

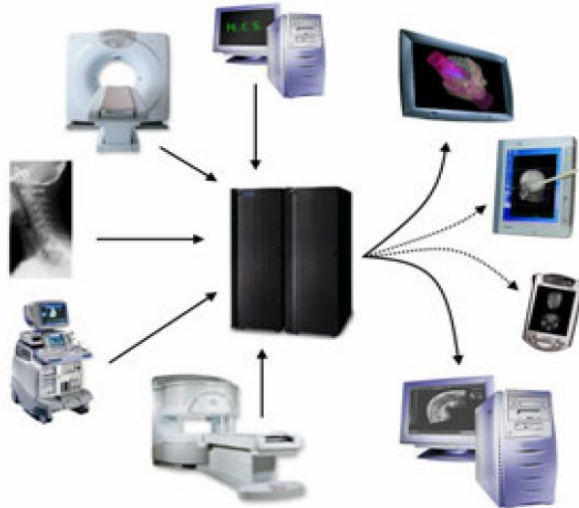
Medical Image and Record Data Management:

The Insight PACS (iPACS) and Insight RIS (iRIS) System

The Insight solution from MDX Corp. is a complete and integrated PACS and RIS system that offers significant advantages over similar products from other vendors.

The Insight system is based on a client-server architecture with a centralized, powerful graphics computer (Linux Intel-PC cluster from IBM) serving client devices (thin-clients, common Windows PCs, wireless tablets/PDAs) through common internet and/or wireless connections.

Adaptive streaming technology from MDX Corp. provides the capability to share the computing power of the server. Client devices come at near-zero cost in terms of hardware, maintenance, service, and support (thin-clients are diskless access devices, booting from the central server). Image and other data are centralized on the server, and not transmitted to the clients, which decreases network loads, and improves data maintenance and security.



An open API to the infrastructure promotes third-party development of clinical application modules (CAMs) while maintaining control of the overall system. These application modules provide all data handling tasks, from patient records to image data analysis and visualization functions for specific tasks or procedures, to RIS functions (booking, reporting, statistics, etc).

The adaptive streaming features of the Insight system allow access to the centralized applications and data (only a video frame-rate is sent), which means that medical data are not transmitted to the client devices. This allows a level of security to be built into the system that is currently not available or possible with existing client-server configurations.

Finally, the Insight user interface is exceptionally intuitive and simple, providing transparent access to data and analysis functions (less-is-more approach). Clinicians simply interact with their data . there is no perception of operating powerful hardware and software.

Clinical Aspects of the Insight System

The Insight system benefits patients, clinicians, and healthcare enterprises overall. Patients benefit because of improved quality and efficiency of care, and better education and understanding of diseases and treatments. Clinicians benefit via better tools for providing patient care, higher patient throughput, increased patient satisfaction, increased personal prestige, and greater collaboration with other clinicians both internally and externally. And the overall healthcare enterprise benefits because of improved delivery of service from all aspects, an increased reputation as an innovative and effective care provider, and by attracting and retaining quality clinical staff.

The Advantages of Insight

Price. The Insight system costs approx. 50% less than similar systems from other vendors.

Completeness. The Insight system contains 100% of the standard features and functions required for application as a PACS and RIS product.

CAMs. Insight Clinical Application Modules (CAMs) are applications tailored to meet the requirements of a specific group of users. Clinicians often perform the same set of actions again and again. CAMs are designed to meet the clinician's way of working by automating frequent user actions.

Ease-of-Use. The patented "One-Click-to-the-Patient" concept gives fast access to relevant patient information in the given work situation. Surveys have shown that just 10 minutes of training is adequate to start using Insight.

Distributed Access. The unique Insight streaming technology gives immediate access to patient data at the right time and place without long waiting times. The technology makes it possible to access large amounts of data independent of the client platform and network bandwidth.

Open Standards. The Insight hardware and software is based on open standards. This makes it simple to integrate Insight with other healthcare systems.

Scalability. Insight is completely scalable with respect to four parameters: amount of data, functionality, number of users, and number of sites.

Persistence. Clinicians in a hospital are often interrupted during their work. Insight makes it easy for them to resume their session - even at a different location.

Insight Scalability

Data. The capacity of the PACS server can easily be adapted to the customer's actual needs.

Functionality. It is easy to add new CAMs or modify existing CAMs to meet new user requirements.

Users. Depending on the size of patient data being accessed, each node in the central cluster may serve 6-15 simultaneous users. The cluster is easily extended to support additional users.

Locations. Insight connects data from multiple hospitals in region in a way that is transparent to the user (C-PACS). This opens up for new way of working where expert knowledge is available throughout the entire region.

Insight Bandwidth

The unique Insight streaming technology gives access to all patient data at bandwidths as low as 0.5Mbit. This is possible since the raw patient data are not transferred over the network, the patient data remains at the server side. Insight only transfers screen image updates. The technology does not

require a dedicated network, which makes access to the PACS/image analysis applications through a standard ADSL cable connection possible.

Security

A high level of security is inherent in the streaming technology, since all sensitive patient data remain on the server. Additional security is provided by an encryption module, which was designed to ensure a high level of security on wireless clients such as tablet PCs and PDAs.

Integration

Insight supports de facto standards and protocols such as DICOM, HL7, EDIFACT, and IHE. This makes it easy to integrate Insight with other healthcare systems.

Support and Maintenance

Support and maintenance of Insight is simple and inexpensive as all software is installed only at the central server. Clients only run a simple, single access, application.

Comparison of the Insight Solution with Standard PACS Web Applications

Insight has a number of advantages over standard PACS web solutions. Current web solutions may be categorized as:

Solutions that fetch all image data and perform image analysis and visualization at the client side. Advanced visualization is possible but this requires high-end, expensive, client hardware. Waiting times for image data can be quite significant, especially for 3D image data, since all image data have to be transferred over the network.

Solutions that transfer compressed JPEG images to the client. This type of system lowers data transfer time at the cost of quality. This makes the system inadequate for diagnosis and advanced visualization, as the clinician does not have access to full quality image data.

Insight combines the advantages of the two systems while not suffering from any of the disadvantages. Specifically, Insight provides:

Short waiting times, regardless of data size and network bandwidth.

Advanced visualization and data analysis on standard, cost-effective, hardware.

Access to full-quality image data at all times.

Inherent security - patient data are never transferred across the network or stored on the client.