Adobe® PDF Print Engine

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Before getting started, have the PDF Driver downloaded – on a Windows 8x or later.
Download the drivers on the following link:
- HP DesignJet Z6: https://support.hp.com/us-en/drivers/selfservice/hp-designjet-z6-postscript-printer-series/21158677
- HP DesignJet Z9: https://support.hp.com/us-en/drivers/selfservice/hp-designjet-z9-postscript-printer-series/21158678

Once downloaded, send the job "ALASKA_v4.pdf" to print through the PDF driver.
Print the same document through competitor's driver (or HP DesignJet PCL3 – raster driver)

Link to download "ALASKA_v4.pdf": https://h22189.www2.hp.com/assetdetails/DEEA2E42-42D7-4A9B-995C-778C824AF5A2
Point the differences mentioned at the end of this document.

Adobe® PDF Print Engine is a reference for the print industry. It's an improved version of the Adobe® PostScript, with more features and improving the limitations that PostScript had.

A PDF file provides a convenient way to move content from a native application to a standard workflow, including all the necessary components to provide digital printing. PostScript provides no direct support for some elements that PDF supports, including live transparency. Therefore, in those workflows where a PDF needs to be converted to PostScript before sending it to the printer (i.e. Driver PostScript), transparency must be flattened and other elements must also be converted for printing.

The Adobe® PDF Print Engine overcomes those constraints with the ability to process PDF files natively, without unnecessary conversions.

How it works with PostScript:
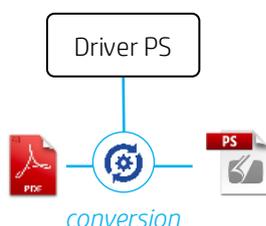
How it works with PDF driver in a printer with Adobe PDF Print Engine embedded[1]:
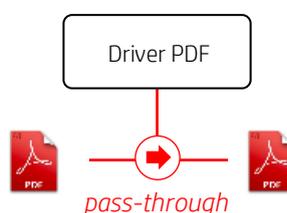
These end-to-end native PDF workflow solutions dramatically improve the printing process by increasing flexibility, predictability, and reliability—which, in turn, improves productivity for the print user.

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[1]Applications that support passthrough: Adobe Reader/Acrobat XI onwards; Adobe InDesign 2015 onwards; Adobe Illustrator 2015 onwards

Complex content prints correctly the first time. You don't need to reprint them because you haven't noticed about the "simulate overprinting" button, as it's by default in the Adobe Reader/Acrobat application. Fewer complications and more accurate previews result in a faster and more efficient workflow.

Working with live transparencies

Live transparency can be edited and can interact with underlying objects, therefore it's better to keep transparency so calculations and color management can be done at the very end in the print workflow, without unnecessary conversions. Flattened transparency, on the other hand, cannot be modified using the source application nor any application into which the file is imported.

The Adobe® PDF Print Engine embedded in the printer, uses the same core technologies employed by Acrobat DC, Photoshop, Illustrator and InDesign. Using the same algorithms for content creation, job management and final rendering lowers the chance of discrepancies, and increases predictability: what you see on-screen is exactly what you will get when ink hits paper.

Notes:

- The competitors can obtain comparable results, but always using an application (such as Adobe Reader/Acrobat)) that is rendering the PDF file with Adobe technologies before submitting the raster to the printer. For those files with more complex features such overprinting, a further step is needed and Simulate Overprinting option needs to be enabled. For doing that, in the printing dialog box go to Advance -> Output tab and check "Simulate Overprinting" box.

- Those competitors who do not have a renderer that supports all PDF features like Adobe PDF Print Engine will produce wrong outputs whenever submitting files through USB printing. The main difference between submitting files directly from USB vs. using a Driver is that when a job is submitted from a Driver, the application (i.e. Acrobat Reader) oversees doing the rendering: processing all complex features and flattening all the printer is not able to process.

- To enable the overprinting capabilities through the drivers, follow these steps:
  Print → Advanced → Simulate overprinting (On/Off – By default is Off) → Ok → Print.

How to print and what will be the result:

1. USB – Printing from USB with HP DesignJet Z6 (or Z9⁺) will produce accurate results, color consistent with the original PDF and preserving all transparencies and overprints. Whenever a PDF file is printed through USB with the competitors' printers (Canon or Epson) transparencies are not being processed correctly, resulting in opaque areas in the final print output, obtaining results explain at the end of this document.

2. Adobe Acrobat – Main output differences in overprinting and transparencies are due to a specific setting named Simulate Overprinting. Find below the different combinations:

a. "Simulate overprinting" tab disabled (off – by default).
   i. With HP DesignJet Z6 (or Z9⁺) the result will be the same as USB: you will see all the live transparencies on your document.
   ii. With competitors' printers, result will be as mentioned below: loss of information and no transparencies/overprints.
b. "Simulate overprinting" tab enabled (on – process specified in Notes)
   i. With HP DesignJet Z6 (or Z9⁺) the result will be the same as the previous cases. The live transparencies will always come as expected.
   ii. With competitors' printers, the result will be very similar as HP's, but the process of the document will take a lot longer. This is because submitted PDF is being converted (flattened) to another format through the application. In case of an application that uses Adobe technologies, these conversions will produce similar output as HP printers. Also, bear in mind that whenever enabling "Simulate Overprinting" option for files using overprint features, additional time for processing the file is needed, resulting in application being freeze until the PDF has been completely flattened.

Settings to print the "ALASKA_v4.pdf" document:
- Operating System: Windows 8x or onwards
- Media: Océ draft paper (Or HP Plain paper), Normal mode.
- Rendering resolution of file: 600dpi

HP Z6 – PDF correctly interpreted

Epson SC P-9000 – PDF no clear transparency
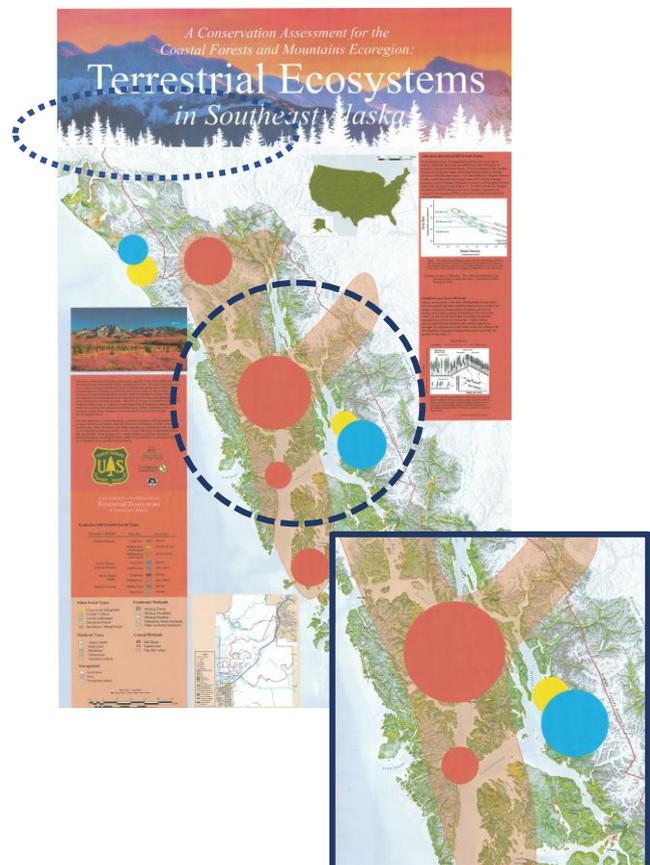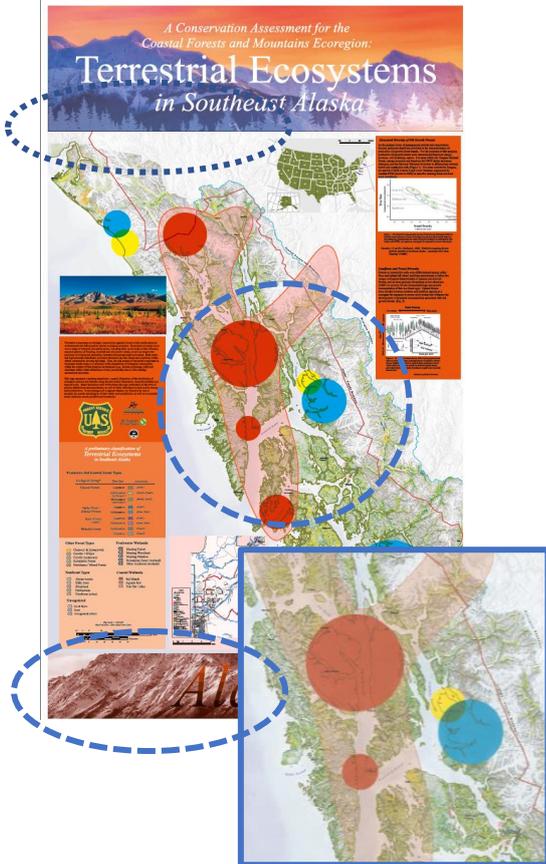
- Blue color transparency over trees

- Overlapped colors, giving green

- Transparencies, not losing detail

- Spot colors, well defined with Pantone Emulation

- Loss of spot colors and layers