Slide Digitization System

A SYTEM TO DIGITIZE 35MM SLIDES
AND SAVE IN A USER-DEFINED DATABASE
FILM IMAGES, PATIENT DATA, AND OTHER MEDICAL INFORMATION

Fundus image digitization from 35mm stereo slides

The Slide Digitization System provides the tools necessary to convert 35mm slides of single and stereo fundus images into a digital database of high- resolution images and related text information. This semi-automatic system captures fundus images using a copy stand and a slide illumination system, a high-resolution digital still camera to capture the film, a webcam to capture the whole slide including its frame, a Windows® computer, and two software products. An optional scanner and barcode scanner are also available to enter more specific data in the database.


Digitization System showing copy stand, slide holder, barcode reader, scanner and computer system.

The Slide-Snapper software product enables a user to adjust the high resolution camera, snap images, enter image specific data, and store the image and data together into a database. When capturing stereo pairs, the two images are saved in the database so that the pair can easily be displayed for stereo viewing using special glasses provided as an option with the system.

For each slide, two image captures are performed. First, a low-resolution image of the entire slide is captured by a webcam (i.e., film and frame). The second image capture includes only the film portion of the slide, and is saved at the camera's full resolution (above 15 Mpixels), without any distortion and compression.
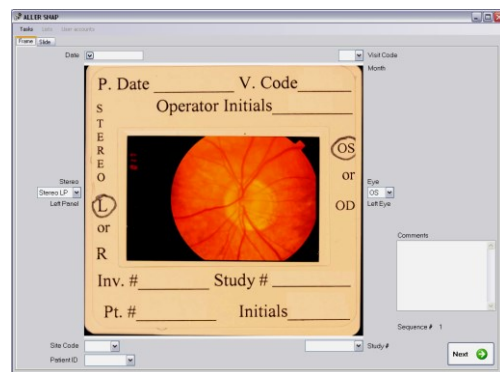
User interface showing a 35mm slide, with data fields on its frame.

After the first image is captured, the user enters the frame's data fields that are to be saved in the database. The data fields are currently configured as Date, Study #, Patient ID, Site Code, Visit Code, left or right eye, and for stereo images, left or right panel. After the user enters these data and visually verifies the quality of the captured image, the second image is captured and the two images and user-entered data are stored automatically in the database. As an option, the user can read a barcode that is displayed on the back of the slide, and scan a set of medical forms on which OCT images are printed. All these data are automatically saved in the database.

Slide-Display, another software component of the system, enables the user to retrieve and display single or stereo pair images from the database. This module also enables the user to query the database to retrieve user-entered information. Slide-Snapper and Slide-Display can be customized to fit to the users needs and requirements.
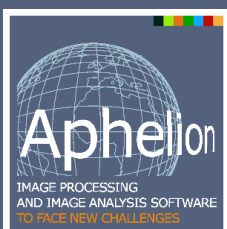
Main benefits of the Slide Digitization System:

- Six times faster than a slide scanner, with better color rendering, less noise, higher resolution and slide-frame acquisition (both front and bak)
- Full control of image acquisition parameters
- Slide acquisition of film-only, film & frame, or both
- Tools provided for user annotation of images

Aphelion
IMAGE PROCESSING
AND IMAGE ANALYSIS SOFTWARE
TO FACE NEW CHALLENGES

System Components[1]

Image Capture Workstation

- **Software** – SlideSnapper and SlideDisplay

- **Camera** – Canon EOS Digital 50D
15.1 Megapixel SLR

- **Lens** – Canon EF-S 60mm f/2.8 USM Macro
Autofocus

- **Slide Copying System** – Copy stand, light box, and slide holder

- **Data Scan System** – Webcam to capture data written on the front of the slide frame

- **Computer** – Standard PC with Windows® XP, Keyboard, Mouse

- **Display** – 22" LCD Color Monitor

Image Capture Option

- **Data Scan System** – Bar code scanner, flat-bed scanner with paper feeder to scan printed medical forms

Server Workstation Option

- **Computer** – Standard PC with Windows® XP, Keyboard, Mouse

- **Removable Media** – Sony Blu-ray™ Rewriteable DVD Drive, BWU-100A (installed in above computer)

- **Storage Device** – Infrant ReadyNAS NV+, 1.6TB of storage (4x400GB NAS Disk Array, Mirrored Configuration for Redundancy

- **Spare Disk** – Infrant 400GB ReadyNAS NV/NV+, Hot Swappable Spare Disk Unit

- **Power Conditioner & Back-up** – APC Back-UPS RS 1500VA Battery Back-up and power conditioner for NAS Array

- **Stereo glasses**

(1) *Delivered components to the customer will be conformed to the quotation provided by ADCIS S.A. or Amerinex Applied Imaging, Inc. and are subject to customer requirements, manufacturer changes, and software updates. Changes to this document will be at the sole discretion of ADCIS S.A., without notice, to adapt to new hardware equipment.*