

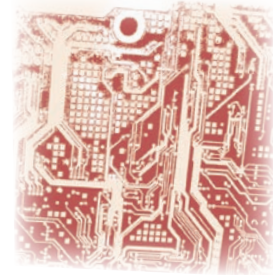


Page Improver

Page Improver® is a software for automatic image processing of scanned pages and a fundamental production tool for digitization of books and bound documents. It is the ideal complement to any book scanner, reducing substantially operator interventions on image processing and greatly improving production capacity.

It is designed for fast processing sequential images of scanned pages from books, magazines and newspapers but also from loose sheets. It produces a set of typical treatments that are necessary to prepare pages for OCR and for online publishing.

Key features include ability to automatically follow evolution of pages as they shift and rotate under the camera over time of scanning. Detecting precise position of gutter and dimensions of pages to split pages and crop outer borders is done with an extraordinary precision.



Source Images

While a single sheet document is usually scanned by a single camera scanner, a bound document may be scanned with a single camera or a dual camera scanner.

Source images are usually raw image scans of pages presenting artifacts and defects.



single page



dual page on single image



left and right page on two images

Image Formats

Formats	Input	Output	Compression
TIFF	✓	✓	None, LZW, CCITT G4
JPEG	✓	✓	Any
BMP	✓	x	None

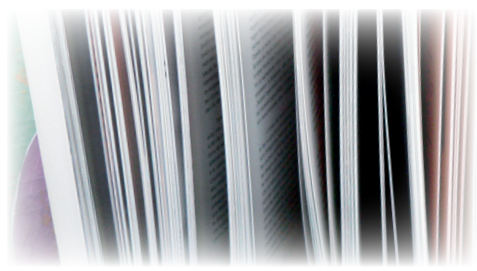
Page Sizes

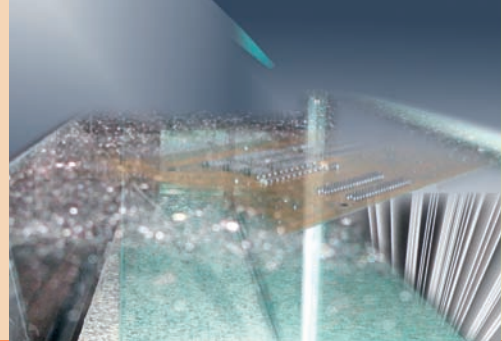
Page Improver® is able to handle very large source images, such as color scans of newspapers for example, up to A2 and up to 200 Mb per page.

Typical artifact	Typical defect
<ul style="list-style-type: none"> • dark border around the page • view of gutter at binding of pages • shadows of page curvature close to the binding 	<ul style="list-style-type: none"> • dark page background • skewed text (usually due to rotation of page or print) • bleed through (transparency from the rear side of page)

Page Improver® removes these artifacts and defects to enhance aspect and readability of document.

Image treatment is highly optimized for speed with no compromise on quality. Processing a book is usually faster than scanning it, that allows running *Page Improver*® in parallel with the book scanning task.



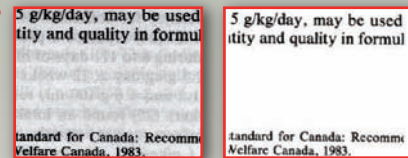
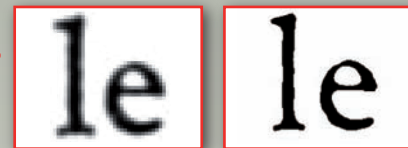
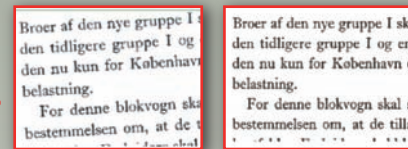


Improvements on Pages

Split	Separates left and right pages in two images depending on position of gutter.
Crop	Takes away black borders and artifacts associated to presence of gutter.
Deskew	Corrects rotation of page to reach horizontal text lines. Works with grayscale and color images, on pages with very small amounts of text, pages with graphics and pages with tables.
Clarify	Clarifies background of page by removing darkness of aged paper. Corrects density of text and contrast of photos.
Oversample	Improves aspect of text by smoothing edges and removing stairs artifact when converting to B&W bitonal.
Resize	Resizes pixel matrix to different size and corrects DPI factor. Allows scanning at fixed resolution but providing images in different resolutions.
Unbleed	Removes print artifacts that appear by transparence from the rear side of the page.
Threshold	Converts images to B&W bitonal, for monographs or books that include only text and line art images or gravures.
Join	Assembles two images of left and right pages in order to make a dual page image.
Canvas	Applies selected canvas size to all images of document, resulting in uniform page format output.
Center	Centers horizontally content of pages on canvas. This allows left pages and right pages to appear in a similar way.

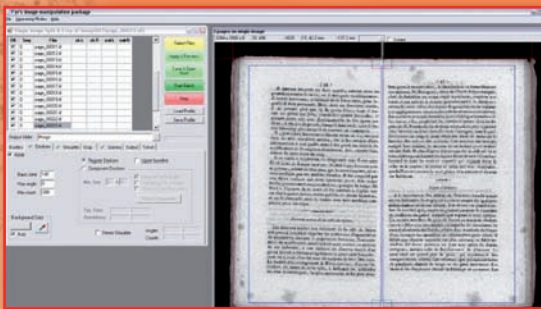
before

after

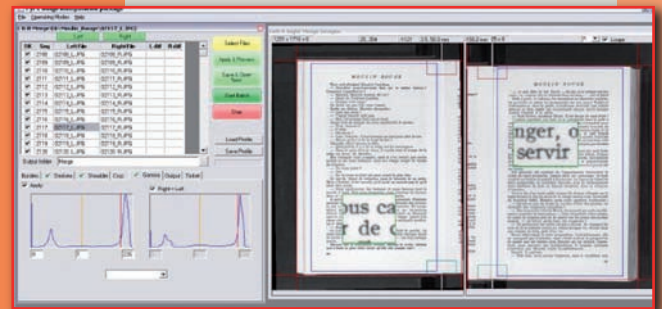


User Interface

Page Improver[®] is composed of a page navigator, an image treatment setup window and an output preview pane with lens.



dual page on single image



left and right page on two images

Other Features

Page Improver[®] may work in "page by page" attended mode or in "batch" unattended mode. Page by page allows fine tuning image treatment on sequential pages while batch mode allows to run settings on a whole set of pages.

Presets may be stored in a profile with all configured settings for a book that represents a typical collection. This profile may be used to process all books of this collection and save significantly operator time.

On a multi-processor system, a single license allows to run multiple instances of *Page Improver*[®] to simultaneously process several books.



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