

DigiBook

Mag

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Gifted child's birth

As implied between the lines in our December 2002 03rd issue, both firms ASSY and i2s are very pleased to announce the birth of their child:

the DIGITIZING LINE, that's its name. This beautiful 900-kg baby is the result of a Franco-Swiss marriage. The baby's heritage is composed of the legendary "Swiss Made" mechanics and automation, accompanied with the i2s' know-how in terms of image capture and enhancement accumulated over the past 25 years. Be in no doubt, we are proud of our technical prowess! The DigiBook SUPRASCAN range associated with this Automatic Turn-Page offers, over the world market, unequalled technical performances, which should open new horizons in the field of patrimonial dematerialization and data-bases in general. Do not hesitate to ask for the video presentation of our "New Born", and we will send it to you with pleasure.

In an upcoming issue we won't miss the opportunity of letting our first DIGITIZING LINE customers speak. One system has already been installed and four other ones are to be in the coming months.

In expectation, I personally remain at your entire disposal for more details.

Alain COSTE
DigiBook Business
Unit Manager




NEW

i2S - DIGIBOOK markets the DIGITIZING LINE

The DIGITIZING LINE is an automatic digitising system for books, designed and developed by the Swiss company 4DIGITALBOOKS-ASSY SA in Saint-Aubin. This machine incorporates very innovative turn-page mechanics, associated with the SUPRASCAN technology, one of the best digital scanners on the world market, provided by the DIGIBOOK Business Unit of i2S SA. A technical and more comprehensive description of the machine is presented in the following pages.

This new system for bound documents allows you to digitalise, at very low costs, with unequalled quality (including all the usual cares) very significant quantities of documents. The first so called « DL » was installed at one of the most prestigious international sites: the University of STANFORD in California. In use for one year soon in this American institution which owns an important data base, the DIGITIZING LINE has been proving its efficiency in both image



quality and respect of the works that have been digitised by it.

To cope with such a revolution in the field of book scanners, both companies 4DIGITALBOOKS-ASSY and i2S-DIGIBOOK have decided to ally themselves. Thus, the DIGITIZING LINE will benefit, in a privileged way, from the newest camera technologies, in terms of moving accuracy, lighting, colorimetric and image enhancement developed by the DIGIBOOK team. In order to complete this alliance, i2S SA has taken shares in the ASSY SA capital.

TESTIMONY IN THE LIEGE UNIVERSITY (BELGIUM): More reliable than paper!

Wistful of preserving the exceptional documentary heritage, the information and preservation Centre of Libraries (CICB) of Ulg has just acquired a brand new scanner model with unequalled performance. A first in Belgium.*

It has been a decade that scanner has become the most important complement of a worthy computer installation. As everyone knows, it allows a quick on-site, document reproduction which used to require time, travels and high costs. Obviously, it has found a meritorious place in the numerous departments of the University to such an end that it is a part of the everyday setting now.

(Cont'd on page 4)

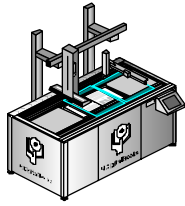


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(*) University of Liège

NEW

DIGITIZING LINE: a revolution in the world of digitalisation

Books represent a unique heritage that it is worth preserving and sharing. The digitisation is an operation that simultaneously provides for both objectives. With traditional digitising techniques, a book must generally be dismantled, the binding cut to separate pages from the volume and then presented to a sheet feeder scanner. Immediate consequence: an unavoidable degradation of the work. In other situations if the integrity of the book is preserved, the digitisation by image grabbing or text recapture when its content allows it, generates a manual page-handling which takes much time and usually costs a lot of money.

By gathering Robotics, Digital, and Computing technology together, the DIGITIZING LINE offers for the first time, a complete and integrated solution. It allows you to scan considerable amounts of works at a breath-taking speed, without damaging them and respectful of their diversity. These documents can be books, magazines, or bound newspapers, they all can be done at affordable costs and in an automated way.

The DIGITIZING LINE is a more secure, more powerful, quicker and cheaper scanning solution. It ensures:

- a careful handling of your volumes
- an automatic detection of the book parameters: binding thickness, horizontal and vertical positioning.
- an automated page-turning by robot
- A colour or monochrome image capture of each page of the book using a SUPRASCAN scanner which restores a faithful image of the original

Performances:

The DIGITIZING LINE is an automated digital system comprising a turn-page robot and a professional book scanner. It ensures very high productivity, up to 1500 pages per hour, and supplies an exceptional image quality without compromising the optical resolution. With resolutions from 200 to 800 dpi the DIGITIZING LINE, is able to digitise formats from 2xA5=A4 /A to 2xA2=A1 /D with very high speed, while guaranteeing that only one page is turned at a time. It handles works with a maximum weight of 20 kg, manages binding thickness of 150 mm and maximum page one of 1 mm.

General characteristics:

- Automatic detection and adaptation to the book parameters (< 1 minute)
- Flexible algorithm to find the best page separation method
- Exceptional productivity (estimation: 4 times faster than a human operator)
- 1 operator can work with 5 DIGITIZING LINE simultaneously
- Book parameters record (pre-setting) allowing a quick work for the same kind of books
- Higher image quality: reproducible movements and captures
- Only one page turning at a time (no human error or productivity variation)

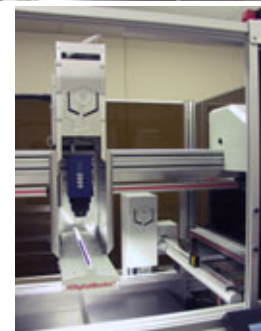
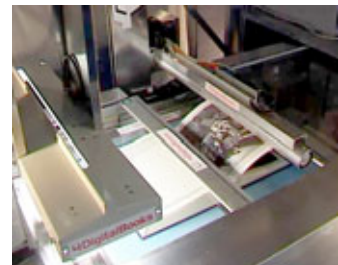
Technology

The DIGITIZING LINE is the world's unique scanning solution, that integrates innovative and reliable technologies, guaranteeing exceptional performances as per the productivity level than for the image quality. It respects both, the documents and the operator's comfort.

The DIGITIZING LINE, first is an automatic book cradle system, that ensures perfect horizontal and vertical book positions whatever the book thickness. Associated with an automatic book parameters detection, it contributes to an optimum digitisation of works.

The DIGITIZING LINE is also a revolutionary automatic turn-page, that allows very high capture rates while manipulating the document carefully.

The DIGITIZING LINE finally, is a very powerful scanner, that guarantees an exceptional and abiding quality of digitisation on the whole document surface, thanks to a moving camera and a non-aggressive, embedded lighting.

**Operators' interfaces**

The DIGITIZING LINE relies on a double working interface. The first one is a general interface which controls the turn-page and digitising system (cf. screen copies on the left). With simple and imaged selection menus, it handles the initialisation of the machine, the book feeding, volume weight and thickness measures, the book-cradle adjustment, the machine speed level and many other functions. This interface really is user friendly and well adapted to operators with no particular experience.

For digitising aspects, the general interface of control calls upon a second one which handles the digitising system specific settings: calibration, frame setting, focus and lighting level as far as the main functions are concerned. This interface general design is similar to Windows with a menu bar, a tool bar and a viewing and framing window of the book being digitised.

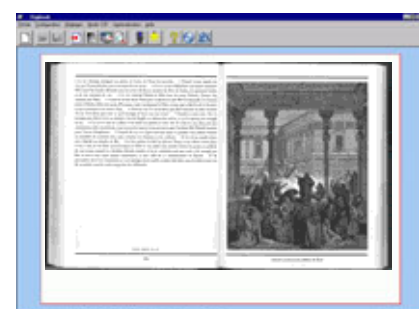
During the automatic functioning, this interface displays, in real time, images captured by the camera. Thus the operator benefits from a perpetual visual control of the digitised documents.



Run the automatic book's weight and thickness measurement



Adjustment of the book's height



Digitisation Interface

The DIGITIZING LINE, how does it work?

The book is set on a book cradle which weighs, measures and balances the left and right sides of the book for an optimum scanning, while preserving the binding from any damage. Then pages are split up, turned one by one, next digitised in grey scale or colour according to the wished resolution. The result images are displayed in real time on the screen and can be automatically enhanced by digital restoration techniques, e.g., to correct a binding curvature, improve the image quality, or even apply an OCR software. Images are saved under different possible formats, and stored on every kind of supports or directly on the network.

PRODUCTIVITY and SECURITY

The DIGITIZING LINE is declined in several versions. These ones directly depend on the integrated SUPRASCAN scanner version - colour or monochrome, 5000, 6000 or 10200 pixels camera - which is integrated in the machine. The hereunder table gives the productivity results achieved with both models, depending on the required page resolutions and formats. With such rates, the system must obviously guarantee the integrity of the book but also the operator's security. As you can note on the photo of the DIGITIZING LINE in page 1, a fixed and mobile safety window system (necessary when installing the book and setting the digitisation), protects the operator from the mechanical moving zones.

◇ **Productivity of DIGITIZING LINE (equipped with a SUPRASCAN scanner based on a Pentium IV - 2 GHz)**

Page Format (US format)	Resolution (dpi)	Grey scale productivity (pages/hour) with DB2000LC	Colour productivity (pages/hour) with DB6002RGB
A5 (5x8)	200	1500	800
	600	1000	300
A4 (A)	200	1400	700
	400	1000	320
A3 (B)	200	1200	520
	300	1000	300
A2 (C)	200	800	350

NEW

BOOK RESTORER™ version 4.0 now available!



The new BOOK RESTORER™ version 4.0 marks a significant step in the evolution of this product, become since its creation, the unavoidable software tool, for who is willing to restore, and even improve, in the most faithfully way, the quality of original digital documents.

BOOK RESTORER™ V4.0 has again improved its user-friendliness and accompanies the user with a quick handling and mastering of the tool, thanks to the addition of several wizards. These help in the major steps of the BOOK RESTORER™ use.

From the first seconds of the BOOK RESTORER™ use, the 'book creation wizard', allows you to create the structure of your book, to define page styles and blocks, sections, and to import images while associating restoration scripts. In this manner, the script programming wizard (integrated in the one of the book creation itself) offers you pre-defined restoration types depending on the sought result.

The BOOK RESTORER™ automaton has become more powerful itself, to be more autonomous. Still, it allows you to increase your productivity by giving you the possibility of enhancing, publishing but also to import your images. It is interesting in the case of works comprising miscellaneous pages with similar aspect. These 3 tasks can be processed simultaneously and give you the opportunity to avoid the images importing and script setting.

In respect of image enhancement, 3 brand new modules have been implemented:

- The **Finger masking** module will ease your documents manipulation during the digitisation step since it detects and automatically masks the user's fingers set on both side margins of the book. This will allow you to maintain your volumes in position during the image capture.

- The **Polarity detection** module, which more particularly concerns the microfilm or glass plates digitisation, automatically checks if an image is positive or negative and converts it, if negative.
- The **Crop** module has been greatly improved: using the wizard, it allows you to divide an image into several parts (horizontal or vertical), the manual crop (cropping margin setting the operator) and automatic cropping.

If BOOK RESTORER™ is able to import all kind of image whatever the format, it lacked this functionality to directly import an image from a scanner. This is done now with this version 4.0 of BOOK RESTORER™ that manages the TWAIN interface – communication standard allowing to capture yet captured images by certain scanners, digital cameras and image capture systems.

If you would like to try or have a demo of the new functions of BOOK RESTORER™, please get in contact with your distributor or download the demo version from our website.

Example of Finger Masking (detail)



before

after

More reliable than paper!

(Cont'd from page 1)

Unavoidable tool

In the General Library, we have reached a higher speed. Gone are the days, although not too far distant, when a glass plate was set on a document that a picture was needed to be reproduced and the binding was exposed to undue pressure and risked being destroyed. Let's not speak of a deterred image quality, due to a relatively problematic handling.

SUPRASCAN – that's the name of the jewel acquired by the CICB – is presented in the form of a big table above which glides a kind of mobile arm equipped at its top with a colour camera and in the centre of which are fixed two plates of the same dimensions. The right side plate receives the pages to digitise whereas the left side one makes the previous pages appear. The plate setting, which allows a level distance going to 20 cm, complements the flaws generated by the thickness, more or less important depending on the binding. Plus, thanks to the camera arm that moves and orients with wish the lighting beam, the image result is exemplary.

But this new look scanner offers many other advantages, served by software called *Book Restorer™*, which has been designed to give digitised documents optimal quality. The Crop algorithm, for instance, allows to deskew the image and generate the rectangle containing essential information, therefore margins with different dimensions are erased. The area detection allows the isolation of graphical elements in a page or text zones. The geometrical correction, besides, erases distortions due to crumbled or wavy pages, or even to the sidelong position of the book set on the plates. You can also adjust the lighting and contrast : by shedding light or darkening the image and modulate the difference between the lightest and the darkest colour which becomes as easy as child's play.



Going from one colour or grey scale image to bi-tonal is no longer a problem. Finally, and last but not least, it is possible to scan works from an A1 format, i.e. 650 mm of height for 850 mm of width.

Preserving patrimony

« This software really offers many possibilities that would be too long to list, acknowledged Nicole Haesenne, Director of the CICB. It is an ideal partner to consult, restore and publish works. With regard to digitising and preserving tools for collections, it also allows everyone, while caring about documents, to get images under computer

files, recorded on disks, CD-Rom or DVD, printed on ordinary paper or photo, in black and white or in colour. »

To those who would still doubt the usefulness of such a *high tech* 'stuff', it's worth reminding them of the dramatic fire which occurred some months ago in the warehouse of the prestigious publishing company *Les Belles Lettres*: 3 millions of works destroyed, burned ! « documents digitised and stocked in a secured place, it's a famous warranty of saving » notes Nicole Haesenne. When the most sophisticated technology, puts itself at the service of cultural heritage, we would do well not to complain.

Author: Henri Deleersnijder (University of Liège)

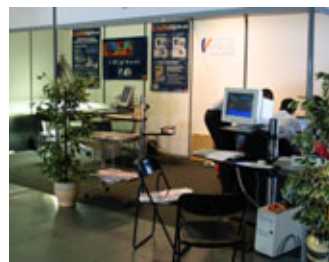
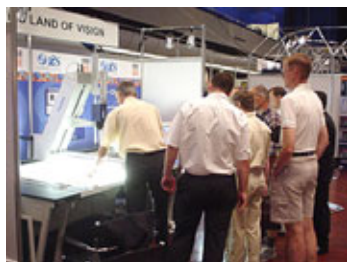
Flash-back on the IFLA 2003!

With a product offer particularly complete in the field of digitisation, digital enhancement and data-processing, our presence at IFLA 2003 in Berlin, Germany, with the collaboration of our partner SRZ, was very much remarked upon. We would really like to thank our client Mr LIEBETRUTH from the Universitätsbibliothek Göttingen for his participation during the whole week on our booth. This fair was a real success for our brand new SUPRASCAN A0 scanner, which we had on our stand for the first time. Visitors were able to appreciate its quality of digitisation over very large formats, at first hand. The video presentation of the DIGITIZING LINE made a huge impression on the visitors, related to the technology developed and the intrinsic productivity of the turn-page. We would like to thank all those who met us during this event and we will meet again next year in Buenos Aires (Argentina) for IFLA 2004.

Portugal: a promising market.

Thanks to the firm VINFRA – our Spanish distributor – we participated last September 15th, 16th and 17th at the latest Portuguese Town Archives Congress in Penafiel (not far from Porto - PORTUGAL). We presented the DigiBook SUPRASCAN 6002 RGB, on our local partner's stand, plus a video of the DIGITIZING LINE.

Some convention delegates discovered our technology for the first time and were able to appreciate the image quality obtained by our scanner and the performances of the BOOK RESTORER™ restoration software. Highly focused on the problems of document preservation, our visitors were impressed by the quality and professionalism of the offered solutions.



Upcoming events!

- **BIBLIOCOM - ROMA - ITALY**
29th - 31st October 2003
Visit us on our distributor's booth #65
Automazione Microfilm
- **VIP days & Seminar**
SOLLENTUNA - SUEDE
5th - 7th November 2003
At our distributor **DMS ab**



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