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Book Scanning Solution

Books become digital in one single run

Suitable for all scanner types

Improved turnaround time with automatic batch processing

Unique page cutting tools

Accurate automatic book-fold flattening

Special scanning tools for single page documents

OCR-connection option

WiseBook®

Digital books are the future!

There are a large amount of books and records that only can be accessed by visiting libraries, museums or record office. Unique documents such as wills, land deeds, maps, cemetery records and more. Physical handling deteriorates these originals over time. In the early days of digital interlibrary loan and digital document delivery, available software was simple and image quality expectations of the recipients was low. Times are changing and the need for efficient solutions and perfect, printer-ready images have made solutions more and more complex. CSoft introduces its part of the modern solution to simplify the existing processes and produce perfect printer ready single and multipage images files.

Book scanning

There are basically two ways to scan a book.

1. using a conventional flat bed scanner
2. or using a planetary camera

Cost-wise there is no contest. A conventional flat bed scanner is much cheaper than a planetary camera. However, the flat bed scanner has some severe limitations.

- To get a decent image, the book must be placed face down on the glass. This means picking it up, turning the page and placing it down again between each scan.
- Even applying pressure on the binding will make the page "curve down" at the centre of the binding, distorting the words which are near the bound edge.
- No matter how much pressure is applied there will be some dark shadows down the centre of the book where the light travels further and focus is offset.
- All of this strains the old originals and in the worst case it can result in destruction of the original.

CSoft

The perfect software to scan fragile originals on a flatbed scanner must be equipped with all the tools needed to compensate distortions of the curved book-fold and help eliminate the use of force to achieve perfect results. WiseBook supplies this as well as all other important tools to improve the capture time.

Software tasks

Scanning books can typically be described as follows;

- Books are scanned two pages at the time regardless of scanner input device - flatbed or planetary
- automatic content location and margin setup
- detect and split pages
- distortion corrections including - book-fold correction
- select scanned page image output. There are many options, including multipage file output and OCR-post-processing
- saving the setup of fine-tuned parameters of all used tools for future re-use
- create a batch job description to automate the whole book scanning process.

Now the real job can be started using the previously saved batch automation and processing the full book using only one single command.

WiseBook solves all of the above mentioned tasks.

WiseBook is your choice

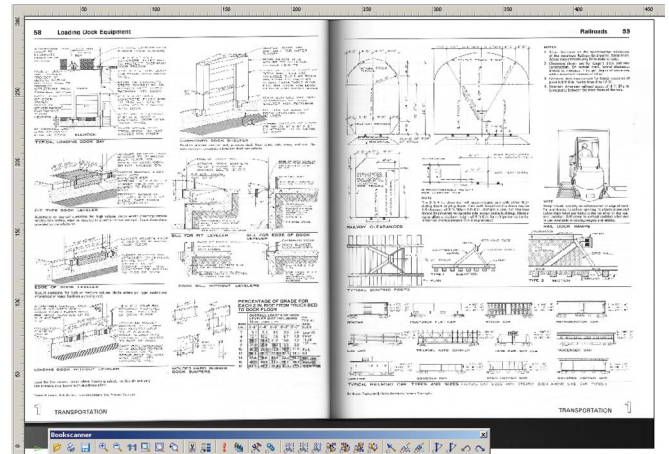
WiseBook combines production technologies of the commercial document capture world with the special and uncompromising needs of preservationists. The result is a high performance digitization solution that can be used 'out-of-the-box' or included as a part of large and complex digitization project. In either case, WiseBook can be configured to produce output at virtually any quality level while offering the highest possible throughput. WiseBook works with books, drawings, photos, maps or any kind of source documents with the same high productivity gain.

Origins of WiseBook

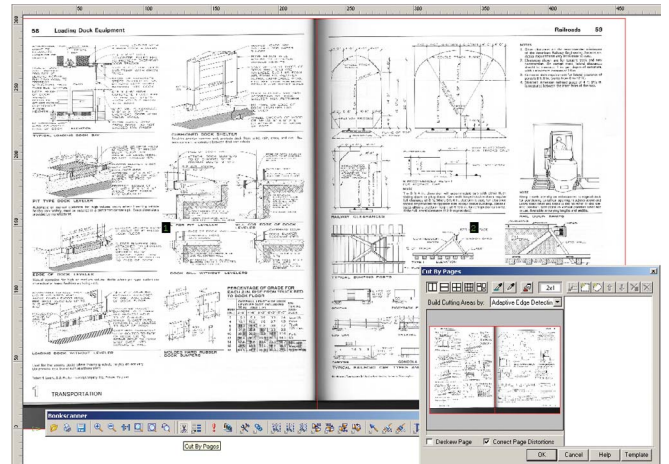
WiseBook is based on CSoft image processing and recognition technology developed and fine-tuned in cooperation with users over the past few decades. This technology creates the foundation for WiseBook's new and smart page processing tools. Strong user feedback during the development allowed for a simple and efficient solution for book scanning with a wide range of dedicated tools. As an added bonus WiseBook includes tools for efficient scanning of many other sources besides books.

WiseBook at a glance

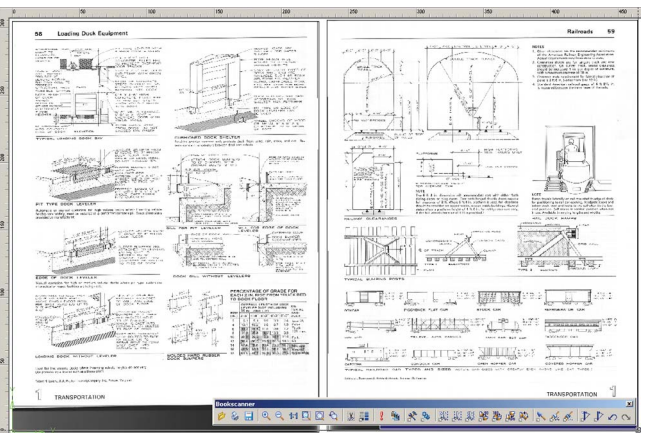
The powerful image treatment capabilities built into WiseBook automatically eliminate skewed images and remove unwanted fan and gutter. WiseBook are compatible with most large and small format scanners. When used with wide-format flatbed or planetary scanners WiseBook scans two pages at once automatically splitting pages and correcting for book-fold. The same process can also be applied to already scanned images. WiseBook scans both the left and the right page of the book in one pass and then digitally separate the pages to two images. WiseBook then automatically flattens the "curved" part of the page where it dips into the centre binding. Each double page takes only seconds to scan process and save. Then you turn the page and click the 'Scan' button again for the next pair of pages.



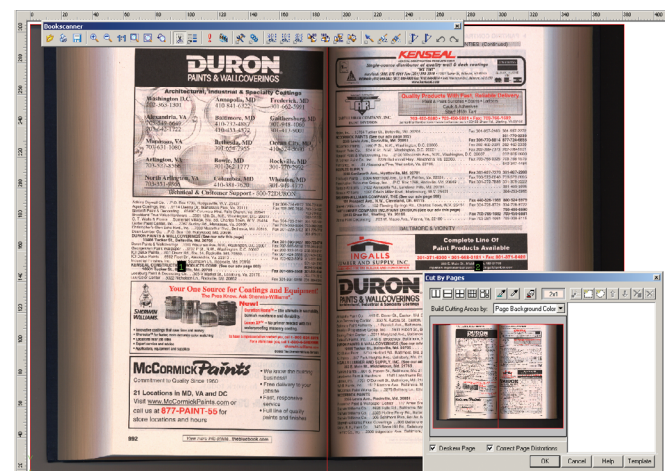
Monochrome double-page scan



Monochrome double-page scan split preview



Double pages splitted and corrected



Colour double-page scan split preview

Cutting a double page scan

WiseBook automatically cuts scanned books into pages. It is possible to align the cutting according to different book-fold orientations. Book-folds can be vertical or horizontal. There is also an option for trimming the book-fold area of the image on a single page scan.

Several cutting methods are available. The most common is to use the background color of the page to identify the page area. The Book-fold area is normally darker as the gradient incline. WiseBook can automatically correct brightness of the book-fold removing these gradients. This can also be done in the post-processing of the image after separating the pages. The user can check how WiseBook estimates the cutting area. The cutting tool shows the calculated page border, book-fold place and brightness distortion areas for each page of the book overlaid on the image of the book. If the result is not adequate the operator can correct them manually.

Cleaning to perfection

A brightness grid is used to approximate the brightness gradient on the book-fold. Using this grid WiseBook can automatically correct geometric distortions on the page and try to estimate the shadow curves near the book-fold.

The page image can be automatically deskewed. WiseBook estimates how skewed each page is and rotates the cropped page to 0 or 90 degrees.

Sometimes it is necessary to crop scanned page images to the page contents thus cutting off the page margins. WiseBook delivers this option. Other options includes: forced page rotation and fit page contents to the closest standard page format. All parameters of the settings mentioned above can be saved as a template file for future use during batch scanning.

Smart Productivity

WiseBook is for large repetitive jobs. It can help you with thick multipage foliates scanning using advanced batch processing. Once you create parameter templates for page scanning and processing, such as cutting, deskewing etc, you can set a batch sequence for the scanning and post-processing commands. This sequence can be saved as a script file and invoked when you start the book scanning. There is a wide selection of image processing commands that can be included in the batch processing resulting in perfect, cleaned and uniformly processed scanned pages stored in multipage raster files. These files are then the electronic copy of your scanned books. The whole process automated by pressing just one button on the WiseBook toolbar.

Optionally you can connect external OCR tools such as the FineReader OCR Engine with WiseBook to convert scanned pages to plain text or to rich text format files. WiseBook can easily be connected to other local OCR engines.

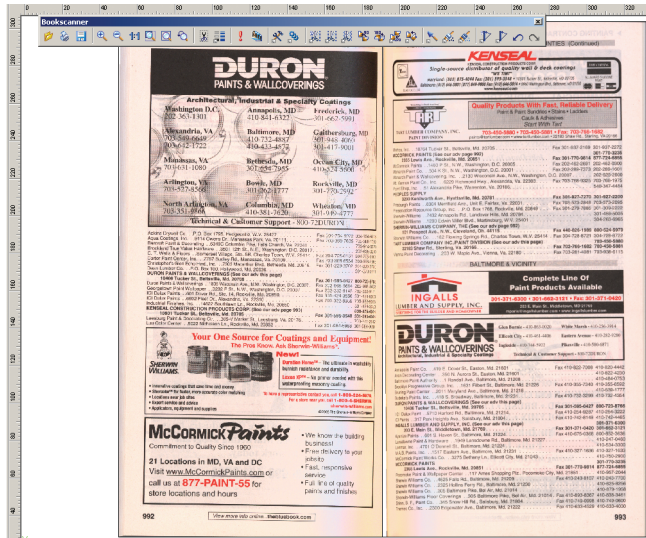
WiseBook - not for books only

Single page scan

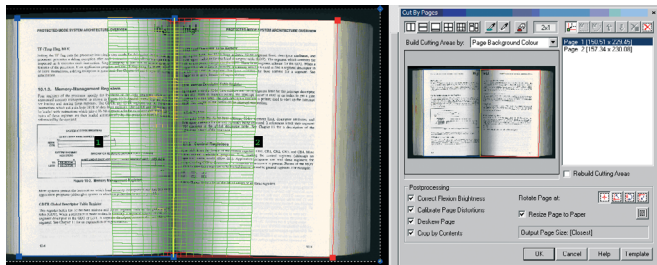
WiseBook can help you to increase the productivity of scanning single pages as well, automating tedious routine tasks. If you place a single page on a flatbed scanner you should not have to worry about alignment. WiseBook automatically finds the page, crops the image and deskew it. WiseBook can also resize images to preselected paper size or to the closest standard page size.

Several pages at once

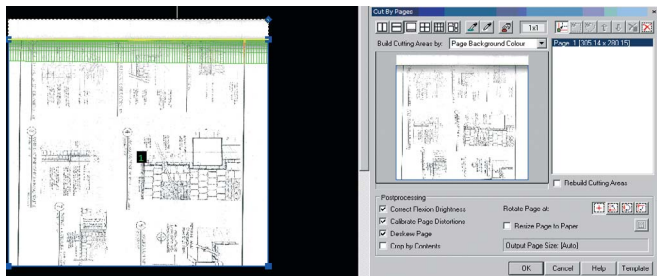
The next option is to scan several pages at once from the flatbed scanner. It does not matter what kind of pages (or images) you placed in the scanner. They can be of the same size or vary in



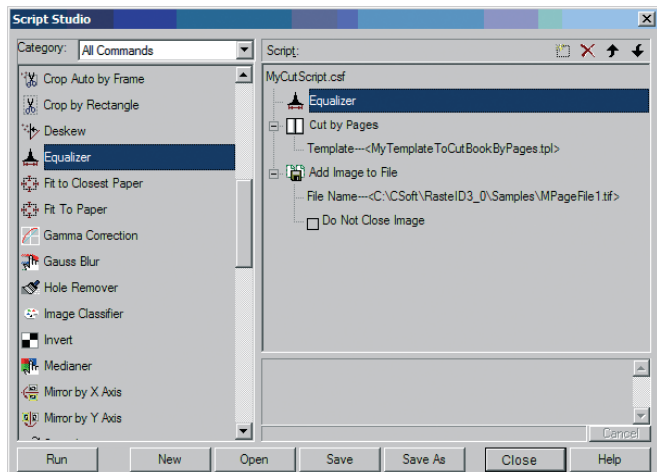
Double colour pages splitted and corrected



Estimation grid of bookfold calibration for double-page scan



Estimation grid of bookfold calibration for single-page scan



Preparing script for batch job

size. The placement is arbitrary and you only need to set a few parameters of recognition and WiseBook does the rest. Naturally you can preview the result prior to final scanning. There are several options to select from when you define page detection for WiseBook. This makes for a very convenient way to process different kind of source pages - simple text on white paper, text on uniform color, full color pages as photographs or posters and more.

Multipage output

WiseBook can process output of large drawings or posters on small printers. If you need to print a large drawing on a small printer you need to mosaic the original image with slightly overlapped "slices" according to the output paper size. This function is for example used when you need to create a small size book from large maps, something WiseBook can easily do.

WiseBook Specification

Dedicated Book-Scanning tools

Double and Single page cutting tools

Cut vertical/horizontal/one page/by grid/cut by paper size/cut mozaic

Page detection methods

Scanner background colour/Page background colour/Adaptive edge detection

Options

Correct flexion brightness; Calibrate page distortions; Resize page to paper; Rotate page at 0, 90, 180, 270 degrees

Scanner interface

Direct support of wide-format and Twain scanners

OCR Postprocessing

Optional FineReader OCR Engine or other

General Image-processing tools

Enhancing and editing

Colour filters: blur; unsharp mask; median. Monochrome filters: speckle remover; hole remover; thickening; raster images thinning; smoothing; inversion; contour. line breaks filling.

Correction and transformation

Deskewing; 4-point correction; calibration, changing size and resampling; cropping; rotating; mirroring.

Drawing on raster; merging color, monochrome, and grayscale images; monochrome and color floodfilling.

Additional features for processing of colour images

Adaptive and manual Binarization, color separation. Colour reduction, Colour Classifier, Gamma Correction

Selecting raster data

By picking (with automatic definition of object type); within window or polygon; by crossing rectangle, polygon or fence

Separation

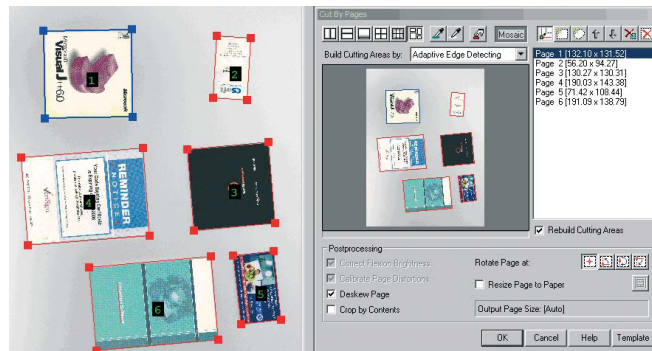
Separation by size, separate linear objects, separate text areas, separate hatches

Automation

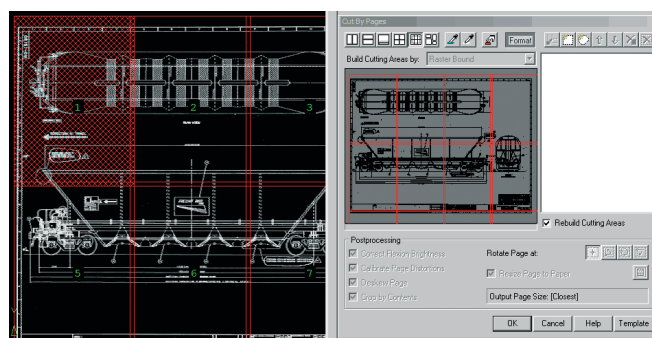
Batch and Script Studio; External OCR support



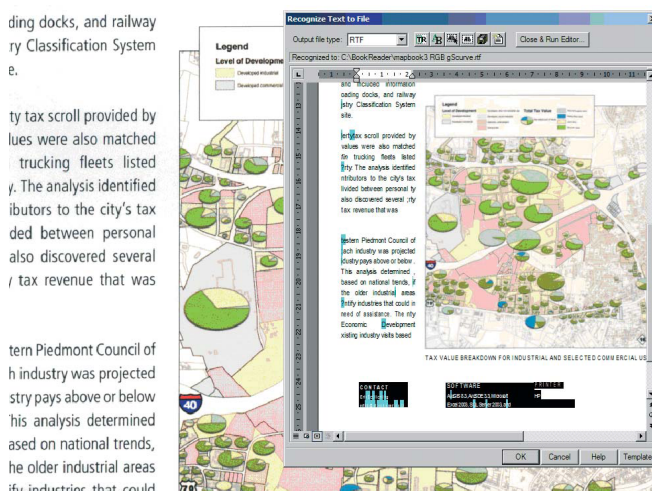
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Scan of several pages at once



Preparing for multipage output



Optional OCR converts scanned page to RTF



Your local partner is:

