Data is only useful when accesible. A guide to scanning with the Fujitsu ix500

Posted online on 28th May 2019

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Over the past decade the internet has become a resource for reviews of just about every product, device and service and I, like many others, have sought these out to help in deciding on what to buy. It is now time to return the favour and add to this online resource as an actual user of a product.

In this case the Fujitsu Scansnap IX500 document scanner.

Ok, so some of you have switched off already. And it must be said that document scanning tends to fall into the same category as project and data management when it comes to entertainment value.

But if you are faced with a mountain of physical documents and the need to make these accessible, you may start to feel a little differently.

The problem I had to solve was this: an extensive and potentially powerful library of 25,000+ physical documents, scientific notebooks and papers, stored in my basement.

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Each paper and document was housed in a manila card folder, with a label and arranged alphabetically. This followed the data management methods used by in the Paleogeographic Atlas Project at The University of Chicago, where I did my PhD.

After my house was flooded a few years back, much of this library also ended up a little soggy. Sadly, some of my library was beyond saving, except as the stock for making papier mâché volcanoes, but it prompted me to act.

Papers and documents 'housed' in labelled manila folders in my library at home. It may look impressive and is (there are 10 shelving units worth of documents). But the information contained on these shelves is not as easy to access as digital files. There is also the issue of a huge physical library in a relatively small house… Time for a change.

Although having physical copies is still often the best way to work, access is even more important. Today we have the technology to turn all this paper into searchable pdfs, technology we did not have back in the 1980s and 1990s.

The Fujitsu Sapscan ix500

The Fujitsu Snapscan iX500 is a dedicated document scanner that is compatible with both Mac and PC. The unit I have is still available https://www.fujitsu.com/uk/products/computing/peripheral/scanners/scansnap/ix500/index.html, although has now been replaced by an updated model, the iX1500 https://www.fujitsu.com/uk/products/computing/peripheral/scanners/scansnap/ix1500/index.html

Scan Quality

The Snapscan iX500 can scan documents up to a resolution of 600 dpi (Color, grayscale) and 1200 dpi (B&W). I have mine set at 300 dpi (color, grayscale), 600 dpi (B&W), which is a compromise of the need to have high enough resolution figure scans, but also ensuring that file sizes are manageable.

Speed

With 25,000+ documents to scan, speed is key and the iX500 makes the task tractable. The published numbers of 25ppm for color scanning seem about right in practice. I have included three examples from my scanning workflow in the table below. For each

example I used the following settings:

- Image Quality: Best (color/Gray: 300 dpi B&W: 600 dpi)
- Color mode: Auto color detection
- Scanning side: Duplex Scan (example 1), Simplex Scan (examples 2 and 3)
- Image Rotation: Do not rotate
- Blank page removal: yes (on)
- Continue scanning after last page: yes (on)

As an explanation of the workflow stages:

"Preparation" refers to removing document covers and staples and ensuring that all pages are separated, especially where papers are water-damaged.

"Scanning" refers to the actual process of scanning through the scanner.

"Post-production" refers to the process of adding the results to my data management system, and where appropriate linking the file to my bibliography database. This also includes any rotation of individual pages using Adobe Acrobat.

OCR (text recognition)

The OCR software bundled with the ix500 is good. On occasions it does fail with an error message on the computer to ask if you want to save the file as images only. From experience if this happens then I recommend rescanning the document to see if it works the second time around. If that fails, turn the document 180 degrees and scan again. I am not sure why this would work, but in most cases, it solves the problem.

|	Example 1	Example 2	Example 3
Format	Letter Double-sided	Letter Single-sided	Letter Single-sided
#Pages (sides)	44	15	16
#Sheets	22	15	16
Preparation	54 s	32 s	1 m 17 s
Scanning	52 s	32 s	38 s
Post-production	2 m 47 s	1 m 37 s	1 m 47 s

Ease of Use

The unit is incredibly easy to use, but here are few things to remember, especially if you 'forget' to read the instructions:

1. Documents should be placed top down, with the first page facing the back of the scanner

2. 'Jamming'. The scanner is sensitive to changes in paper size or thickness during scanning. This is actually a great feature, because it means that the software will flag you if it senses that multiple pages have accidentally passed through the scanner and it will stop the process. You can then choose to continue if the error is not important (i.e. the thickness change is intentional) or pause the processing if there is a problem. If there is a problem, by having chosen the "Continue scanning after last page" option, you can then open the unit, remove the pages, loosen them, then close the unit and replace the remaining pages. Then push start to continue scanning. If you have a more serious problem, such as pages are wrinkled or have creases (the problem I have had due to water damage), you may have to send each page through separately.
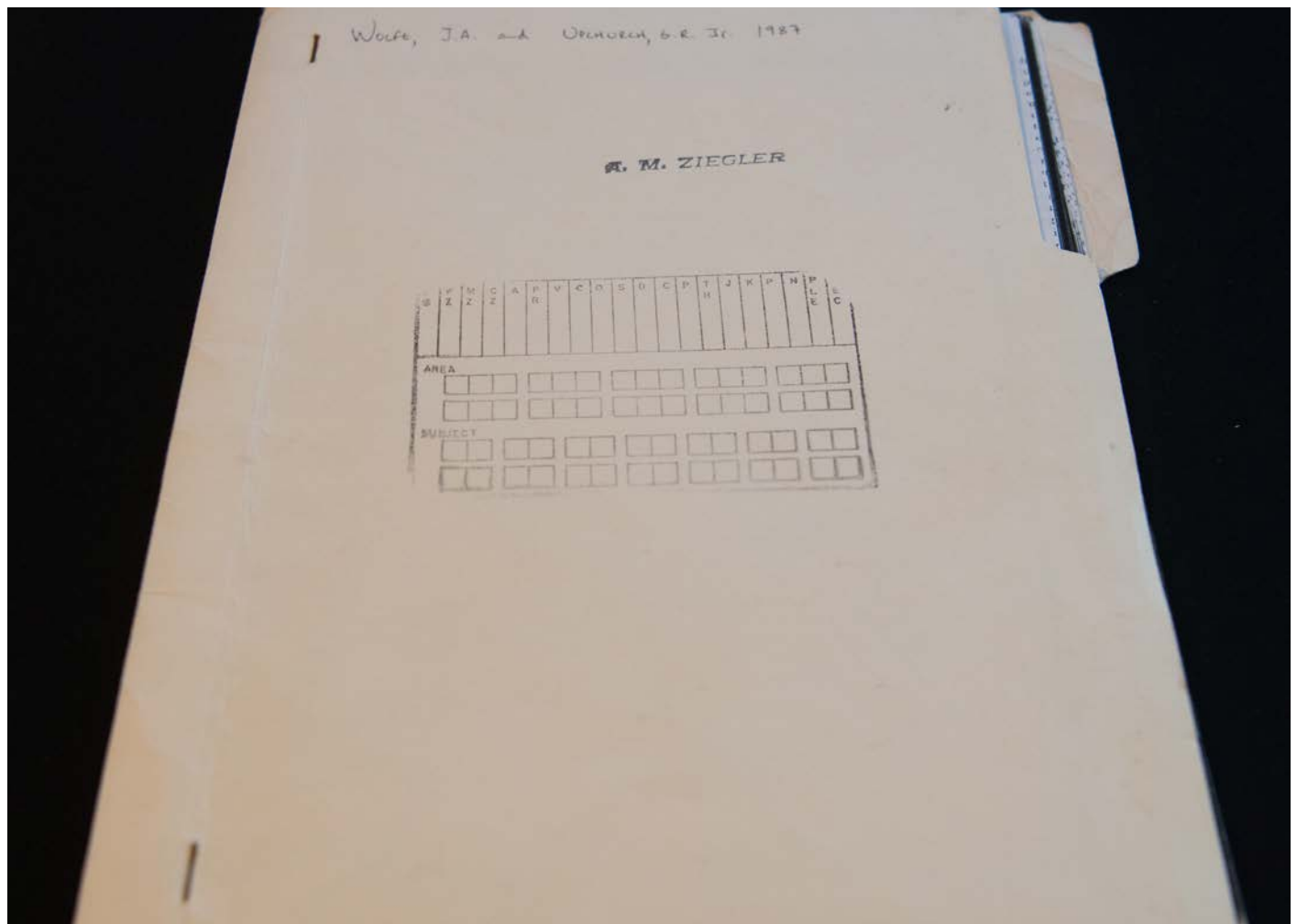
Each reference in Fred Ziegler's Paleogeographic Atlas Project was placed in a manila folder and immediately databased. The table could be used to assign key attributes to make searching easy. Today we have much more powerful database systems that allow us to expand the range of keywords and searchable values. But in the 1980s this was one of the most powerful geological databases available.
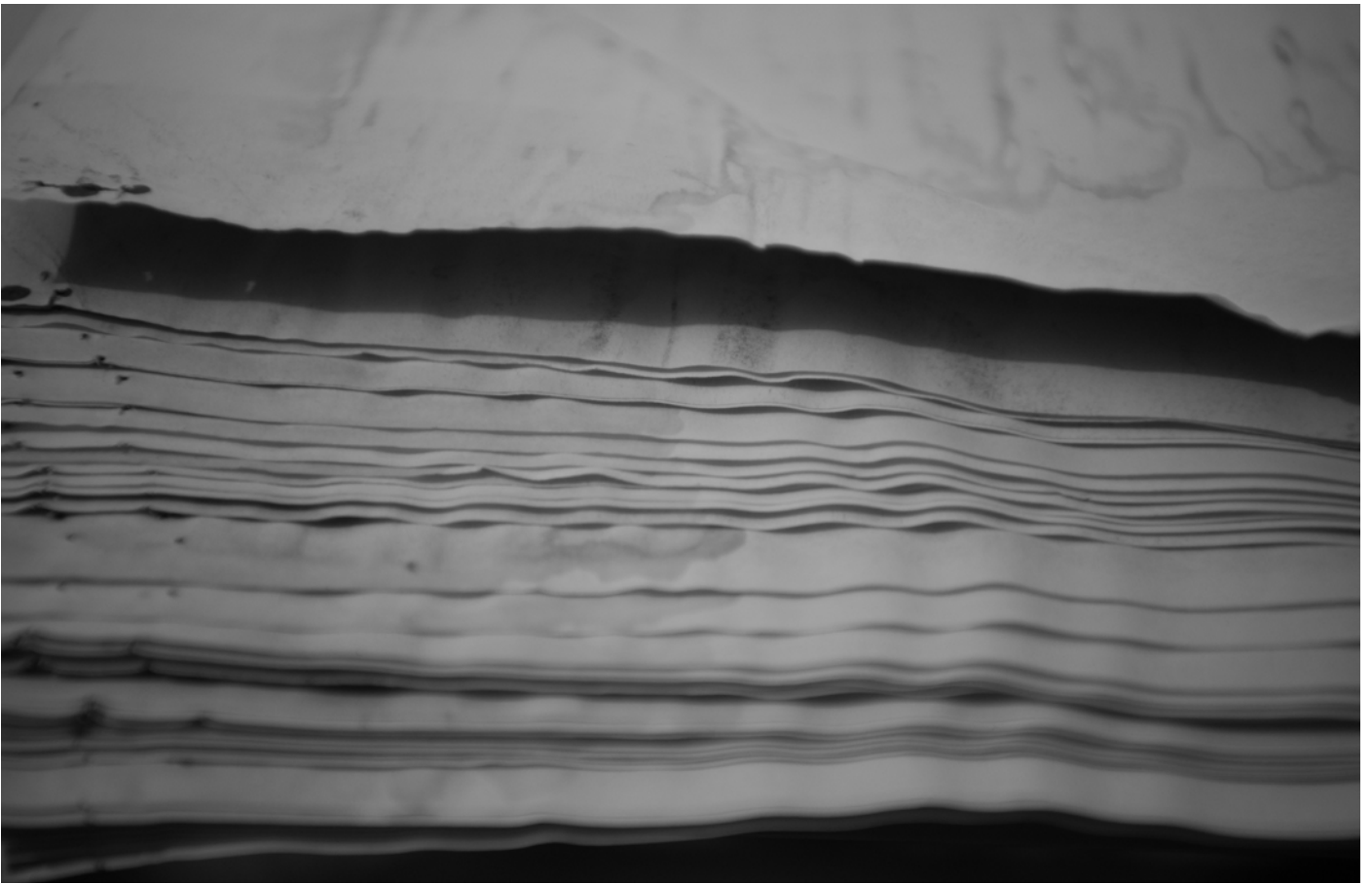
Wrinkling of paper sheets due to water damage. If you have a similar problem, make sure that you first separate all the sheets before loading them into the scanner. You may find that you have to load each sheet separately if the wrinkling is particularly bad. Also, be aware that this sort of damage can lead to sheets being fed at an angle through the scanner. Again, this why my setup has the <Continue scanning after last page> switched to "on" because you can then quickly reload the page. The other thing to aware of is that water-damaged paper may have spores and other fungal damage. This may loosen and get into the scanner mechanism. I use an air spray designed for photography to clean any loose material from the scanner.

The scanner with the paper feed open, but not with the output tray folded down, which I don't use. The DVDs provide a sense of scale.

3. Reception tray. I tend not to use this and have the unit feed paper out into a tray under my desk. This ensures that there is nothing to inhibit paper passing through the scanner.

Size of Unit

The iX500 is relatively small and light in weight and sits easily on any desk or table. The quoted dimensions are 292 mm x 159 mm x 168 mm (11.5 in. x 6.2 in. x 6.6 in.). But this is probably easier to visualize in the photo below. The scanner size will not be an issue.

Paper size limits

The scanner can scan up to A4, Letter and Legal sizes. The accompanying user guide states a maximum weight of 209 g/m2 and certainly I would not want to put anything thicker through the unit. For larger documents I use an A3 Brother MFC-J69300W All-in-one printer scanner, which has been great and is highly recommended especially when you can find it on offer.

Price

This is not the cheapest scanner available, but frankly, for the price, it is worth every penny. Expect to pay anything from around $400-500 (c. £400 in the UK).

Other Reviews

The ix500 receives great reviews on the internet. Here are a selection of the reviews I have used:

pcmag (UK): https://uk.pcmag.com/scanners/35500/fujitsu-scansnap-ix500

TechGearLab: https://www.techgearlab.com/reviews/small-and-home-office/scanner/fujitsu-ix500-scansnap

ExpertReviews: https://www.expertreviews.co.uk/accessories/scanners/52504/fujitsu-scansnap-ix500-review

Amazon (US) https://www.amazon.com/Fujitsu-ScanSnap-Duplex-Scanner-PA03656-B305/dp/B01G3JYVYM?ref_=bl_dp_s_web_14827771011

Amazon (UK): https://www.amazon.co.uk/gp/customer-reviews/R5HGMB1EPNRZB/ref=cm_cr_arp_d_viewpnt?ie=UTF8&ASIN=B01GJ9DJS0#R5HGMB1EPNRZB

This Amazon review was especially useful since it was by someone faced with the same problem as me

There are also numerous YouTube videos you can look at to see the scanner in operation.

PROS	CONS
Easy to use Great results Fast Easy to access and clear paper jams	Limited to Letter, Legal and A4 (a very minor quibble). Price

My score: 10/10

About the author

Paul is CEO of Knowing Earth Limited, as well as a Visiting Lecturer at the University of Leeds and Visiting Research Fellow at the University of Bristol. He graduated from St. Edmund Hall, Oxford University in 1987 and received his Ph.D. from The University of Chicago in 1996.

He worked for two years at BP's Research Centre in Sunbury-on-Thames before moving to Chicago, where Paul studied with Professor Fred Zeigler's oil industry-sponsored Paleogeographic Atlas Project. This was followed by a post-doctorate at the University of Reading researching the exploration significance of the paleoclimatic and drainage evolution of southern Africa using computer-based climate models with Professor Paul Valdes. He then moved to Robertson Research International Limited, now part of CGG, as a Staff Petroleum Geologist, where he developed global predictive models of source and reservoir facies. In 2004 Paul moved to Getech Group plc, to set-up the Petroleum Systems Evaluation Group with Dr. John Jacques. From 2006 to 2017 Paul served on the Getech board overseeing the strategic technical direction, which saw the business transition and grow from an academic research group to a multi-million-pound company with four offices, 120 staff and an international client base.

His active research interests include global tectonics, palaeogeography, palaeoclimatology, the history of geology and depositional modelling. Paul is the author of over 100 published scientific papers and articles.

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