Universal Viewer

Breast Imaging

Product Data Sheet

Supports screening, diagnostic, and multimodality workflows

Introduction

Centricity™ PACS with Universal Viewer1 puts clinical insight within reach to deliver patient results efficiently. Powered by GE Healthcare’s Image Diagnostic (IDI) Mammography Workstation, Universal Viewer’s breast imaging workflow application provides a broad set of imaging tools – supporting screening and diagnostic workflows and the display of multimodality images on the same solution – to help radiologists read breast imaging to assist them in conducting primary diagnosis. This distinctive application allows mammographers and radiologists to rapidly access patient history and relevant priors.

Universal Viewer’s mammography workflow application supports the newest IHE profiles for mammography as well as support for reading tomosynthesis and Contrast Enhanced Spectral Mammography (CESM) images, helping to reduce the need to read these images on separate, stand-alone workstations.

Universal Viewer’s mammography and breast imaging workflow application features softcopy reading with customizable protocols and CAD display. It is suited for reading direct Digital Mammography (MG) and Computed Radiography (CR) images from major manufacturers, as well as for viewing digitized screen film images. Universal Viewer’s breast imaging workflow application also displays other breast imaging modalities, such as Ultrasound and MRI for a robust diagnostic review.

1 Universal Viewer is available with Centricity PACS and Centricity systems.
Key Benefits

- Help to improve productivity with the ability to perform screening and diagnostic workflows on the same system
- Help optimize radiologist time by reading images using the PACS worklist
- Put multi-modality images at your fingertips - Display MG, US, MR, CESM and Tomo - all as part of the PACS hanging protocols
- Help reduce the number of IT systems needed by reading digital breast tomosynthesis on the same solution as standard MG images
- Help improve throughput with user configurable keypads

Key Features

Image Viewing Features

- Multi-vendor Digital Breast Tomography: Support DICOM Breast Tomosynthesis images and Siemens CT objects on a single solution
- Auto-scale: Fits the largest breast into display viewport and scales all other images correspondingly, regardless of vendor
- Auto-align: Paired symmetric image alignment of mis-positioned breasts during acquisition regardless of vendor
- Auto-update: Newly arriving data (e.g. additional views, CAD) is displayed rapidly
- Image Folder: A thumbnail gallery gives an overview of all images available for a patient
  - Automatically sorted in chronological order and laterality (along the horizontal axis)
  - Automatically sorted by image type - i.e. CC, ML, MLO, etc. and magnify, spot, etc. (along the vertical axis)
  - Highlights currently displayed images
  - Applies checkmarks to images reviewed in full screen mode
- Linked Pairs: All images can be zoomed simultaneously and panned with auto-alignment
- Zoom options:
  - Overview (the entire detector area fits to viewport)
  - 1 to 1 (1 image pixel = 1 pixel on screen)
  - Original size (1 physical cm = 1 cm on screen)
- Auto-scale
- Free continuous zoom
- Quadrant zoom (optimized number of steps depending on the breast size)
- Zoom navigator
- Magnifying glass
- Contrast (WW) and brightness (WL):
  - Vendor-specific WW/WL settings can be applied automatically upon loading for optimized visualization
  - Interactive adjustments using the mouse applied either per image, or per study, or on all images
- Manipulate orientation: Invert, rotate, and flip)
- Annotations using shapes and text stored as DICOM Presentation State
- Measure distance from nipple, total area and angle
- Capture snapshots of your active viewport and send or print them via DICOM
- Customizable display of information from the image’s DICOM header
- Hide toolbar and tool windows to enlarge image on screen and reduce background light
- Premium View: Image processing algorithm that enhances the global contrast of a mammo image. It can be applied only to GE acquired images and requires RAW data. Multiple strengths available to satisfy user preference
### Image Viewing Features (continued)

#### Hanging Protocols

Hanging protocols are set up in the Universal Viewer and provide breast imaging users with:

- Customizable sequence of layouts
- Automatic recognition of the presence of MG images, so that they open on the correct monitor
- The ability to include tomosynthesis and Contrast Enhanced Spectral Mammography (CESM) images in the hanging protocol

#### SenoBright® CESM Review

- Dedicated hanging protocol: Step-by-step, side-by-side robust display of SenoBright dataset
- Cross-Fading: Automatic gradual transition between SenoBright views helping radiologists correlate the contrast
- Toggle button allows the user to switch between SenoBright views in a given viewport

#### CAD Display

- Displays CAD markers for micro-calcifications and masses
- Supports DICOM CAD Structured Report (SR) objects
- CAD Inspector allows navigation through all CAD markers and displays corresponding area magnified in an overlay window.

#### Keypad Support Options

- X-Keys® X24 keypad support allows keypad navigation to next patient in PACS
- Configurable keypad to user preferences

#### Worklist Capabilities

- Drive multi-modality workflow from the PACS study list, including tomosynthesis
- Performance statistics (completed tasks, reading status).

#### Quality Assurance

- Provides robust documentation of every reading task
- Status overview of open and finished tasks (per patient and per user)

#### Access Control

- Users log in to PACS system and access breast imaging tools seamlessly
- Each user has access to his worklist at any mammo workstation

#### Interfaces

- DICOM Storage SCP and SCU
- DICOM Query and Retrieve SCU
- DICOM Print SCU
- DICOM Modality Worklist SCU
- Supports DICOM 6000 overlays
- Send reports via MLLP protocol as HL7 messages
- Image compression and decompression using JPEG 2000
- Supports decompression of JPEG Lossless
- Non-Hierarchical, First-Order Prediction (Process 14 [Selection Value 1]) compressed images
- Ability to drag and drop images to other Microsoft® Windows® Office® applications
The Breast Imaging MammoWorkstation powered by IDI meets the following requirements:

### Client Hardware and Operating Environment

<table>
<thead>
<tr>
<th>Minimum Client Specifications - Breast Imaging installed</th>
<th>Without Tomography</th>
<th>With Tomography</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating System</td>
<td>Microsoft® Windows® 7 – 32 or 64-bit</td>
<td>Microsoft® Windows® 7 – 32 or 64-bit</td>
</tr>
<tr>
<td>Compute power</td>
<td>8 CPU/vCPU</td>
<td>8 CPU/vCPU</td>
</tr>
<tr>
<td>RAM</td>
<td>8GB</td>
<td>32GB</td>
</tr>
<tr>
<td>Hard Drive</td>
<td>RAID (Windows Software Raid 0 – stripe set) 2x 500GB</td>
<td>RAID (Windows Software Raid 0 – stripe set) 2x 500GB</td>
</tr>
<tr>
<td>Monitors</td>
<td>5 MP displays</td>
<td>5 MP displays</td>
</tr>
</tbody>
</table>

### Standards and Regulations

The Breast Imaging MammoWorkstation powered by IDI meets the following requirements:

- CE marked according to Medical Device Directive (MDD) 93/42/EEC
- FDA 510(k) 21 CFR 892.2050
- Conforms to DIN EN 12052 (DICOM 3.0)

### IHE Profiles - Actors Implemented

- **Mammography Image**
  - Image Display
  - Print Composer
- **Scheduled Workflow (SWF)**
  - Image Display
  - Evidence Creator
- **Consistent Presentation of Images (CPI)**
  - Image Display
  - Evidence Creator
  - Print Composer
- **Access to Radiology Information (ARI)**
  - Image Display
  - Report Reader
- **Evidence Documents**
  - Image Display
  - Evidence Creator
- **Simple Image and Numeric Report**
  - Report Reader
- **Portable Data for Imaging**
  - Portable Media Creator (with DVD option)
  - Image Display
  - Print Composer
  - Report Reader