Mammography Module

Multi-modality reading and reporting on same workstation, with advanced diagnostics.

RadNet Technology Solutions

Fully integrated with eRAD PACS, the Mammography Module provides a full toolset for breast imaging and eliminates the need for a dedicated mammography workstation—potentially saving hours of productivity and thousands in support costs.

The time-consuming shuffle between one workstation and another can be a thing of the past. With eRAD's FDA-cleared Mammography Module, you can view mammograms, ultrasounds, MRIs and 3D tomosynthesis all on the same workstation. Reading and reporting is from one system, and comparisons can be pre-staged or pre-cached to that workstation (even priors from third-party and legacy systems). Gain optimal productivity with macros assigned to any input device (mouse, keyboard, keypad, speech mike) and with eRAD's image auto-positioning features. Images can be oriented for mammography and loaded in the user's preferred layout(s), and eRAD can auto-fit a full resolution image by anatomy (skin-line detection) or image area. Clinicians don't waste clicks (in other words, time) adjusting every image.

Multi-modality reads on the same workstation

Multiple modalities—CT, ultrasound, MRI, mammography, breast tomosynthesis (3-D mammography)—can be viewed side-by-side on the same workstation, eliminating the high cost and inefficiency of a dedicated machine.

Tools to reduce clicks and support high-volume reading

Layouts are fast and flexible; pre-set mammography layouts are supplied, and users can quick-toggle between linked, custom layouts for alternate views. Assign macros to your mouse, keyboard or speech mike for faster input. Auto-fit a full resolution image by anatomy (skin-line detection) or image area.

AIE Image Enhancement Module

Add the optional AIE Image Enhancement Module to assist in visualizing and evaluating subtleties in digital mammograms. Accuracy is improved by sophisticated processing algorithms that enhance the clarity of abnormalities in dense breast tissue.

Advanced diagnostic tools

eRAD supports computer-assisted detection (CAD) and provides robust diagnostic tools such as mirrored image linking, anatomical grayscale inversion and BI-RADS® management.

Diagnostic tools include:

CAD support
Computer-aided detection in screening is supported, along with the ability to manage archived CAD objects differently from image objects.

Mirrored image linking
Action (such as pan, zoom, etc.) on one image is simultaneously performed on all displayed images, such that the tool works in concert with no duplicate adjustment necessary.

Worklist sorting by BI-RADS® value
BI-RADS values can be assigned in a report and displayed on the worklist. The worklist can be sorted by BI-RADS value, so that radiologists can elect to open priors of a certain value.

Anatomical grayscale inversion
Grayscale of just the breast image can be inverted, leaving the rest of the data black to make visualization easier.

Multiple views
Custom layouts can be set to initialize together, so that users can quick-toggle between them for alternate views of a study.

Viewer tools
eRAD's image manipulation tools can be leveraged for mammography, including Magnifying Glass, Quadrant View, Measurement, Annotations (Pointer, Line, ROI Ellipse, ROI Freehand, Text), Mag to 1:1 Pixel View and Cine for Tomosynthesis.

eRAD also provides optional advanced diagnostic tools for mammography through the AIE Image Enhancement toolkit, which allows users to display and manipulate higher-clarity images of dense tissue.

Under the Hood

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Tomosynthesis

Breast tomosynthesis (3D Mammography) helps clinicians find early curable breast cancers via multiple slices of each breast from multiple projection views. The number of slices significantly increases study size, not including the capacity necessary for relevant prior studies.

eRAD's Mammography Module supports smooth scrolling of tomosynthesis images, including Tomo Cine, and synchronization with contralateral and prior views. Users can annotate, set custom layouts and pre-stage studies (such as priors for that day's appointments) to a certain workstation. eRAD technology is optimized to handle the storage capacity, archive costs and distribution infrastructure necessary to support tomosynthesis, enabling imaging groups to provide this innovative modality to patients.

Integration with third-party reporting systems and eRAD technology.

The Mammography Module can invoke existing third-party reporting systems and synchronize the report to the open study. Seamless integration with eRAD technology—including the pre-staging and pre-caching of priors, support for distributed environments, mammography tracking, cloud hosting and speech recognition—extends the productivity gains for breast imaging.

AIE Image Enhancement

AIE's proprietary image enhancement software leverages signal processing technology originally developed from Navy research to locate undersea mines. In an expanded application, this technology enables physicians to extract more information from medical images. In a clinical study, researchers from Massachusetts General Hospital, Brigham and Women's Hospital, Newton-Wellesley Hospital and Faulkner Hospital concluded that the AIE enhancement software provided a significant advantage for improving clarity of abnormalities in dense breast tissue and increased radiologists' confidence in determining their case management conclusions.

AIE's processing algorithms enhance morphological features in digital mammography images to create visually sharp and detailed images. Clinical trials have demonstrated this technology improves the conspicuity and detail of abnormalities and improved the clarity of detail in dense breasts. The plug-in module permits users to apply this processing to mammography images, then display and manipulate the results like any other image in the study. This module includes tools to automatically and manually enhance the mammography images, plus a Region Of Interest tool to display the resulting data.

eRAD has integrated the AIE image enhancement toolkit for mammography as an advanced image processing option in the Mammography Module.

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