

The use of electronic portal imaging (EPI) holds promises that has yet to be realized in the clinical environment. Projected assets are: digital enhancement, near real-time imaging and networked availability of the images. Little attention has been given to the integration of the system in the clinical daily routine.

In this paper we implement a solution to this problem by mapping a client-server structure onto an existing departmental network. The network consists of a variety of personal computers, mini-computers, workstations and mainframes, each running their own operating systems and applications. The server, which needs to run on a multitasking machine, controls a list structure that contains image information. Every machine in the department runs the client software written in a platform independent script language (Tcl/Tk). The client software connects to the server and retrieves the list after which it communicates using socket-pairs. The server generates a child process to handle all communications with the client separately. Image information and selection are displayed locally and the images can be retrieved of the network via the server. The use servers makes image handling and processing transparent, as well as platform independent. Image display is optimized by the server for intermediate quality monitors prevalent on most PC and workstations. Sophisticated image processing code is performed on the server only.

Additionally the code runs not only over a local network but also over any Internet connection allowing the user to interact with the list structure and images from anywhere in the world.