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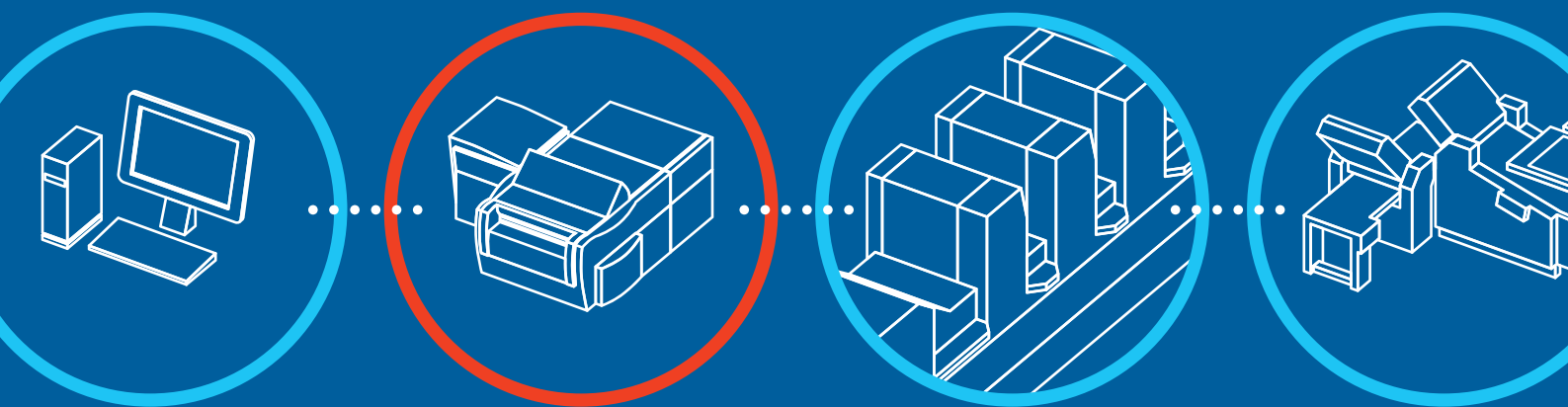
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**Prinect**

**User Guide**

**Adobe PDF Print Engine**

**HEIDELBERG**

## Integration of Adobe's new PDF Print Engine in Prinect: yielding a consistently PDF-based workflow that encompasses both layout work and all print shop production processes.

### Next-Generation Software: Adobe PDF Print Engine.

Heidelberg is integrating Adobe's new printing platform, the PDF Print Engine, in its Prinect® workflow management system.

Adobe PDF Print Engine is a next-generation software platform that works exclusively with PDF data and is completely controlled by JDF/JMF. It permits PDF-based integration of the entire Prinect production process, from creative work through all phases of production in the print shop. The data is converted by RIPs (Raster Image Processes) – such as Prinect® MetaDimension® from Heidelberg – into printing data: either high-resolution halftone dots for plates or RGB pixels etc. for proofing and softproofing.



The special advantage: Adobe PDF Print Engine can be installed anywhere in the workflow without requiring any permanently allocated memory resources.

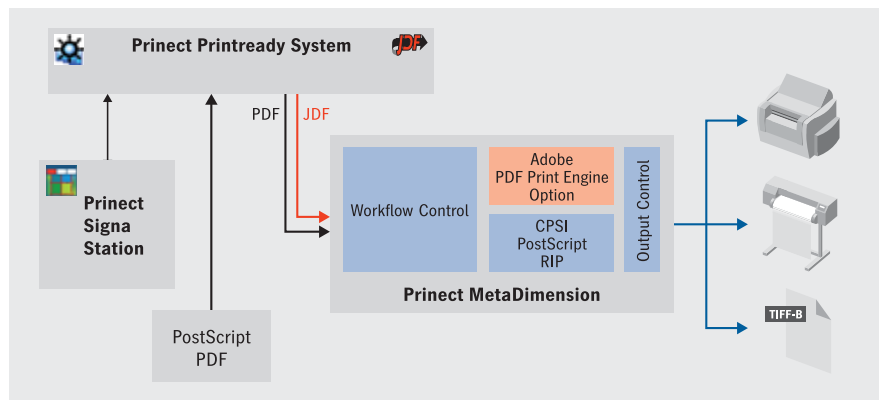
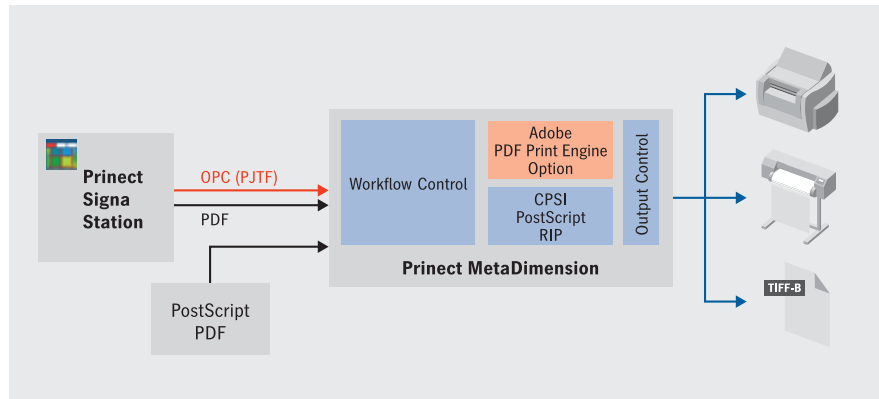
Adobe PDF Print Engine converts the content defined in a PDF entirely on the basis of JDF/JMF process and production information. Within the workflow, this results in identical output results independently of the devices used. Last-minute changes before printing are also possible. Heidelberg expects that this new technology will make the production process more reliable and productive – from the designer all the way to the printer.

### Reliable Insertion in the Workflow

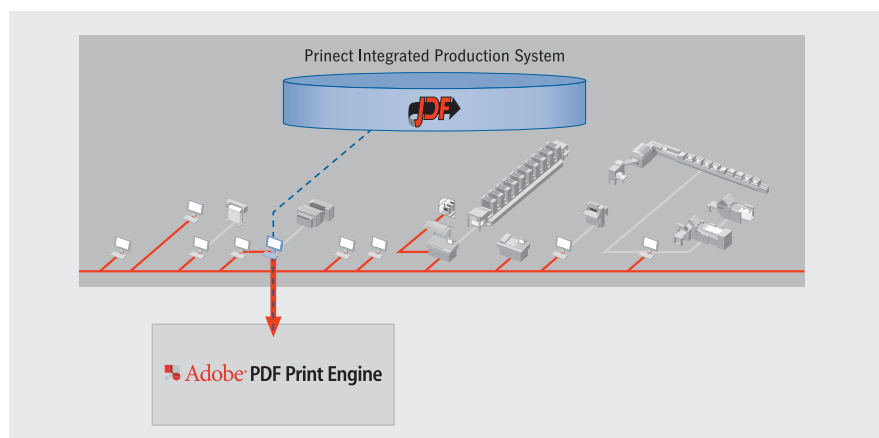
Adobe PDF Print Engine supplements Adobe CPSI (Configurable PostScript Software Interpreter), which is now used by Prinect MetaDimension. CPSI is based on PostScript, which until now has made it necessary to also convert PDF printing data into PostScript format prior to printing.

To gain the ability to use both PDF and PostScript files for this, starting in 2007 a two-track approach will be taken for the Prinect workflow with Prinect MetaDimension: Adobe PDF Print Engine will be installed as a second renderer alongside Adobe CPSI, and can be selected when required. Nearly all of the RIP functionality of Prinect MetaDimension – such as screening, color management, and calibration – is used by both software modules.

This two-pronged strategy will let our customers follow a safe, cost-effective path for migrating to this new technology, because they can take advantage of the advantages of Adobe PDF Print Engine for the production workflow with a reasonable additional investment and without giving up any existing functions or work routines.



At the same time, Prinect users profit from major benefits: Prinect is a strictly JDF/JMF-based workflow that is able to directly process all job data delivered by Adobe Print Engine without any conversions. This not only eliminates the need for additional in-house data checks, but also makes the overall process faster and more cost-effective.



## What does this mean for Prinect users in detail? And what are the advantages of the new technology?

**Answers to these and other questions are given by Dr. Peter Leu, the head of Product Management Prinect Preprint at Heidelberg, in the following interview.**

### **What is Adobe PDF Print Engine?**

Adobe PDF Print Engine is the next-generation printing platform technology from Adobe. In practical terms, this means that OEM customers receive from Adobe a new software package containing important rendering functions, like those of the RIPs, among other things.

### **Does this mean that Adobe is now making RIPs?**

No, Adobe will not be supplying any RIPs to end users. Adobe supplies basic software technology to OEM customers such as Heidelberg. These in turn license the software and incorporate it into their own products. For Heidelberg, Prinect MetaDimension is the product that does the “RIPping” for Prinect systems. Other well-known OEM customers of Adobe are Kodak, Afga and Screen. None of this will change as a result of Adobe PDF Print Engine.

### **So what exactly is a “RIP”?**

RIP is the acronym for “Raster Image Processor”. Its job is to convert logical information from a PostScript or PDF file into pixels that can be output on a specified device, for example a monitor, a laser printer or a CtP recorder. These can be simple RGB pixels for display or a monitor screen. Or they can be millions of black dots 20 micrometers across for the stochastic screen of an offset printing plate that is used to transfer ink to paper via a rubber blanket. Heidelberg customers use Prinect MetaDimension to perform all of these tasks.

### **So Prinect MetaDimension is Heidelberg's RIP?**

Yes, but Prinect MetaDimension is much more than just a RIP. Its basic function is RIPping, but it does a lot of other things as well, such as managing queues and controlling connected devices. You can read about the details in the Prinect MetaDimension product description.

### **Why does Heidelberg use Adobe technology?**

Adobe laid the groundwork for today's printing technologies with the 1985 launch of PostScript. Heidelberg has been a partner of Adobe from the start. Our “Linotype RIP 1”, for example, was the world's first high-resolution RIP. Since then, Adobe PostScript and PDF technology have developed into high-performance global standards. With the new PDF Print engine, Adobe is now introducing yet another technological level in order to increase further the consistency, reliability and cost-effectiveness of the print process.

**What is the difference between the new Adobe PDF Print Engine and the technology being used today?**

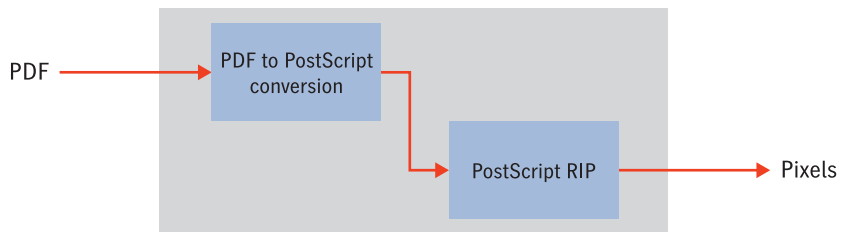
Today Adobe-based RIPs – including MetaDimension – work with Adobe CPSI (which stands for Configurable PostScript Software Interpreter). This technology has its roots in the first implementation of the Adobe PostScript Interpreter. The last major technical improvements to it were introduced with Adobe Postscript 3.

With the PDF Print Engine, Adobe is now introducing a completely new architecture, namely that of a dedicated PDF RIP controlled by JDF commands.

**I haven't quite understood what we need that for.**

CPSI is a mature technology that serves our industry very well. But with the rapidly spreading use of PDF, the time has now come for a new technology. So that the PostScript-based CPSI could be used for PDF, Adobe had to develop another internal software module to convert PDF format into the PostScript language.

Until now, PDF data first had to be converted to PostScript before it could be output as pixels by the CPSI.



An architecture based entirely on Adobe's PDF core technology dispenses with the need for this conversion. This lets it handle PDF faster and more precisely, in addition to managing transparent objects in PDF more consistently. It also reduces the considerable time lag between the release of a new PDF version and when Adobe provides the corresponding upgrades for our RIPs.



**Will there be a new version of the Creative Suit or Acrobat PDF in the near future that only works with the PDF Print Engine?**

We expect that Adobe will continue to ensure the compatibility of existing CSPI-based RIPs with new versions of its Creative Professional Desktop products for a long time to come. It is quite possible that some functions, like those for transparencies, will even work better with the PDF Print Engine. At this time we aren't aware of any specific plans on Adobe's part.

**So the Adobe PDF Engine only works with PDF?**

That's correct!

**What happens to PostScript?**

PostScript has to be converted to PDF before being sent to Adobe PDF Print Engine. This can be done by the Acrobat Distiller or the Printready Normalizer: Adobe PDF Print Engine is unable to interpret PostScript.

**Will this cause problems for print shops that continue to receive a lot of PostScript files?**

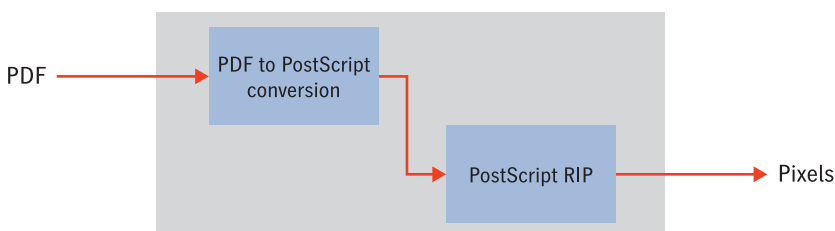
No problems are actually involved, because all PostScript documents can be easily converted to PDF. It makes a great deal of sense in any case to convert jobs to PDF before RIPping them. In many parts of the world, however, PostScript files still account for a large share of the work printers receive - often in environments where completely PDF-based workflows are neither needed nor wished. That is why Heidelberg will implement the PDF Print Engine as an alternative interpreter for Prinect MetaDimension. This will let our customers get acquainted with the benefits of the PDF Print Engine without changing how they work.

**PostScript RIPs have a long, occasionally rocky history. Will the PDF RIP have teething problems as well?**

That's possible, of course. But our strategy of implementing Adobe PDF Engine in parallel takes this into account: it reduces the risks that changing technologies entails - making it manageable instead.

**Everyone is talking about JDF. Why does a new software technology like Adobe PDF print Engine need JDF?**

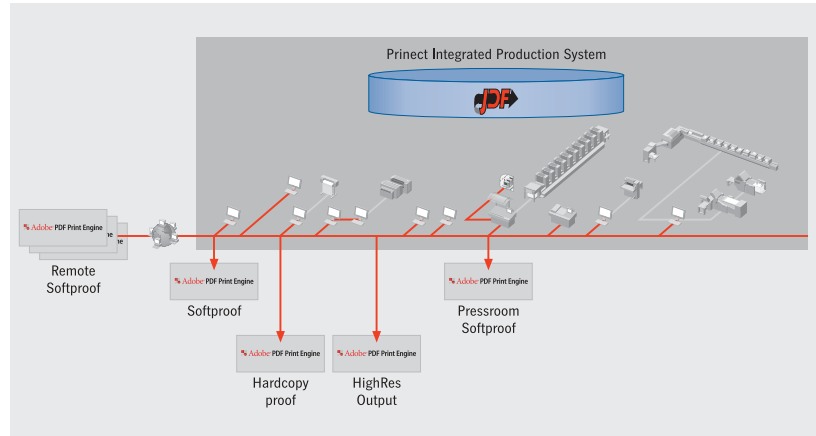
One of the best things, if not the very best thing, about Adobe PDF Print Engine is that it implements a kind of black box whose RIP functionality is completely controlled by JDF commands. There aren't any other control parameters or stored data from preceding jobs that could affect the results. That role is reserved completely for JDF.



We can integrate PDF Print Engines everywhere in the workflow, from the layout stage across prepress to softproofing of sheets on the press – and obtain exactly the same, consistent results every time. Unless the PDF and JDF information changes, the results are identical across the board. This takes us many steps closer to implementing a truly consistent production process.

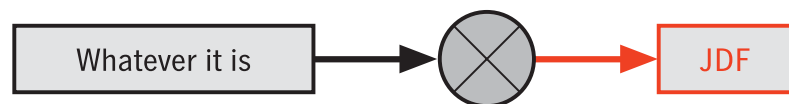
### That fits well to Prinect ...

Exactly! Just imagine the possibilities of our unique – because it's entirely JDF-based – Prinect environment. Prinect from Heidelberg is the world's first workflow management system to employ an internal JDF command structure. That is why Prinect can deploy Adobe Print Engines so easily anywhere in the workflow and send JDF and PDF data to them.



PDF Print Engines can be incorporated anywhere in the workflow: from the layout stage across prepress to the press.

All other suppliers have to convert internal data to JDF several times. We are convinced that this approach is very error-prone. So while Adobe is making a giant leap forward by making PDF-to-PostScript conversion prior to the RIP more reliable and faster, our competitors have to be very careful to avoid letting mistakes creep in when converting their proprietary job tickets, whatever form they may take.



### When will Heidelberg have a product that incorporates Adobe PDF Print Engine?

The first such products are planned for early next year, in other words the beginning of 2007. We will also offer an additional Adobe PDF Print Engine renderer as a new option for Prinect MetaDimension. If data arrives in PDF format, customers can then decide on a job-to-job basis how to RIP it in Prinect MetaDimension: either with the known PostScript RIP process or the new PDF Print Engine. This will give Heidelberg customers maximum flexibility and enable very reliable production – also while they are transitioning to the new technology.

### Will Heidelberg's screening systems work with the addition PDF Print Engine renderer?

Yes, all Prinect screening systems can be used.

**Is there a special renderer for Prinect Printready that is based on Adobe PDF Print Engine?**

Prinect MetaDimension has all of the attributes of a standalone RIP, and can also serve as a renderer in a Prinect Printready System. The use of Prinect MetaDimension in this new environment also enables flexibility and reliable production with the Prinect Preprint system.

**Is it possible to upgrade an existing Prinect MetaDimension installation?**

Yes, but only from the current version of Prinect MetaDimension. Only the very latest version will be able to reliably control the PDF Print Engine.

**Can a Delta installation be upgraded?**

No, that is not technically possible. If you want to utilize the PDF Print Engine, you must migrate to Prinect MetaDimension.

**How long will the present PostScript RIP technology continue to be supported?**

Until well into the future. We don't have any exact dates for when Adobe plans to phase out support and maintenance for CPSI. Thousands of CPSI-based high-resolution RIPs are installed around the world, so we think that it will take another decade to complete the switch to the PDF Print Engine.

**Dr. Leu, thank you very much!**

