

Medical Diagnostic Exchange Corp.

Insight™ Telemedicine Functions

Allows two or more users to view and interact simultaneously with image data and other patient information.



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Insight™ System

Architecture

To explain how telemedicine is directly supported by the Insight™ image and data management system, it is necessary to give a brief introduction to the architecture of the system. The Insight™ system is client/server-based: any application on the server generates screen images. When a new screen image is available, the image is compressed and transmitted to the user located at the client machine (see Figure 1). The unique streaming technology of Insight™ ensures that the user observes no difference between running Insight™ remotely on the server and running an application on the local client. To the user, the computer network transmitting the images may simply be considered as a long monitor cable. In addition, the streaming technology contains built-in encryption layers so that security protections are always active.

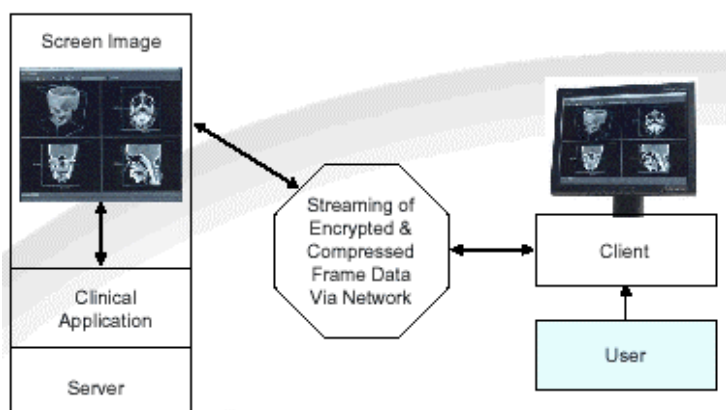


Figure 1. The client-server architecture of the Insight™ system ensures that patient data and images are never transferred from the server to any clients. Only the final screen images are streamed to the client station in response to user interactions.

Telemedicine and Insight™

As the Insight™ system architecture decouples the generation of screen images with the display of the images, the screen images may be transmitted to multiple users at the same time (see Figure 2). This allows two or more users to view and interact simultaneously with image data and other patient data.

A clinician using the Insight™ system may get assistance from an expert by inviting the expert to join an Insight™ session. After accepting the invitation, the two users are able to see the same screen images – even if they are located at two different geographical locations. Note that the expert is not just a “passive” Insight™ user. The expert may interact with the image and patient data in the same manner as the clinician who invited the expert. This functionality is essential for true telemedicine collaboration.

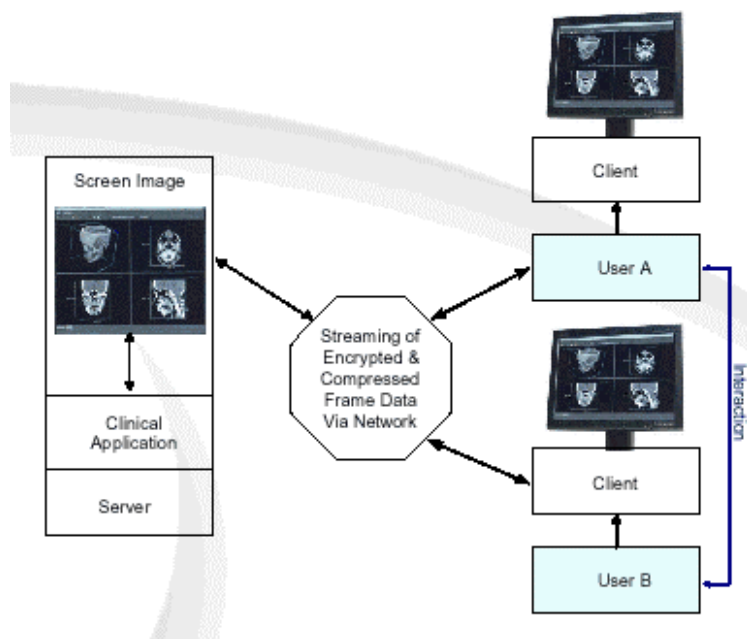


Figure 2. The Insight™ architecture also supports interaction between multiple users while viewing and analyzing the same patient data and images.

Conclusion

Contrary to traditional medical IT systems – where images are forwarded for viewing on local workstations – the architecture of the Insight™ system directly allows multiple users to collaborate over standard computer networks. Furthermore, the patent-pending image streaming technology of Insight™ allows access to image and patient data on low bandwidth computer networks. This streaming technology may be used at bandwidths as low as 0.5 Mbit/s, making telemedicine possible on standard ADSL Internet connections. Finally, the architecture of the Insight™ system ensures that all clinical applications developed within the Insight™ framework may be used for telemedicine without modifications. This is an important point – the telemedicine capabilities of Insight™ are available for all users of the system and for all functions and features of the system, and such telemedicine capabilities are provided transparently, ie, users do not need to carry out any special preparations in order to use telemedicine functions. The Insight™ image and data management system gives unique possibilities for new ways of working with patent image and other data. Insight™ users may transparently

collaborate across geographical locations, and expert knowledge is also available anywhere. Finally, e-learning can be directly implemented via telemedicine features.