



OpenEyes - Scanning Correspondence

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Target Audience

General Interest	✓
Healthcare managers	✓
Ophthalmologists	✓
Developers	✓

Amendment Record

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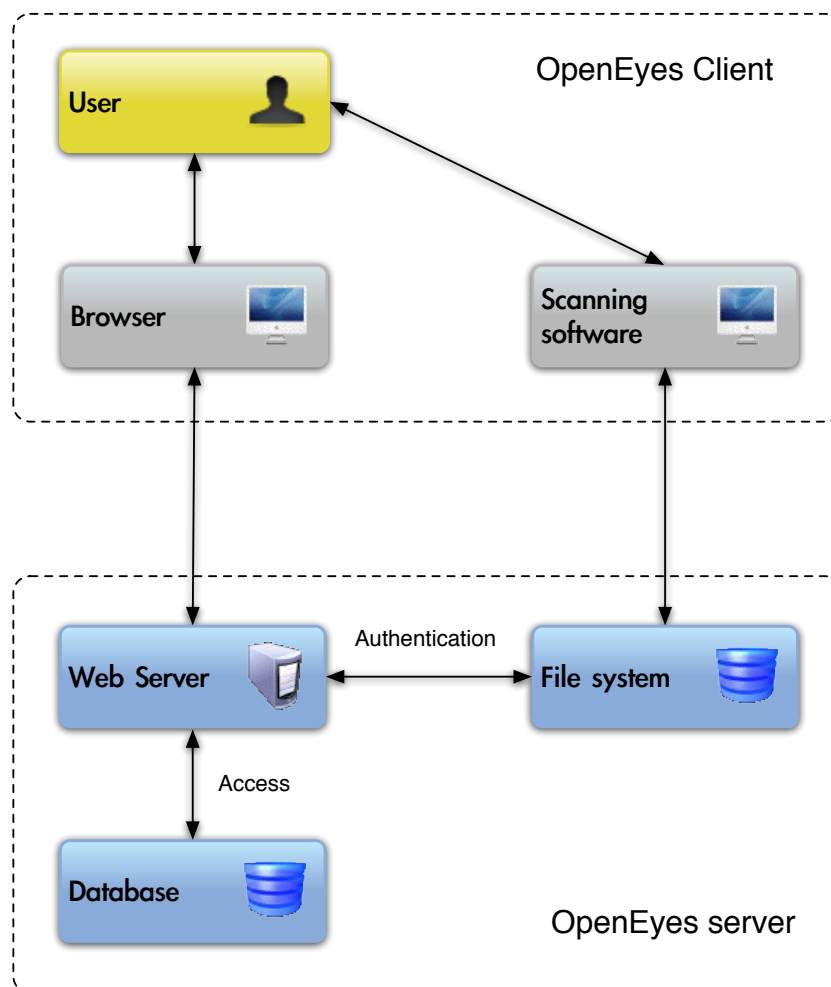
Introduction

There may come a time in the future when all clinical correspondence is created, transmitted, and read electronically, but for the moment it is likely that the majority will continue to come in to departments in paper form. Therefore there is a need to have a process for scanning and storage of scanned letters.

In many cases, patients bring letters with them, so the scanning function may need to be performed immediately, and by already busy front desk staff. Therefore the process must be as fast and as user friendly as possible.

Process

In order to associate the scanned image with a particular patient, the user will have to enter a hospital number and assign the scanned image (or images) to that patient. Browser software is unable to access the local file system for good security reasons, so the user will have to interact with two software components, but this interaction can be made as simple as possible (see figure).





User experience

The following steps are required to be performed by the user.

1. Scan documents

Insert a page into the scanner, and either press the scan button on the scanner itself, or click the scan button within the scanning software. The user can repeat this process until all the pages relevant to the patient have been scanned.

2. Assign documents

The user will call up the clinical pages on the relevant patient within OpenEyes and click the icon for incoming correspondence. The scanned documents will be presented in order of scanning, for confirmation that the correct patient has been assigned.

3. Assign recipient

If the recipient is specified (ie anything other than 'Dear Doctor'), and is a current user of the system, the user can optionally assign the recipient

4. Confirm and save

Once the user has confirmed that the imported images belong to the correct patient, the save button is clicked, and the images are committed to the database.

Client software requirements

A dedicated piece of client software is required to fulfil the following functions;

- Control the attached scanner to initiate a scan with parameters that are configurable as defaults.
- Define file names based on the logged-on user name and number of sheets scanned.
- Save each scan as a JPEG image to a directory on the web server (Image re-sizing and quality adjustment are done within OpenEyes).
- Pass focus to the web browser (optional).

OpenEyes requirements

Importing of scanned correspondence is done with an object of the 'letterin' class, which needs to fulfil the following functions;

- Detect and display scanned images with the username in the filename, and present them as multiple pages in the order of scanning.
- Allow the user to change the order, and remove unwanted pages.
- Allow the user to specify the recipient.
- When the save button is clicked, the scans should be imported into the letterin table, and the original files deleted.



Image Storage

The scanned images are stored as 'blobs' in the scans table, which is related to other tables as shown in figure 2. Size and quality parameters can be set in the main configuration file (config.php). Empirically the following settings give a good compromise between readability and storage.

```
DEFINE('JPEG_WIDTH', 840);  
DEFINE('JPEG_HEIGHT', 1187);  
DEFINE('JPEG_QUALITY', 20);
```

Figure 2. Entity diagram for the letterin table

