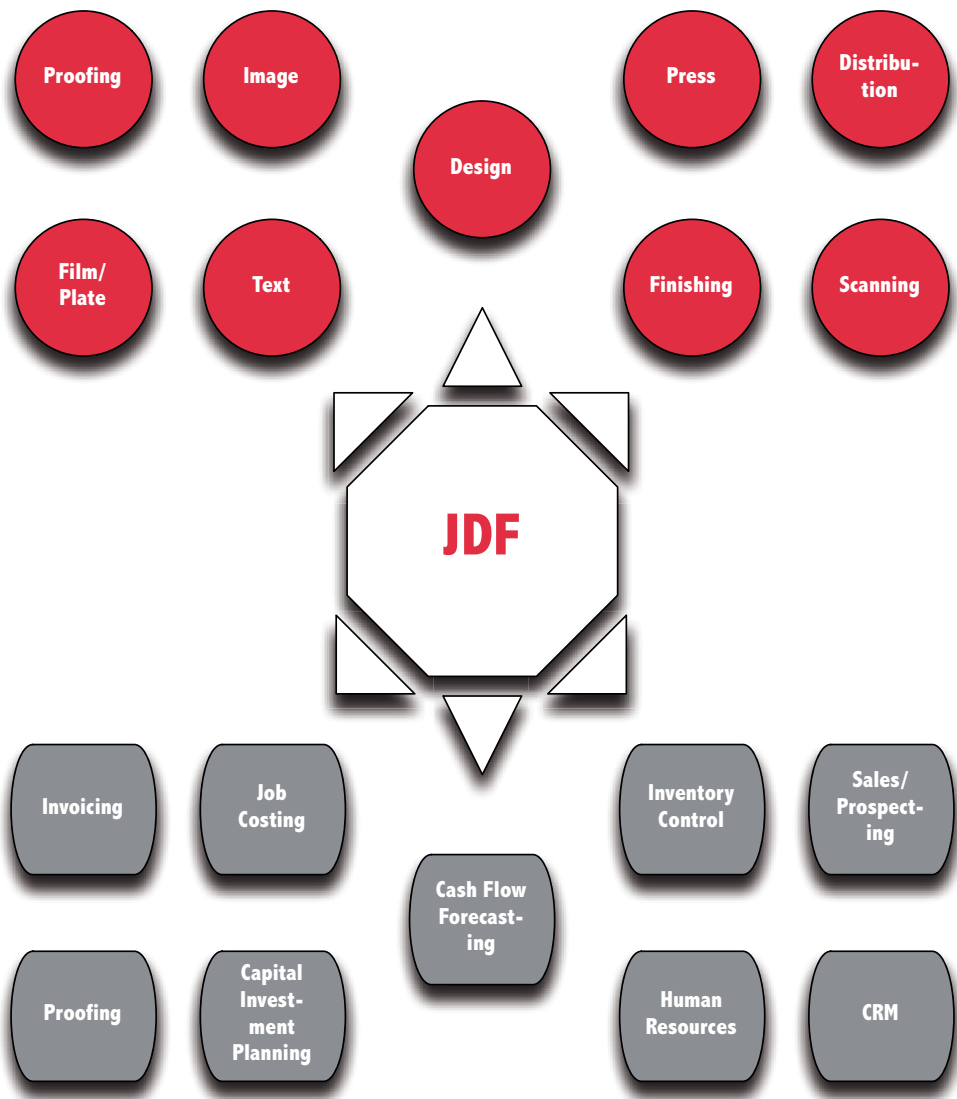
Michael Bauer, Managing Director of Bauer Druck in Germany:

"JDF data transfer... greatly reduces the makeready time for our saddle stitcher and MAN Roland presses. This increases the productivity of this valuable equipment."

Clearly, JDF's scope is huge but although the technology is interesting, how to implement JDF is an even more complex question. Fortunately implementation is already underway throughout the industry, with several bold printers around the world working energetically with JDF to improve control and automation, reduce errors and remakes, and raise production throughput.

How Does it Work?

JDF manages information in a hierarchy consisting of jobs and processes, often using common elements and resources. In the JDF realm jobs can be any kind of digital data file, from conventional print jobs to records in a database. The processes can be anything from automatic allocation of job numbers, through to finishing instructions,



and everything in between. JDF can access data from remote production systems or systems used in different areas of a business, such as production planning and Management Information Systems. It functions across networks, including the Internet, and its broad industry support means that can support cohesive system operability across production sites. JDF is essentially a sophisticated and intelligent electronic messaging system, a communicator and initiator.

The Digital Conversation

JDF uses a set of digital messaging rules and communications protocols to make sure that all information relating to a job or task is accessible and interoperable. JDF compliant technologies use digital messaging techniques to automate and unify digital production, much as an email system facilitates conversations. But turning a noisy babble into a series of understandable dialogues isn't easy, which is perhaps another reason for peoples' confusion about JDF.

How, why and where a system shares information, is not so much a JDF issue as it is a workflow issue. Who and what devices share information and why they do so, depends entirely on the workflow requirements and the efficiency gains a printer or publisher expects to achieve with process automation. The specifics of how technology is implemented to automate processes, depends on how system integrators and their customers design their procedures for automation.

This issue of technology design is another area of potential confusion. The JDF specification is huge, designed to support all aspects of digital production requirements. How a particular technology developer has chosen to use JDF in their system therefore comes down to the

choices made by software engineers. Just as people use different vocabularies to express ideas, software engineers choose to work with different parts of the JDF specification. JDF implementations, both in software and in a production environment, are thus inevitably subjective, shaped by the demands of the application and the associated activities, none of which are static.

Process Automation

JDF is about process automation and it can be used in many ways, as can be seen in the range of applications early adopters are pursuing. An obvious one is production tracking, measuring for example how long a particular job took to produce, including preflighting and proofing cycles, imposition, platesetting and so on. JDF can be used to gather this information and communicate it to a financial system. The format provides a sort of digital bridge across the various systems involved with these activities. JDF is bidirectional so it can control messages and information flows between different systems. JDF can trigger processes in the workflow such as outputting proofs, as well as notify the user of the production status, and warn of approaching deadlines or absent page elements such as advertisements. All of this information is available to other systems such as customer service databases, or MIS for use in cost estimating or invoice generation.

The possibilities are endless. For example, production tracking using JDF could be configured for a single supplier's RIP and platesetting system or for a complex distributed system involving multiple devices, front-end systems, and postpress equipment supplied by an array of developers. In all cases, JDF is the format that makes data interchanges possible between all of the digital systems involved.

Implementation Quagmire

In early implementations of JDF it was soon apparent that using it effectively depends very much on the ways in which developers worked with the specification. It's a bit like two people who claim to speak English, but who use very different vocabularies. In response CIP4 has published a series of Interoperability Conformance Specifications (ICSs), each of which defines a set of criteria that a particular product must fulfill, if it is to interoperate fully with other technologies supporting JDF.

JDF:

The JDF specification provides an interchange format for sharing job information, including customer intent and processing specifications across digital systems.

Base ICS was published in December 2005 and defines general conformance requirements, and there are other ICSs for specific classes of interaction. Early in 2005 CIP4 published the required interoperability criteria for communications between various digital systems, based on JDF 1.2. There is an ICS for MIS and sheet-fed conventional presses, to ensure that a sheetfed offset press that can read JDF job tickets can also return them in a usable form. An MIS to prepress ICS has also been published explaining how the interface between MIS and prepress systems should be defined for producing, for example, proofs and plates. There are also ICSs for prepress to conventional press control systems, including evaluations for ink zone settings and plate information, for integrating digital printing devices with inline finishing systems, and

defining the conformance requirements for various types of binding systems.

Published in July 2005, the layout creator to imposition ICS defines how a layout creation tool, such as Quark Xpress or Adobe Indesign, should behave with other technologies work with the page data, such as a standalone or RIP based imposition system.

Although users don't really need to know how all this works, they do need to know that CIP4 is effectively creating a technical foundation that ensures JDF compliant technologies work together, even if they come from competing suppliers. The objective with the ICS work is to remove the scope for proprietary behaviours, and although this may not be a universally popular move, it is ultimately in the interest of users within the printing and publishing industries. As ICS work proceeds, we can expect to see much more detailed interactions specified, and as the library of ICSs grows, implementation will get easier.

It will however take time: JDF investment generally comes when printers and publishers invest in new technology. Processes have to be tested and retested, and with each generation of new hardware, software and specification of JDF the need for implementation testing must continue and under increasingly complex conditions. Users can choose to be heavily involved in this type of work or wait and see how things go. Either way, end users benefit from work that is conducted in the common interests of all industry players.

Any conversation about JDF begins with a workflow discussion. How and where can a workflow be automated, and what tangible contributions does automation make to the business? JDF is important but it should not come before the system, resource and process

analysis that drives business improvement. Automation is about control and customising process management to suit the precise needs of the business. The robustness of JDF means that interactions can be standardised without

CIP4:

Cooperation for Integrated Prepress, Press, Postpress and Processing

compromising the custom nature of a system, the business it supports, or the needs of the customers it serves.

Careful system planning and implementation are obviously key to automation, however successful JDF implementation depends equally on testing, so testing phases should be included in any process automation plans. JDF has immense scope for automating all business processes, and is the final piece in the digital workflow puzzle.

Ten Steps to Process Automation

- 1.** Define the workflow processes for each class of media produced.
- 2.** Measure processes and identify points in the workflow where there are delays or halts.
- 3.** Identify logical links across processes, and points where data is common to more than one process.
- 4.** Calculate time required to support all relevant processes.
- 5.** Calculate potential savings inherent to common data access.
- 6.** Define areas in the workflow where interactions are time critical.
- 7.** Define interactions that are process critical.
- 8.** Identify automation options.
- 9.** Evaluate software for automating individual processes.
- 10.** Evaluate system impact and plan testing and implementation procedures.

Destination Automate

All this fuss over JDF in many ways misses the point. JDF is the means, but not the end; it's the data format, but not the process. The point we should focus on, is how we can achieve process automation and how JDF can help us to do so. Automation is the reason why companies are implementing JDF, both for printing process management and for business efficiency. And although automation is about much more than just JDF, JDF adoption is spreading because companies recognise competitive threats they face. Across all parts of the media production supply chain, companies large and small are implementing JDF workflows to automate and improve business competitiveness. Some do it a little at a time, and some do it on a grand scale.

We don't hear much about small companies getting into JDF and automation, which is a pity because the benefits are equally relevant for small businesses. For example, in 2004 Belgian company Tanghe Printing became the first printer in the country to use an integrated JDF network. Tanghe works with Agfa's Apogee X workflow system and a Hiflex MIS and has set up an online connection to Tanghe's two Komori presses based on JDF.

The result has been a considerable gain in job throughput because of faster processing, and this has in turn improved prepress production transparency and press usage. Tanghe Printing is not a particularly large company. With two presses and a single 8-up Agfa CTP engine, the organisation is pretty typical of commercial print shops around the world. Via the Hiflex

Case Study

Company:

Tanghe Printing

Claim to JDF Fame:

The first printer in Belgium to use an integrated JDF network.

Headquarters:

Belgium

Employees:

40

System:

Agfa's Apogee X workflow system, Hiflex MIS with an online connection based on JDF to two Komori presses.

Output:

Agfa platesetters

Director Patrick Tanghe says:

"the JDF connection between Hiflex and Komori has allowed us to rationalise and make an important advance with regard to simultaneous processing."

MIS planning module and reports from the Apogee X workflow system, staff can follow production in real time without having to leave their workstations. According to director Patrick Tanghe "the JDF connection between Hiflex and Komori has allowed us to rationalise and make important advances with regard to simultaneous processing." The company has improved its ability to respond effectively to customers job booking requirements, something which is

fundamental in a market where job changes are frequent and the volume of short run jobs high. Patrick Tanghe says: “We are always looking to increase the level of automation, further increase our productivity, reduce our costs and improve our customer service. The JDF link between ApogeeX and Hiflex MIS totally streamlines our prepress workflow, just as JDF did in the press room”.

With around 40 employees, Tanghe Printing is a modern print house that produces a wide range of print products, including company report and accounts work, reviews, books and brochures. When a new order comes in details are entered in the Hiflex order book and immediately sent to the ApogeeX workflow system via JDF. All administrative information, including order number and description, customer name and address, contact person, job data such as cover and content details, production requirements, number of pages, inks, is all transferred via JDF. According to the production plan in Hiflex, the imposition is generated in Preps and imported into the Agfa ApogeeX production system where final prepress parameters such as CTP output resolution, screen ruling, trapping details, and so on are automatically set. Any order amendments, such as the number of pages, signatures, or whatever, are first updated on the Hiflex production estimate before being transferred via JDF to Apogee X. This ensures that project pricing, electronic job ticket and production schedules are all up to date.

“The JDF link between ApogeeX and Hiflex ensures that job modifications are immediately transmitted to prepress. It also improves the efficiency of customer services, as even last-minute modifications are incorporated into the production process,” says Patrick. “And I can see far more potential in our JDF connectivity: it is the key to further process

optimisation in prepress. Agfa and Hiflex are working closely together so that we can exploit more capabilities in future versions of the JDF specifications. We predict we will be able to dispense with a complete process in prepress.”

Tanghe Printing made only a “minimal” update to its IT infrastructure and the press control system to set up its JDF workflow, linking the Hiflex MIS and Apogee X to the presses. The data transfer between the two is bidirectional and throughout production the status of the press is simultaneously communicated to the Hiflex MIS via JDF/JMF. The status, the printing speed and the correct copy number are all communicated to the Hiflex job planning module. Planners can thus see the actual status of all orders in production.

The system now offers the company possibilities to manage all of its production within an integrated networked environment, with JDF the basis for managing data interactions. Patrick says that: “The acceptance of the Hiflex MIS was no more than a matter of several weeks. Beforehand many systems were used, which each time required new information handling. The advantages [of a single system] were more than obvious so the Hiflex system was warmly accepted by the users. The installation of the JDF connection had the goal of using the highest performing technology on the market, in order to raise productivity while avoiding double work and strengthening our competitive position.”

Stefan Reichart, the company’s managing director also sees that “the coordination of different processes is determined by production planning and the control module functions as a JDF controller.” For each customer order the system generates a preliminary estimate and then a final calculation of costs. Because the base data for this calculation is available in the Hiflex system, it can be simultaneously

directly communicated to the Apogee X workflow system and the Komori K-Station press control system via JDF. This provides Tanghe Printing with an extremely tight cost and process management mechanism.

This system also provides the company with a means to optimise its workflow, particularly between job booking and production, via JDF. The company uses booking and production data for daily planning and short term equipment capacity management. Tanghe can optimise planning of changes to jobs, machine halts and use of supplementary equipment.

JDF has helped Tanghe enhance quality control and productivity. According to Patrick “workflow simulation with the Hiflex MIS offers us the possibility to integrate internal communications with a simple click of the mouse. In fact, Hiflex provides production planners with the means to request status information right down to plates, paper inventories, the client details and order information. The planning module is a highly precise utility. Production process transparency is substantially increased and our efficiency is definitely going up. Modifications to short term planning have turned out to be much simpler.”

Tanghe employs 40 people but it is not uncommon for even smaller companies to upgrade process automation when they make other investments. In the Netherlands, Alkemade Printing made a first step towards automation when it purchased Screen's B2 Platerite 4100 platesetter and Trueflow workflow technology to automate production of its B3 and B2 commercial work. Investing into CTP and workflow has given Alkemade Printing and its 17 people the basis for producing a lot of plates automatically overnight, so clearly process automation is very important to the company. Managing

Case Study

Company:

Alkemade Printing

Claim to JDF Fame:

Trueflow and JDF are used to optimise the workflow for CTP, producing digital proofs, digital printing and the distribution of PDF files for remote proofing and printing.

Headquarters:

the Netherlands

Employees:

17

System:

Screen's Trueflow workflow

Output:

Screen's B2 Platerite 4100 platesetter

Managing director Rémon Alkemade says:

“Standardisation cannot be achieved half-heartedly. Every step in the production process must be under our control.”

director Rémon Alkemade explains that: “Standardisation cannot be achieved half-heartedly. Every step in the production process must be under our control. Once a week we check all parameters by producing a test plate. Up until now it has not been necessary to do any recalibration.”

To hold and reinforce this position, optimal control of the production workflow is essential.

Trueflow optimises the workflow for CTP, producing digital proofs, digital printing and the distribution of PDF files for remote proofing and printing. It features file check, OPI support, trapping and imposition and was developed to drive CTP production. The latest version can handle PDF 1.4/1.5, enabling users to switch easily from a PDF and Postscript workflow to a JDF-based workflow.

At the opposite extreme is Color-Gruppe in Germany, one of many large organisations getting into automation and JDF on a grand scale. The company wanted to automate processes across several companies within a group. It employs over 130 people and started life as a simple printing house. It has evolved into a group of companies offering a complete portfolio of print communication services, from design to finishing. The company produces brochures, catalogues, books and many other high quality colour print products. This company wanted to solve a range of problems as well as automate processes. One of the most serious problems was processing errors, with jobs missing necessary information such as the production tasks required. This problem was compounded by the fact that costing information had to be gathered by hand, and it was not always possible to fully account for time spent getting the information required for efficient job processing.

To solve it, Color-Gruppe went wholesale for a Heidelberg solution based on Prinect Prinance and Prinect workflow technologies. The idea was to get costs down and to raise productivity, by reducing process costs and increase the number of jobs through the system. Like many printers, Color-Gruppe has seen print runs falling over the years. The company recognised that efficient prepress and makeready were the key to keeping presses rolling and to bringing up revenues.

Case Study

Company:

Color-Gruppe

Claim to JDF Fame:

Using JDF to automate processes across several companies within a single group.

Headquarters:

Munich, Germany

Employees:

130

System:

Heidelberg's Prinance MIS and Prinect workflow management.

Output:

Digital platesetters and digital presses.

Managing director Peter Wagstyl says:

"For us, networking doesn't begin with the workflow. It starts with our commitment to making sure that all of our customers' needs are met."

Working with its supplier, Color-Gruppe spent over four years making the transition to an integrated and automated system. The implementation of different components of course takes time, however today Color-Gruppe has substantially reduced processing costs per job and increased throughput capacity. The company benefits from greater processing reliability and in a strong position to offer customers additional services.

Case Study

Company:

DSI Talisman

Claim to JDF Fame:

the UK's largest JDF implementation having originally moved to an automated workflow to control job data both between departments and for the website.

Headquarters:

Essex, UK

Employees:

600

System:

Multiple technologies throughout company and Optimus MIS

Output:

Digital platesetters and presses.

Managing director Dave Reynolds says:

"the amount of information we can generate through Optimus 2020 and JDF is enormous, but you have to use that information wisely, or it can simply be a wasted exercise."

This is just a single example of how what might appear to be a small almost trivial problem, might add up to be very expensive and even compromise a company's ability to thrive and grow.

Commercial printers operating with far more employees than Color-Gruppe can also benefit from process automation through JDF. DSI Talisman in the UK has seen similar improvements and has integrated

various technologies using JDF including Kodak Synapse and Optimus MIS. The new interlinked JDF processes are 50% faster than processing without automation and managing director Dave Reynolds estimates this gives the company a 20% increase in turnover capacity, since it frees up machine time.

DSI Talisman employs around 600 people and produces direct mail and corporate literature. This company is claimed to have the UK's largest JDF implementation, and originally moved to an automated workflow in order to control job data both between departments and for its website. An important goal was to be able to have all job information available at all times. The heart of the system is an Optimus MIS system that provides, via JDF, the links between business and print production systems.

According to Mr. Reynolds: "The efficiency benefits are already significant and we expect these to grow substantially over the coming months, as we implement JDF even further throughout the factory." He added: "The next step is to network our digital presses and then we will look at publishing live job information via a portal to the client base." The benefit is information; the company is evolving management systems to maximise this. Dave Reynolds explains that "the amount of information we can generate through Optimus 2020 and JDF is enormous, but you have to use that information wisely, or it can simply be a wasted exercise. For instance, Optimus 2020 provides automatic analysis of a range of areas, allowing us to quickly identify the most profitable and least profitable jobs, where we can reduce wastage, improve manning levels or increase throughput."

This is just a short selection of happy JDF users and their business propositions are very different. However they all recognise that

their futures depend on process and service efficiency, and of course on automation. Automation requires a number of resources and most of these are incorporated at least conceptually into JDF. Most importantly the specification provides a common language for data communications that can be used throughout a print job's lifecycle. Functionally JDF is just the same as a conventional job ticket, but it is digital so it has far more scope to be useful to the whole enterprise. The same language that functions as a job ticket, also functions as a control language for systems and devices used in the print production workflow, and of course for constructing and managing electronic workflows. And this is what automation is all about.

Why Automate?

- 1.** *Do you have frequent job processing halts because information about the processing requirements is missing?*
- 2.** *Do you spend too much time keeping customers informed about their job's progress?*
- 3.** *Is job tracking a problem for you?*
- 4.** *Would you prefer your prepress stages to be controlled by an integrated workflow management system?*
- 5.** *Do you have difficulties identifying services you have provided and what they have cost you to produce a job?*
- 6.** *Is administration taking too long because you use several different digital systems?*

7. *Do you have to record actual costing data manually and then enter it into your business systems later?*

8. *Are your staff spending too much time trying to troubleshoot problems caused through communication errors and lack of process optimisation?*

9. *Does your workflow lack the flexibility to accommodate changes to a job, such as the addition of pages or changes to covers or inserts?*

10. *Are you unable to keep track of machine status for CTP, press and finishing equipment?*

11. *Would your workflow be more efficient if you could use your estimating system to preset production parameters?*

12. *Is automatic rescheduling of jobs impossible because your system is too restricted?*

If you answer "Yes" to any of these questions, it's time to consider automation and JDF.

More Work & More Flow with JDF & Standards

Why is workflow the same as a flock of sheep? Because they both need fencing in and without a good fence you have chaos. Although JDF isn't quite the digital equivalent of a sheep dog, it does provide at least some means of managing the fencing and the work it is supposed to contain. But JDF is not the only standard necessary for efficient process automation. And automation is fundamental to competitiveness in the digital media production business.

The Job Definition Format, JDF, is a process automation specification and it works in concert with other data standards and formats. JDF was designed to bring together diverse technologies used in the printing and publishing industries, in order to create unified digital workflows and as such it is the digital glue that facilitates information interchanges within a print media supply chain. It has the scope to also link print and publishing production and management systems with systems used in other industries as well, so it is the most powerful automation technology the printing and publishing industry has seen. JDF goes far beyond basic process management.

Stretching the Limits

JDF makes automated digital workflow development a reality, because it extends the reach of digital workflows across systems and it can unify different technologies into a common environment. It links islands of automation within digital prepress and beyond, and extends the reach of a conventional prepress

workflow into other workflows involved in the print media supply chain. This has huge significance for the printing and publishing industries and will be a vital contributing factor for the future competitiveness of print.

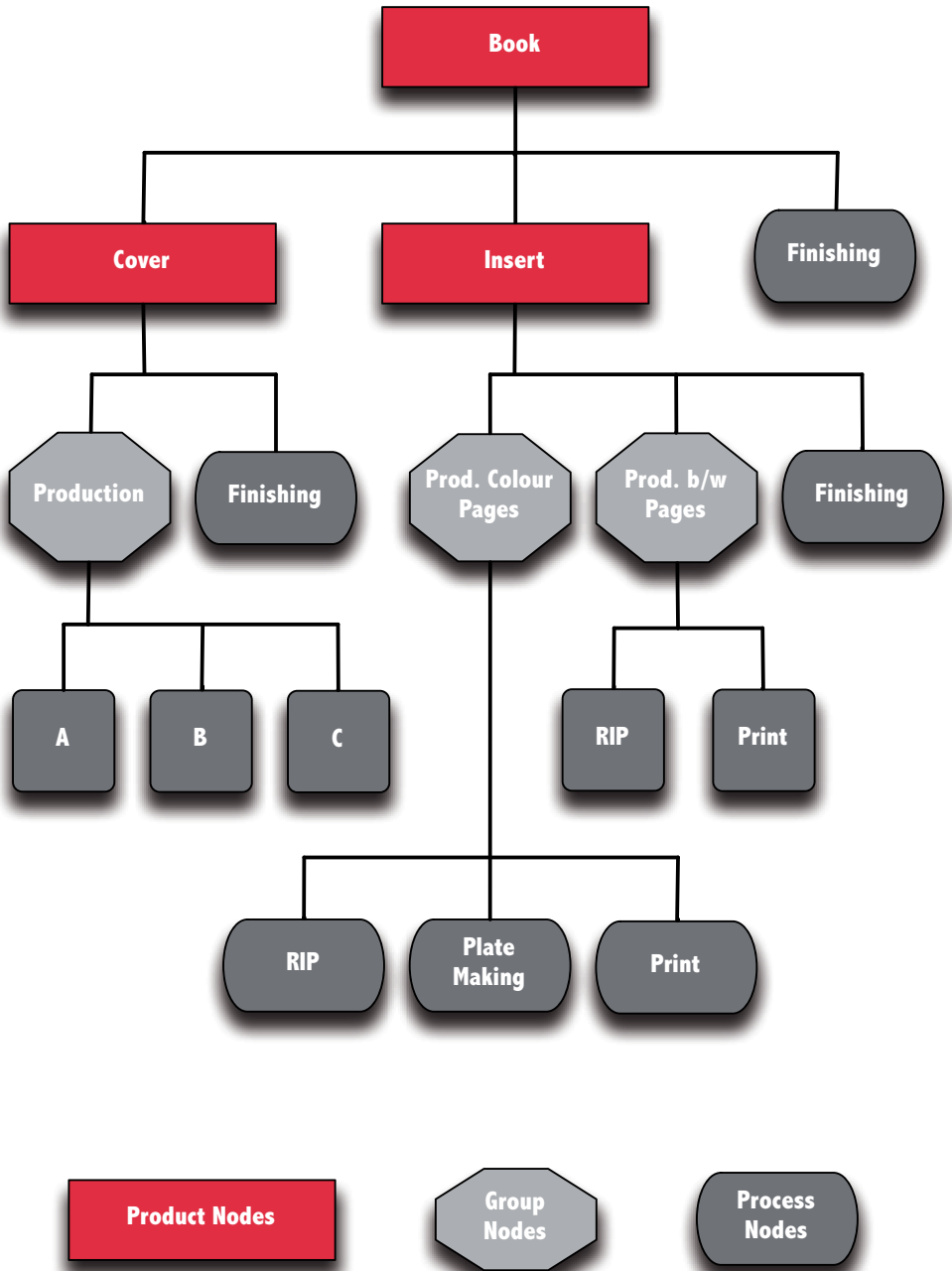
Extending a digital workflow into corporate data systems and publishing houses is important to the development of a range of new print applications, particularly on demand production and variable data printing. However these data intensive applications depend fun-

Just Don't Forget:

JDF: An interchange format for sharing job information, including customer intent and processing specifications across digital systems.

damentally on cooperative data management, process sharing and managed database interactions. There are many rather more mundane reasons why companies are looking to use JDF as part of their automation strategies: ensuring that file preparation is up to scratch, or making print buying less difficult, for example. Printers may also want to encourage customers to prepare pages for a specific format, or run bespoke preflighting routines for particular workflows and approval cycles.

JDF can facilitate these sorts of things in an automated workflow. It can help shorten deadlines and reduce file processing errors for throughput speed, and increase production capacity.



The JDF Job Ticket mimics the actual workflow, splitting processes into their logical components. These are called process nodes in CIP4-speak.

JDF is a lengthy and complex specification and its effectiveness depends very much on how it is written, and on how the JDF parts of a system interact with other data standards. This includes the JDF used in other systems. JDF system efficiency depends on compatibility across JDF systems and coexistence with other industry standards already in use.

Most enterprise technologies for database and data warehousing support XML, as do programming languages such as C++ and Java. Network management technologies are also XML savvy, so any modern digital environment can access files written in JDF.

Standards

JDF is the responsibility of the Committee for Integrated Prepress, Press, PostPress and Processing (CIP4), a collective of nearly 300 industry participants. CIP4 oversees the development and implementation of JDF and the committee makes sure that the specification works with other industry standards as well as for specific purposes. The Interoperability Connection Specification initiative defines the details of how JDF can be used to perform specific tasks. CIP4 has published Interoper-

ability Conformance Specifications specifically defining how the interfaces should be written between MIS and prepress, and MIS and conventional sheet fed printing presses, as well as several others. The committee and its membership are investing huge resources into the development of the JDF specification and the associated ICs. This includes writing and publishing, interoperability testing and liaising with other industry bodies to ensure JDF's relevance and usefulness.

Digital Knitting

This work is extremely important because of the scope of JDF. JDF has such extensive scope because it is written in XML, the Extensible Mark-up Language, the lingua franca of the information industry and the web. XML has its origins in SGML, the Standard Generalised Mark-up Language developed to provide electronic mark up for compositionally complex documents. Simple and flexible, XML is a dynamic language designed to handle any kind of data management, hence its popularity on the Web and elsewhere for data interchange.

Most enterprise technologies for database and data warehousing support XML, as do programming languages such as C++ and Java. Network management technologies are also XML savvy, so any modern digital environment can access files written in JDF. This brings huge power and flexibility to information production, particularly for such things as variable data transactional print, direct mail, integrated cross media marketing, and of course conventional printing and publishing. All of these depend on efficient and accurate data management, and XML and JDF are ideal tools for making this happen.

JDF is basically an XML application, but it also incorporates other standard technologies.

One of JDF's most important components is the Job Messaging Format (JMF), which is based on widely used data protocols and exploits both HTTP and MIME. These protocols are used on the Internet to pass data around and they provide JDF with the means to manage messaging within a system.

JDF & MIS

The most common use of JDF is to bridge production and general business systems. There is really no such thing as a single Management Information System (MIS). The term applies to any system that provides business information and process automation and it can encompass an enormous range of applications

business size. The range and type of interfaces that must be supported between MIS and production systems to create an integrated platform are clearly extremely diverse, and they reflect the nature of the industry. This is why JDF implementations must be carefully managed. Companies specialised in MIS for graphic arts production have an advantage here, as do companies used to working with graphic arts technology developers.

A JDF-based integration might bring together production planning and management systems with estimating, costing, invoicing and customer databases. A more ambitious goal could be to integrate consumables ordering,



If you've invested in a piece of equipment as expensive as this to own and run, shouldn't you be getting more out of it?

and tools specific to different aspects of business management. Within the graphic arts, printing and publishing industries, MIS technologies manage general business tasks, such as customer records, as well as specific functions such as estimating and editorial planning. The preferences and specifics of the many MIS technologies used for print production vary according to the size and type of business, and the market it serves. Efi, for example, is probably the industry's largest supplier of MIS technologies and has three different subsidiary divisions, each of which develops MIS solutions for different market sectors, according to

shipping, inventory management and customer relations. The shared goal of both extremes and everything in between is to integrate and automate digital data processing throughout the organisation, reaching even into client systems such as a magazine publisher's workflow, or a utilities billing system.

Interoperability with MIS technologies is only the starting point for JDF, but its broader implementation depends on cooperations between developers, system suppliers and users. Much work is underway to facilitate this wider interoperability ensuring that JDF can cooper-

ate with specific data standards used within the graphic arts and printing industry.

CIP4's JDF & PODI's PPML

The Print on Demand Initiative (PODI) is an industry consortium founded in 1996 to foster digital print applications and market development for direct to press and variable content print applications. PODI and CIP4 have an agreement to work together, so that their data standards cooperate efficiently in prepress and print production. For example, in the current JDF specification variable content elements can be specified using JDF, once a content database is selected. PODI oversees the Personalised Print Mark-up Language (PPML),

Weldon Molony, print buyer for Toyota:

"We might ultimately mandate internal management of all print spend... we also want to take advantage of an increased use of technology to improve efficiency."

an XML application that defines a digital print document's structure for customised, variable content print production. Much of this experience is finding its way into development of the JDF specification.

PODI published version 2.0 of its Digital Print Ticket Specification in May 2005. DPT 2.0 defines the semantics of how JDF might interact with PPML. For example, the two could cooperate dynamically to set the job parameters in real time from the PPML file, defining certain file criteria, so that the information could be used elsewhere in a

JDF workflow. Version 2 of DPT is based directly on JDF syntax to restrict the type of JDF workflows a digital output device should support, without constricting a device's processing options in any way. A digital press or printer will thus be able to support JDF workflows that incorporate PPML or not, as the user prefers. The idea is that all types of files move from origination to final output more efficiently, with JDF facilitating smooth processing of personalised print data. It will be especially relevant for complex print jobs, where content is sourced from a number of files residing on different data systems.

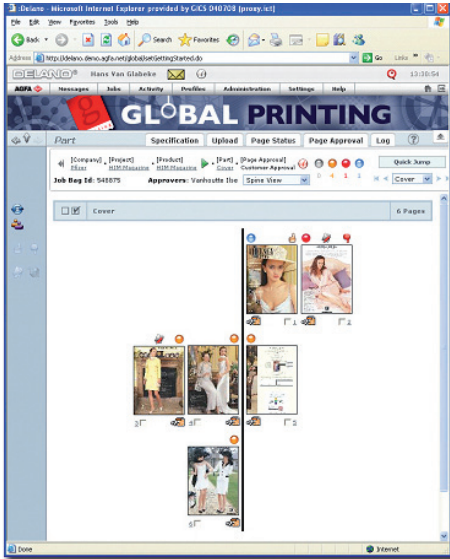
Before JDF and PPML, digital press developers worked on ways to make variable information printing more efficient. Xeikon for example developed JDML (Job Definition Mark-up Language), an XML application for managing digital press jobs. Xeikon along with most other digital press developers is working with PODI and CIP4 to ensure that their knowledge and experience are reflected in emerging JDF compliant data standards.

JDF and PDF Interoperability

One of the greatest concerns for workflow managers is how JDF and PDF will cooperate, beyond the simple addition of a JDF job ticket to a PDF file. The JDF specification includes tools for working with PDF documents, so it will be possible to develop technologies that take advantage of PDF's growing dominance as the preferred format for production workflows and file delivery. PDF is also widely used in other graphic arts environments, such as for content sharing and approvals.

This use of PDF as a basis for communication throughout the workflow creates new automation opportunities, particularly for internal communications, approvals and notifica-

tions. It isn't yet a common application, but it could be interesting to use PDFs notes and comments for improved project management, with JDF as the means of extracting notes and comments and using them elsewhere.



Agfa's Delano is one of the most well developed project and workflow management tools on the market. JDF and JMF are key to its slick data management and comprehensiveness.

In many PDF based workflows, annotations and comments are used for job communications, but currently there is no simple means of extracting such comments from PDFs and incorporating them into a job ticket. This could be a useful addition to the specification, particularly for managing recurring errors or approval cycles. For example if a PDF keeps failing preflight checking, despite the processing error having been accepted and approved by the client proofing the PDF, communications between service provider and client are required every time, in order to clarify the situation. JDF could be used to manage a bi-directional link between workflow servers and web based proofing systems so that comments

on the proof are passed to the workflow server, to monitor the situation or to change the preflight checking profile for the PDF.

UP3i

UP3i, the Universal Pre and Post Press Interface, is a key standard for JDF workflows. UP3i is a member association originally set up by Duplo, Hunkeler, IBM, Océ, Stralfors and Xerox, but which now has many member companies. UP3i is designed to facilitate job ticket and device control data processing, making it possible to incorporate bindery and finishing equipment into the workflow, so that JDF job tickets are aware of them.

Walking the Walk

Production competitiveness is all about automation and the JDF specification is designed as the basic mechanism for process automation. It is not, however, a single entity. JDF specifies how data in a file should be described and shared between digital systems, but it doesn't create the description or do the sharing. This has to happen elsewhere in the workflow under the control of dedicated software. The format is designed to speed up information interchanges and to ensure data compatibility, but it doesn't make the interchanges actually happen. This requires software on either side of an interchange divide to initiate processing. JDF facilitates the interchange and can thereby help to simplify system integration processes, but it doesn't work in isolation. JDF is a technology for cooperation with the scope to increase the reach of prepress production technologies. How far that reach extends and what it achieves depends on how we develop information workflows.

Bleeding JDF?

Case Study

Company:

Lynx dpm

Claim to JDF Fame:

This company is the first in the country to integrate its Tharstern MIS with Screen's Trueflow 3 PDF/Postscript workflow system, and Komori's K-station press control system.

Headquarters:

Oxford, UK

Employees:

40

System:

See above

Output:

Screen platesetters and a Xerox iGen3 digital press

Technical director Nigel Clark says:

"I have devoted a lot of my time in prepress finding ways to link disparate systems to reduce manual intervention and improve information flow".

We have always tried to practise what we preach, but with JDF we weren't quite sure how to live up to that ideal. Like many other small publishers, we couldn't really see what a JDF compliant workflow could do for us, particularly at its bleeding edge. After all,

JDF's more relevant for production than publishing isn't it? And although we had a theoretical idea of what JDF might do for us, it wasn't until preparation of this Technology Guide to JDF was well underway, that we got some ideas. We decided to use our own experience as a case study.

The first step was to find a printer who would be happy for us to document our experiences, so we made a few preliminary enquiries around the industry, and chose commercial printers Lynx dpm in the UK, as our partner for the printing. We do our own production using Word and Indesign, with a colour managed PDF workflow set up to produce print ready PDFs that meet the printer's set up requirements. We are working with Lynx dpm for the first time and used their ICC profile and PDF settings for preflight checking.

This company is the first in the country to integrate its Tharstern MIS with Screen's Trueflow 3 PDF/Postscript workflow system, and Komori's K-Station press control system. Lynx dpm has Komori K1028P and K528P litho presses, plus a Heidelberg SM52. It also has a Xerox iGen3 for digital colour and a Docuprint 4635 for monochrome output. We opted to have our Technology Guides printed on the Komori K1028P.

But apart from our bias as technology writers, why should Lynx dpm's JDF set-up matter to us, a casual customer with a project that we print every two years? It's a big deal to us, but what relevance could a JDF workflow have for a publishing project such as the five part Technology Guides? Lynx dpm specialises in scientific and educational print and its system

is in beta testing. Not all parts are automated, but still we thought it might in many ways be more representative of the market: we are all, publishers and printers alike, searching for a route forward. So we took the plunge.

Nigel Clark, Lynx dpm's technical director, wanted to get into JDF because. "I have devoted a lot of my time in prepress finding ways to link disparate systems to reduce manual intervention and improve information flow".

The first stage of Lynx dpm's integration was between the Tharstern MIS and the Screen Trueflow PDF workflow. An estimate is produced in Tharstern, although there has been some vague discussion to start even further up line using a request for quote to initiate the process. This hasn't materialised yet, but we think it's a great idea. Publishers and other prospective customers should be able to download a generic JDF based job request form, for use in any MIS and production system, and even layout software, capable of reading JDF or XMP. Something to consider?

This is the first point at which we the publisher could improve our internal processes using JDF. An industry standard job request form would allow us to create and share internally our own job specification and email it to several printers to request an estimate. If the job request form included prompts for all the things we wouldn't have thought of, such as internal workflow planning or finishing, so much the better. This sort of thing isn't special for companies that buy a lot of print, but for us and many like us, it could help us better manage preproduction, save a lot of time and hopefully cost. It could also help printers cut time and costs for estimating, and maybe even be a way out of the print auction nightmare that plagues so many commercial printers.

When a request for an estimate comes in, Lynx dpm's MIS estimates the job cost based on the quantities, materials and machine rates required to produce the job. The estimate has all the initial process information required including client details, the number of pages and size, layout and colour information. When estimates are approved, they are converted into jobs and submitted via JDF to the Tharstern

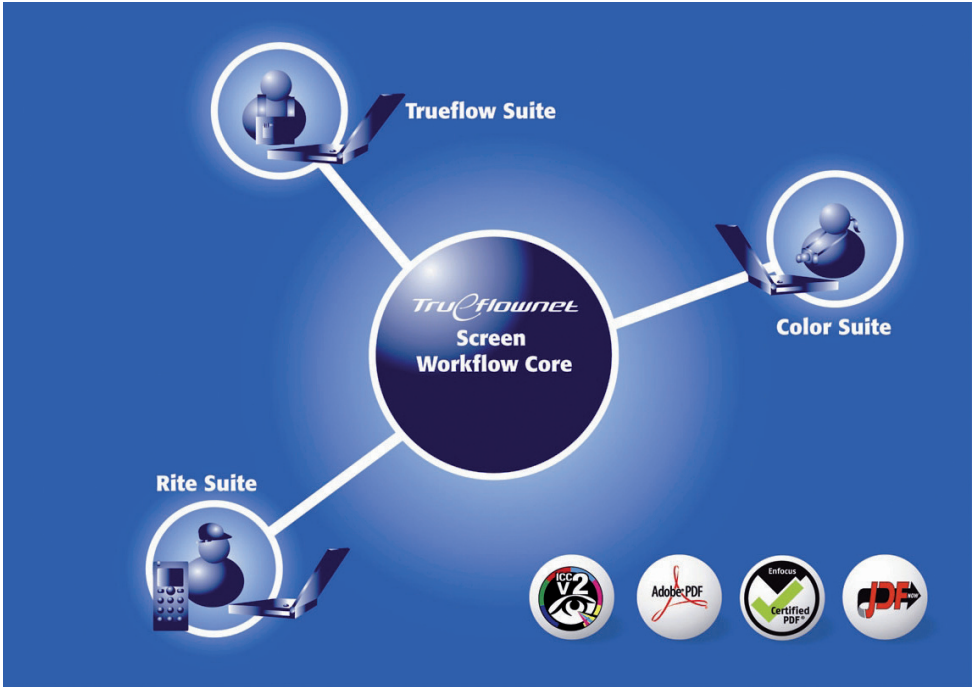


Nigel Clark, technical director at Lynx dpm says that: "Besides the obvious benefits of automation, time saving and job visibility we have also been able to take advantage of the openness of the JDF structure to receive automatic feedback of proof and plate-setter output."

JDF server. This server sends the JDF set-up instructions to both the Screen Ritecontrol server and the Komori K-Station press control system. Any job components already available, such as artwork, can be included in this transfer for automatic processing. Lynx dpm has tested this, but it doesn't suit the ad hoc nature of the majority of the company's work, so it isn't used very often.

The Screen Trueflow server then creates a job, populating the job data according to the information coming from the Tharstern MIS. When a prepress operator starts processing the job in Trueflow, Ritecontrol sends an automatic

to Nigel Clark a “big part of the point of using JDF ... is that you remove the need for operators to be consistent and accurate. The upshot is that Tharstern and Ritecontrol exchange JMF status- and clocking-



Screen is constantly working on ways to enhance Trueflow so that it will also be able to integrate and manage additional press and postpress technologies via JDF.

“In Progress” status change notification to the MIS as a JMF message. Other JMF status change messages can be manually sent from Ritecontrol, which also sends a “Complete” status notification once plates are output.

This is an area Lynx dpm is still working on, because the time a job is in progress within Trueflow is not necessarily chargeable for job costing purposes. The job could, for example, be awaiting proof approval for a significant period of time. Operators manually record some of the status changes, but according

information, but the timings are not currently automatically posted against the job cost. I want accurate job costing feedback from JDF as much as anybody. It is impossible to manage effectively without accurate information. While the information from the shop floor data collection is pretty good, JDF holds out the promise of information free from the foibles of human intervention.”

Another problem is that the Tharstern MIS creates section names, but Trueflow cannot always automatically create consistent file

names. Nigel has, “written a little script that tidies up the CIP4 file names before they are passed to the PCC server.”

Before Ritecontrol there was an insurmountable naming issue with CIP4 files: there was no way to break jobs down into logical sections. If a job consisted of a cover, three text sections and an order form section, then the JDF would just identify them as sections one to five. Operators would naturally treat the different sections as separate Trueflow jobs and there would be no way of identifying which section a CIP4 file came from. By breaking the job into logical sections, Ritecontrol provides the solution to the ambiguous section names problem.

Output is direct to two Screen PTR-4100 platesetters imaging KPG Electra Excel plates. The MIS is integrated with the two Komori presses for simultaneous transmission of JDF data to the Komori K-Station press control systems. The K-Station creates a Komori job for each run on the selected press, and without JDF, machine minders have to enter at the press, for example, quantity, paper description, and so on. Instead job run data is automatically generated from the JDF file coming from the MIS. When the job is loaded at the press, this automatic set-up reduces makeready times. Delivering ink duct information saves around 15 to 20 minutes. The additional JDF information may only save at most a couple of minutes for a given job. However reducing the press minder’s time spent looking for the necessary job information, or the time taken to recover from errant information being entered at the press console, is considerable, although it varies job by job.

All Komori job tickets in Trueflow include the data required to create a CIP3 (the precursor to CIP4) PPF (Print Production Form) file

for each press pass of the job, including a thumbnail image and ink profile information for setting ink ducts automatically. Lynx dpm uses a Screen software extension to automatically create a duplex PPF file when required, which is particularly useful on the ten colour perfector press.

Prior to JDF, Lynx dpm’s prepress operators had to create each job at the K-Station, enter the basic parameters and then load the correct PQ4 file. Now the K-Station job already exists, so the PQ4 file needs just to be loaded and even this can be automated with JDF.

The PPF files are then converted on a separate server to Komori’s proprietary PQ4 file format so that the K-Station software can read them. Creating a new PQ4 file used to require manual entry of basic job data, identifying and loading the correct CIP4 file, but this is now automated, using hot folders.

Prior to JDF, Lynx dpm’s prepress operators had to create each job at the K-Station, enter

the basic parameters and then load the correct PQ4 file. Now the K-Station job already exists, so the PQ4 file needs just to be loaded and even this can be automated with JDF.

This can be a little bit tricky, according to Nigel: “Tharstern, K-Station and Trueflow all share the same unique identifier for each press pass via JDF. However, the current Komori CIP4 to PQ4 file conversion system

Clearly there is a difference between what printers want from JDF and what their customers want, because each has different priorities. Until this gap is bridged our vision of a fully integrated JDF driven digital production supply chain remains a blurry promise.

is hot folder file based, not JDF enabled. The forthcoming version apparently is JDF enabled. For the assignment to work correctly, the CIP4 file and subsequent PQ4 file must be named such that the K-Station software can derive the human readable name of the individual press pass. For example, K-Station job name „12345 Section 1 front%00 could be derived from the file name “12345_S1_

Fr.PQ4”. If the K-Station finds a PQ4 file in the input folder that matches an existing job section, then it will automatically assign it and release the job to the press.”

The K-Station relays status and timing details back to the MIS using JMF. Although the MIS collects the base data, this is why accurate running costs cannot yet be assigned to jobs. At Lynx dpm operators aren't as consistent and accurate as they might be when identifying themselves and their jobs at the press console. The company hopes this will be resolved in the next version of the Komori software. According to Nigel: “The interface for users ‘clocking on’ to the press console has been improved. When last I heard though, there was still a discussion going on about whether gathering data that could distinguish between individual press operators would contravene the European law on human rights.”

The system does however automatically account for prepress material usage, with the costs allocated to individual jobs. The Ritecontrol server automatically posts plate usage to the MIS and for proof material usage, Nigel has written scripts on all Lynx dpm proofing platforms that read JDF information in Trueflow. This identifies the correct job for each output file as soon as it is printed. A script automatically posts the proofing material to the identified job in the MIS and there is a similar set-up for plate output. Jobs not initiated by the Tharstern MIS still have plate usage accurately recorded in this way.

For proofing, Lynx dpm uses an old Highwater Q2 workflow along with Acrobat Server, Enfocus Pitstop Server and a few custom scripts for soft proofing design work. Prepress soft proofing relies on PDF files created with Adobe Distiller, with some jobs soft proofed using Trueflow RIPped PDFs,

which are more reliable. These generally have fairly large file sizes, however the Trueflow RIPped PDFs are completely reliable since everything is rasterised. There are no subsequent font substitution issues and text is guaranteed not to re-flow or change fonts, at the expense of making the proofs resolution dependent. But some customers are not used to viewing rasterised fonts in PDF files, and others worry that the rasterisation is a symptom of the printer font being missing.

For hard proofing Lynx dpm has two Epson 7000 plotters with a Matchprint RIP. The Trueflow workflow system drives and load balances these plotters via a custom script. The Matchprint RIP is only used to assign custom colour profiles to colour match the pre-RIPped TIFF output from the Trueflow to litho print from the Komori presses. This ensures that there is no difference in interpretation between the Trueflow RIP and the proofing RIP.

An HP2000CP plotter with a Highwater Torrent RIP prints non-critical colour proofs, set up just as the Epson proofers using the Matchprint RIPs. The HP proofs are run on cheap stock and are not colour corrected, because Nigel “didn’t find the level of colour consistency and accuracy of colour match to the final printed item of the HP2000 plots acceptable. I deliberately disabled colour profiling on this device to speed up output and so that customers could be told not to expect any level of colour fidelity from it.” The HP proofs are most often used for second round proofing to confirm text corrections, or for simple content proofing.

Lynx dpm does a lot of spot colour work and has had the usual problems with standard PDF files displaying differently to the printed matter. For this reason the company tries to insist on a signed-off hard proof for most

work. Nigel comments: “Besides the obvious benefits of automation, time saving and job visibility we have also been able to take advantage of the openness of the JDF structure to receive automatic feedback of proofer and platesetter output. Whilst this is not directly using JDF, it is something we could not have achieved without this implementation.”

**Alan Halls,
managing
director of repro
house JJays:**

“Integrity of the ad content was the main reason why we developed ChecknSend – JDF was a secondary consideration ... now we are starting to see where it will gain momentum for us.”

JDF data reports are available at the K-Station and in Tharstern MIS, however the comprehensive reporting status JDF promises is not quite there yet. This is due to the few small anomalies in Lynx dpm’s workflow, so while the current status reports are useful for trend analysis, they do not provide accurate enough cost data yet. But that will change as aberrations are ironed out and in the meantime the company gets accurate cost data from the Tharstern shop floor data collection terminals. Screen is also enhancing Trueflow so that it will be able to integrate and manage additional press and postpress technologies and this will provide Lynx dpm with more data to incorporate.

So where in the workflow is JDF data is most relevant for us as small publishers and for Lynx dpm as service providers? There is no doubt that for us, JDF will only be useful

when complete job estimating guidelines are available, and can be made relevant for planning subsequent printed publication projects. It would also be wonderful to have a standard JDF form for requesting print quotes. We could also use this to assist our own internal workflow planning and production scheduling.

Nigel Clark says that: “At the front end, I would like nothing better than for the customer to initiate the JDF workflow with an electronic request for quote populated with pertinent production parameters. However, having experimented with electronic RFQs I found unfortunately that many of our customers are nowhere near as enlightened as you are likely to be. Some find filling out even the simplest form an encumbrance. They prefer to explain the gist of what they want to a salesperson or account manager and have them worry about the production details.”

He also believes that “JDF compliant systems will enable larger contract printers to upload some of the responsibility for accurate job specification to their customers in the same way that they had the commercial clout to pressure customers into supplying print ready PDF files.” It comes back to education and the steady spread of JDF so that customers have an incentive to change.

Clearly there is a difference between what printers want from JDF and what their customers want, because each has different priorities. Until this gap is bridged our vision of a fully integrated JDF driven digital production supply chain remains a blurry promise. However what starts as a shapeless blur often comes into sharp focus as we work out how to turn promise into reality.