

## COLOR SCANNING – DO YOU KNOW WHAT YOU ARE REALLY GETTING?

See below for a definition of each term	<b>Captiva Input Accel®</b>	<b>Kofax Ascent Capture®</b>	<b>Kodak® Capture</b>	<b>J&amp;K DpuScan®</b>
<b>Multistream Capability</b>	Only using ISIS multistream driver currently available for only Kodak and Panasonic scanners	<b>NO</b>	Only a “dualstream”	<b>YES!</b> With every color scanner
<b>Digital Color Filtering</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>YES!</b> With every color scanner
<b>Color Deskew</b>	Only if provided by the scanner	Only if provided by the scanner	Only with Kodak scanners	<b>YES!</b> With almost every color scanner*
<b>Adaptive Threshold</b>	Only if provided by the scanner	Only if using a proprietary VRS™ board or software, or if provided by the scanner	Only with Kodak scanners	<b>YES!</b> With every color scanner
<b>“Online” Dynamic Threshold Adjustment</b>	<b>NO</b>	Only using a proprietary VRS™ board or software	<b>NO</b>	<b>YES!</b> With every color and grayscale scanner

\* DpuScan needs a scanner that uses black drive belts, which will subsequently produce black borders around an image. The majority of scanners have this feature, however, there is a small number that use white drive belts, where DpuScan’s Deskew functionality would not work properly.

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**Multistream Capability** – This refers to the simultaneous output to disk of different image formats – black & white, grayscale and color – during the scan process.

Multistream is only possible when: 1) a color scanner has two different cameras (one black & white and one color) and has the capability to process images simultaneously; 2) if the driver software such as ISIS® or TWAIN® provides multistream functionality, where the color image will pass through to the application, decompress the image, and apply a threshold to generate a grayscale and/or black and white image; and 3) an application software that has its own decompression thresholder and compression tools.

This is important because in the very near future, the majority of scanners that are produced will be color scanners, where no information will be lost from the image. However, specific image processing functions such as Forms Processing, and especially OCR and ICR, are still performed best using a black and white image.

For example, lets say you are in the legal profession and have a highlighted document. Multistream capabilities allow you to create a scanned color image at the same time creating a black and white image that will have an OCR performed. After scanning the image you will have the color version without losing the important highlighted information, while the OCR will provide a searchable “key word” text document.

**Digital Color Filtering** – This refers to the dropping out of multiple colors during the Forms Processing, where it is most commonly used.

Standard color drop out only allows for one color at a time (red, green or blue) to be dropped out. Digital Color Filtering, however, allows for multiple colors to be dropped out at the same time when scanning a batch of documents. It also allows you to eliminate unnecessary data from the image to lower the file size and save storage space by filtering out unnecessary background information, color shading, and unneeded document information such as images, forms, logos, etc.

For example, lets say you have a batch of invoices with blue backgrounds and a batch of order forms with red backgrounds. Digital Color Filtering in J&K’s DpuScan allows you to set “filters” to drop these colors out of the background **IN THE SAME BATCH**. You do not have to have to stop scanning, change your filter settings and then rescan the second batch.

**Color Deskew** – This refers to the “skew” that occurs each time a document passes through the scanner feeding system, and the subsequent “straightening” of the document.

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Having a solid deskew is very important because you do not have to waste time making sure the each document is fed straight and correctly into the scanner to get an upright, straightened image. Secondly, for any type of image processing such as Forms Processing, OCR or ICR, the chances of you having a successful image process occurring increase dramatically the straighter the image is.

Most deskew functions today only work if the scanner skews the document at 7° of skew or less, and uses a simpler, less accurate parallelogram algorithm. DpuScan's deskew works with real pixel rotation at any deskew angle.

**Adaptive Threshold** – This refers to the flexible utility that determines whether a pixel is black or whether it is white (according to its grayscale value) when converting a color image into a black and white image.

For example, if we make a black and white image from a scanned color image, the image will first be converted into a grayscale image, and based upon previously defined thresholds, the software will determine which pixels will be black and which ones will be white. Normally threshold parameters are given by the scanner or from certain drivers such as VRS™, ISIS®, etc.

**“Online” Dynamic Threshold Adjustment** – As of today, DpuScan is the only application that provides the ability to threshold “online”, on the screen using sliding rulers and seeing the results right in front of you in the image window. Using all other applications, you must determine your settings, scan, view the image, make settings adjustments, then scan again, and repeat the process until the desired thresholding has been achieved.