



Proven Outcomes in Digital Mammography
The power to see the whole picture

SIEMENS
medical

Digital Mammography



We see a way to reduce dose up to 50% while maintaining image quality



We see a way to provide the highest digital resolution in the industry with up to 20 lp/mm



We see a way to quickly access all case related information at one workstation, including request, report and display images from all modalities



We see a way to improve your diagnostic workflow – loading 8 mammograms in less than one second



mammography



Proven Outcomes in Digital Mammography

The power to see the whole picture

According to the World Health Organization, more than 1.1 million people worldwide will be diagnosed with breast cancer this year. Clinical studies have proven that with early detection, the mortality rate is reduced significantly. This is why Siemens Medical Solutions is dedicated to providing an innovative, synergistic approach to meet the highest requirements in mammography.

Siemens uses its expertise in high quality imaging and IT to create a digital mammography solution to optimize your clinical workflow. The importance of workflow is especially evident today because an aging population is causing an increased demand for mammography. Breast imaging centers are experiencing a growing number of mammography appointments and workflow efficiency has become more and more critical in accommodating this additional volume.

Siemens' digital mammography solution is designed to handle your workflow – from patient registration and image acquisition to reading and reporting through final data storage – and the benefits are undeniable.

Optimized



Workflow



Digital Mamm



Patient registration

Once the patient is registered at the Patient Registration Desk, the patient data is sent via the HIS/RIS to the Acquisition Workstation (AWS). The technologist retrieves all relevant exam and patient demographic data from RIS via DICOM Worklist, or enters it manually, at the AWS. The *syngo*[®]-speaking AWS supports virtually all DICOM 3.0 functions, seamlessly integrating your data management process into the HIS/RIS world. All patient information, such as previous exams and reports from other modalities, is also available on the AWS.

The power to see the whole picture: consistent access to all patient and exam information.



Image acquisition

With the pre-defined procedures set at the AWS, the patient is positioned and the exposure is taken at the MAMMOMAT[®] *Novation*^{DR} digital mammography system. The system is designed with patient comfort in mind. MAMMOMAT *Novation*^{DR}, with the unique pivoting bucky and integration of the Opdima[®] digital spot imaging and digital biopsy system, can host the entire digital mammography work-up.

The power to see the whole picture: all-in-one unit for 100% system utilization.

ography



Image processing and image quality check

After the exposure, the image is transferred to the Acquisition Workstation (AWS). OpView™, Siemens' new advanced image processing software, provides excellent visibility of the breast border and structures in dense breasts. In addition, OpView has an extended application range and allows for more individual configurations. The image is displayed at the AWS where the technologist can check each image before moving on to the next exposure. This can reduce the examination time per patient as well as recall rates. Images from the AWS are sent to the storage management system and/or the *syngo* MammoReport breast care workplace.

The power to see the whole picture: greater efficiency at every step of the process.

Reading and reporting

Physicians review and evaluate acquired images and then prepare diagnostic reports on the *syngo* MammoReport breast care workplace. The *syngo* MammoReport permits all steps of the reading and reporting process to be individually tailored to meet your needs. Images and previous examinations from all modalities, including MR and Ultrasound, can be viewed on the *syngo* MammoReport for optimized breast diagnostics. In addition, mammograms from third-party mammography vendors can be displayed.

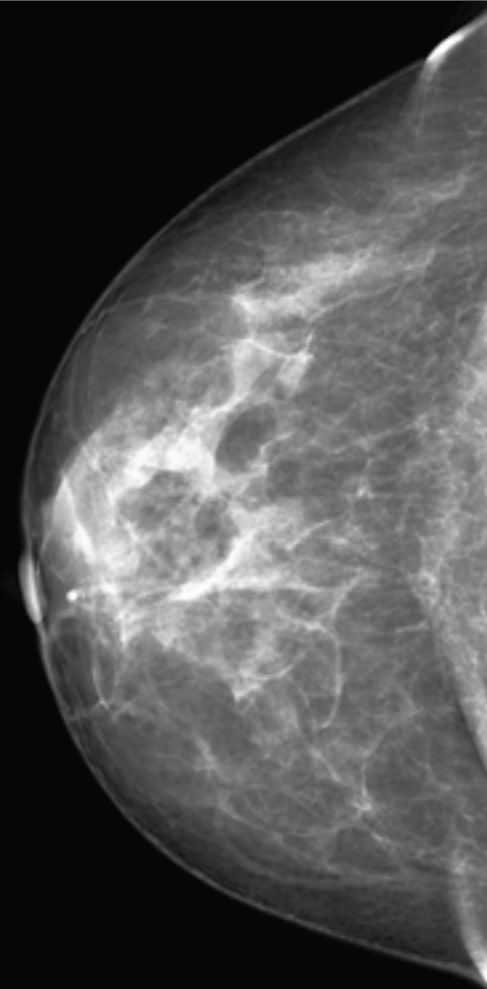
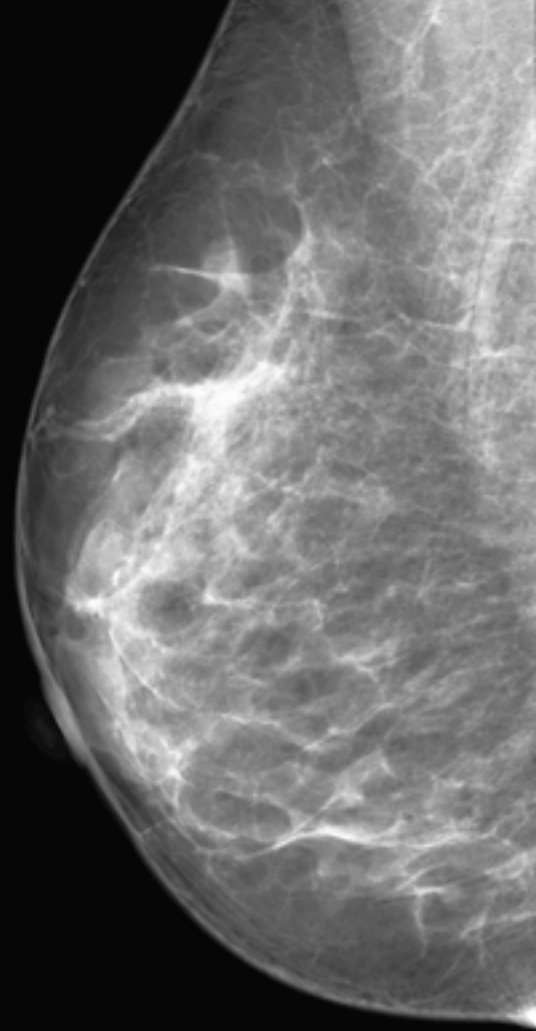
The power to see the whole picture: all relevant patient data is available at a single workplace.

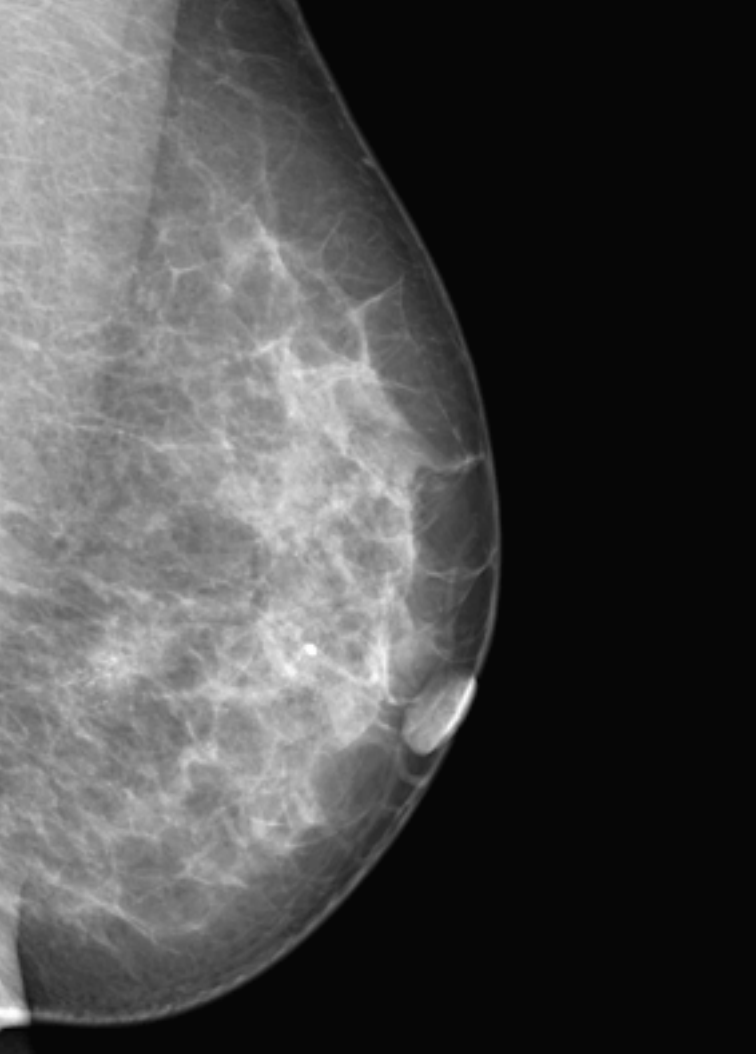


Storage management

Throughout the examination, information can be exchanged with the storage system and/or documented on film or paper. Storage management allows for long-term storage of the complete medical case. In addition, images are immediately available at every workplace during the entire examination. Siemens' mammography system can be integrated with virtually any storage management system – independent of the manufacturer. Siemens offers a wide range of storage management solutions to meet an institution's needs for low, medium or high patient volume. The SIENET Archiving product range provides the appropriate solution for high to low patient volumes.

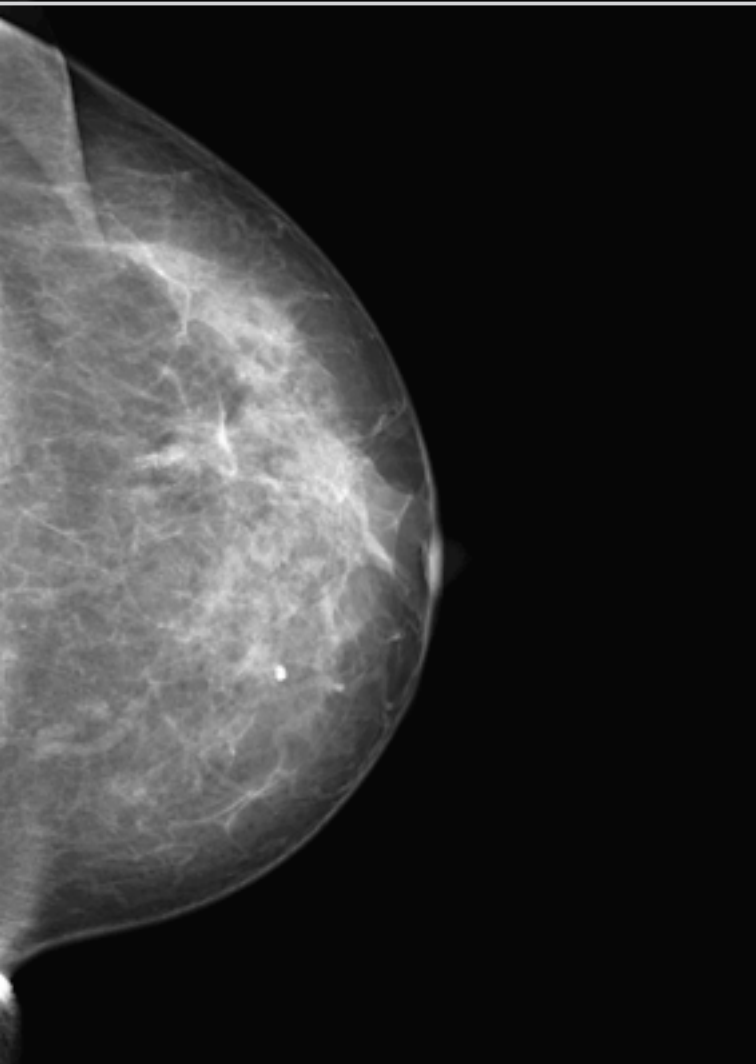
The power to see the whole picture: improved exchange of information throughout the hospital.





syngo
It's all about you

syngo, our unique solution for the diagnostic and therapeutic cycles, knows how you work. What you need. What's most important. Fast, easy, and intuitive, *syngo* brings together all of the solutions critical to you – and your patients. Uniquely role-based for your workflow, *syngo* completely integrates your day, your department and beyond. Leading to a whole new level of clinical excellence. And partnership you can grow with. It's the beginning of a virtualized, "always on, anywhere" world of healthcare. The time to *syngo* is now.



MAMMOMAT *Novation*^{DR}

Digital mammography at its very best

MAMMOMAT *Novation*^{DR} is the first system to merge all the advantages of full-field digital mammography with Siemens' longstanding networking expertise.

Excellent image quality

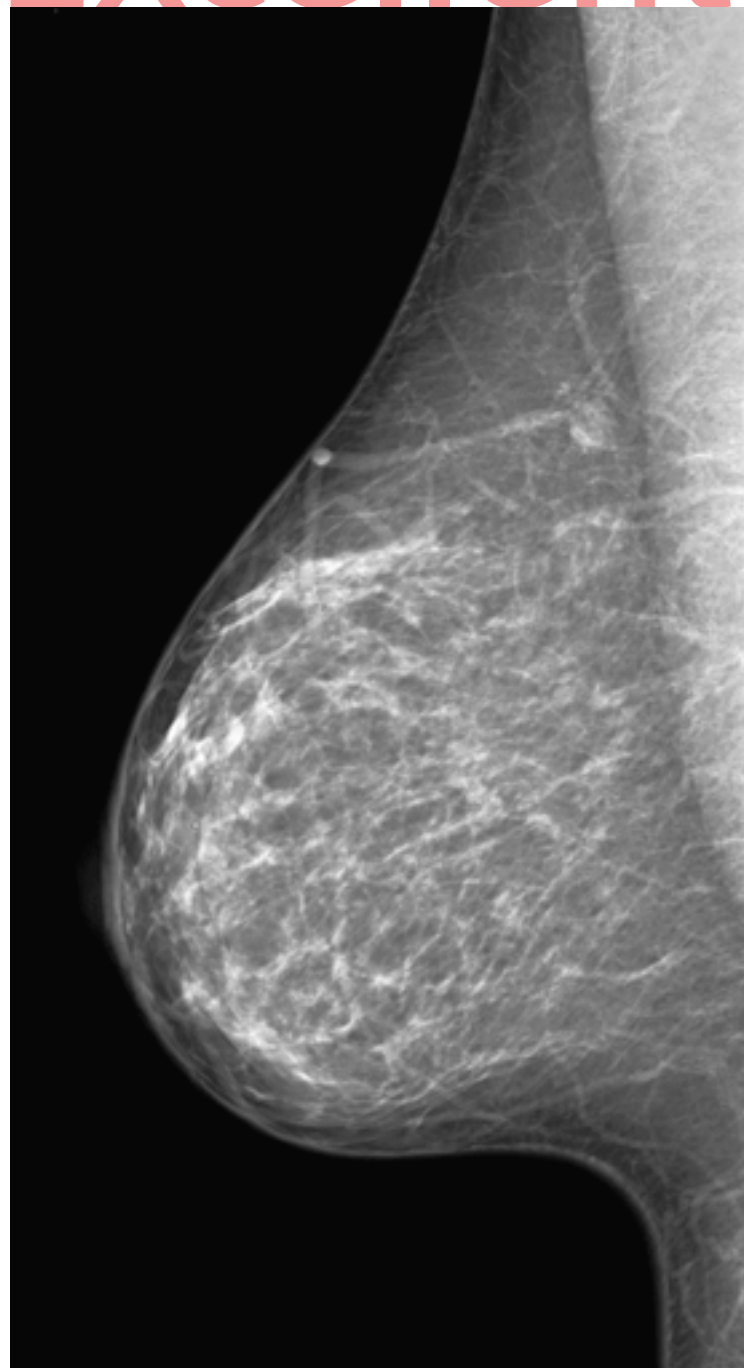
MAMMOMAT *Novation*^{DR} features Siemens' exclusive dual anode technology. This tube offers three anode/filter combinations to perfectly match breast density and thickness – Mo/Mo, Mo/Rh, and W/Rh. With Tungsten technology and high mA output, even dense breasts are examined with shorter exposure times and significantly reduced dose. MAMMOMAT *Novation*^{DR} utilizes the latest full-field detector technology based on amorphous selenium (a-Se). This flat panel detector uses an amorphous semiconductor to absorb the X-rays and directly generate the electrical signal without any intermediate steps. Together with Tungsten tube technology, this direct-to-digital technology yields the highest possible image quality – at the lowest possible dose.

The advantages of direct-to-digital technology (a-Se) compared to indirect technologies:

- Significantly better X-ray absorption showing superior DQE* for better detection of small and low contrast objects
- Smaller pixel size for increased spatial resolution (> 7 lp/mm)

* DQE = Detective Quantum Efficiency: DQE measures the efficiency of the detection process of an image detector given by squared ratio of the output signal-to-noise ratio to the input signal-to-noise ratio.

Excellent





We see a way to reduce dose up to 50% while maintaining image quality

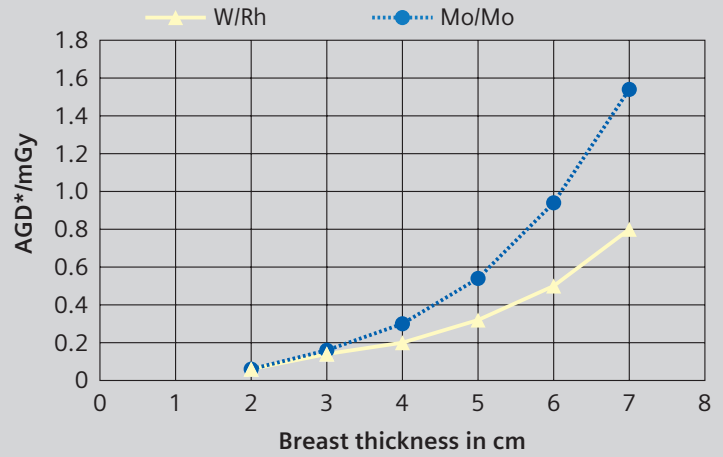
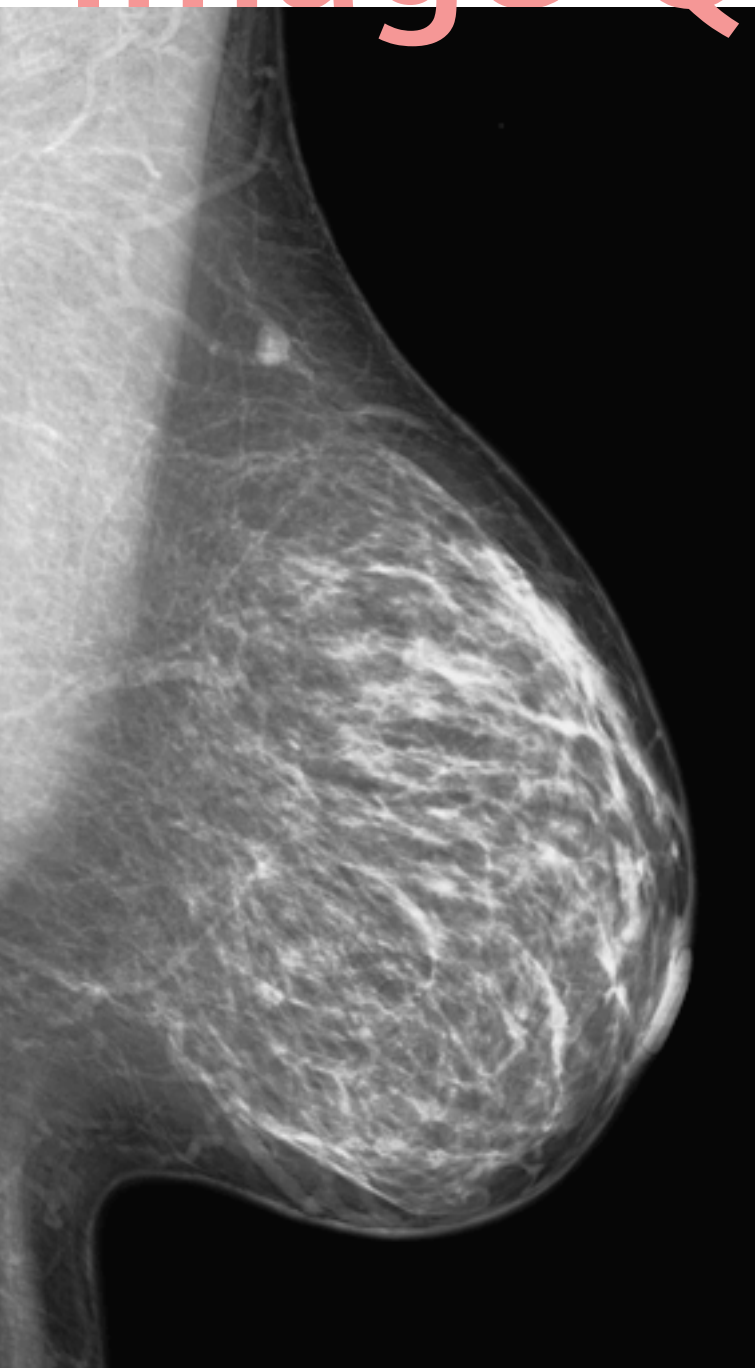


Image Quality

* Average Glandular Dose



OpView, Siemens' advanced image processing software, is specially designed for digital mammography to produce superior image quality. New image processing algorithms provide excellent visibility of the breast border as well as structures in dense tissue. OpView also provides better visualization of microcalcifications and masses.

MAMMOMAT *Novation*^{DR}

Digital mammography at its very best

User convenience

MAMMOMAT *Novation*^{DR} is equipped with a large format detector size (24 cm x 29 cm) for imaging virtually all breast sizes. In addition, isocentric and motorized movements of the swivel arm allow fast and accurate image acquisition in all projections. The unique pivoting bucky enables one unit to perform all functions – full-field digital mammography, digital spot imaging, and digital-imaging-based stereotactic biopsy. The field of view for both large- and small-format images and magnification adjusts automatically to the compression plate in use.

Excellent patient comfort

MAMMOMAT *Novation*^{DR} is designed with unique features for patient and user comfort.

- **Opfocus**TM compression plate is designed for the most efficient use of the detector area – allows a larger area of the pectoral muscle to be included in the image
- **SoftSpeed** slows down the compression plate after initial contact with the breast and adjusts the speed according to compression resistance
- **Opcomp**[®] compresses only as long as the breast is soft and pliable and stops at the point of optimal compression for maximum image quality
- **Opdose**[®] automatically selects the best anode/filter combination (Mo/Mo, Mo/Rh, W/Rh) and the lowest dose for the individual breast characteristics



Patient Comfort

All-in-one digital breast care solution

MAMMOMAT *Novation*^{DR} is equipped with the unique and extremely popular pivoting bucky to enable 100% system utilization. The system allows the integration of Opdima digital spot imaging and digital biopsy system.

MAMMOMAT *Novation*^{DR} with Opdima – providing the advantages of an all-in-one digital unit for the entire digital mammography work-up:

- Digital mammography screening and diagnostics
- Digital and geometrical magnification
- Digital high resolution spot imaging
- Digital stereotaxy – fine and core needle biopsy
- Digital needle localization
- Digital specimen radiography
- Digital galactography



Acquisition Workstation (AWS)

Dedicated acquisition workstation

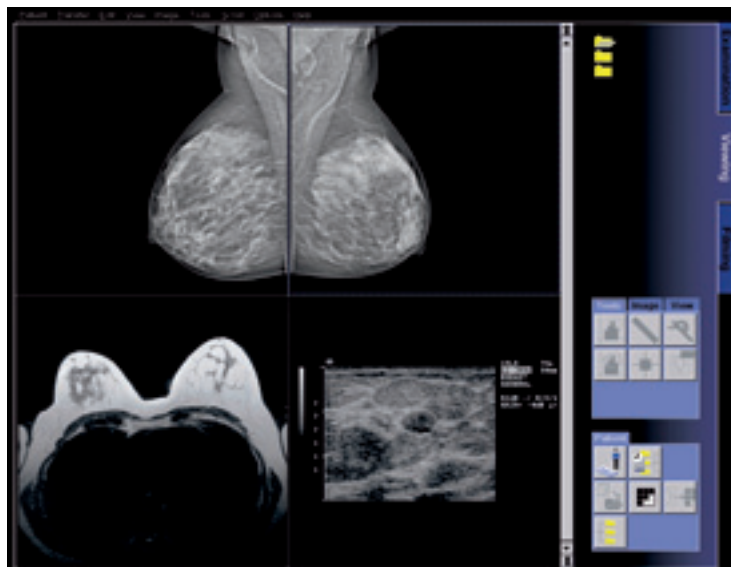
The unique AWS is *syngo*-speaking and ideally suited for mammography. You profit from the significant advantages of *syngo*, including ease of use. For example, a multi-modality viewer allows you to consult previous images, as well as images from other modalities, to prepare for the current examination or interventional procedures. If required, *syngo* enables the RIS client to run on the AWS with no need for a second workstation. The AWS has full DICOM capabilities, including "Modality Performed Procedure Steps" (MPPS), to enable the workstation to send information about the examination (e.g., kV, mAs, number of acquired images) to other systems such as RIS.

After the exposure, OpView image processing software runs on the acquired image. The image is then displayed on the monitor and is automatically annotated with the related exposure parameters such as kV and mAs, plus compression force and dose information as may be required in certain countries.



We see a way to quickly access all case related information at one workstation, including request, report and display images from all modalities

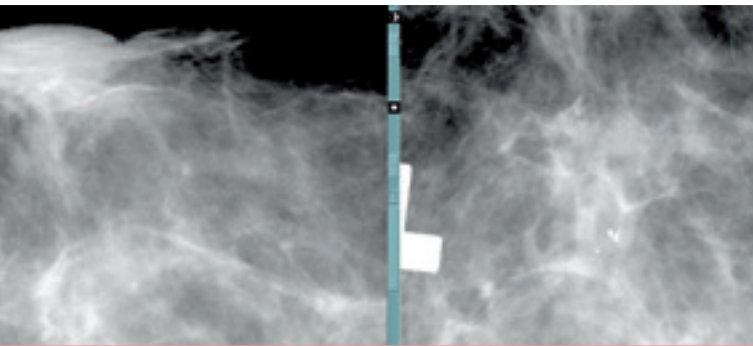
Ease of Use



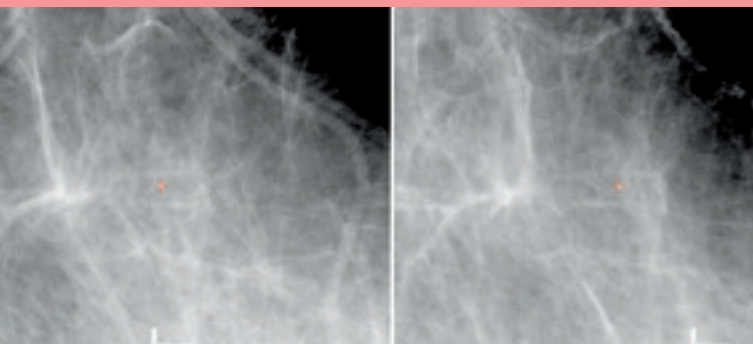
Opdima

The gold standard in digital biopsy and spot imaging

We see a way to provide the highest digital resolution in the industry with up to 20 lp/mm



Spot images



Stereo images

Opdima, an option for MAMMOMAT *Novation*^{DR}, is designed to perform quick and efficient stereotactic needle and core biopsies, localization procedures, and digital spot imaging. With a detector resolution of up to 20 lp/mm, Opdima provides the highest resolution of any spot imaging system as well as a very high contrast range of 4,096 shades of grey. This level of resolution is usually sufficient to detect the smallest microcalcifications.

Opdima displays images in near real-time at the workstation. Biopsy targeting takes place online, allowing automatic coordinate calculation. The benefits are shorter examination times, higher throughput and less discomfort for your patients.

Opdima's software provides a comprehensive set of functions covering all operations necessary to complete an examination. Patient registration, evaluation, post-processing, interactive backup and archiving are all integrated in the same window-oriented user interface. All functions are accessible via logically structured menus and can be called up with the mouse. Opdima provides the following DICOM functionalities: Print and Send & Receive.

Unmatched Resolution



syngo MammoReport

Breast care workplace – plus so much more

syngo MammoReport, the dedicated breast care workplace, is designed for high throughput and optimized workflow – ideal for screening as well as diagnostics. With syngo software, syngo MammoReport adds a simple, intuitive user interface and powerful networking capabilities to its already exceptional advantages.

syngo MammoReport is designed to meet all your needs in mammography – tailoring the entire reporting process to your individual requirements. With extremely fast image loading, one case (comprising eight images) can be called up in less than one second.

We see a way to improve your diagnostic workflow – loading 8 mammograms in less than one second



Advanced hanging protocols allow easy viewing of a study with more than four mammograms, including images from other modalities. Plus, a special workflow-oriented keypad can be customized, including one key touch for the complete reporting process.



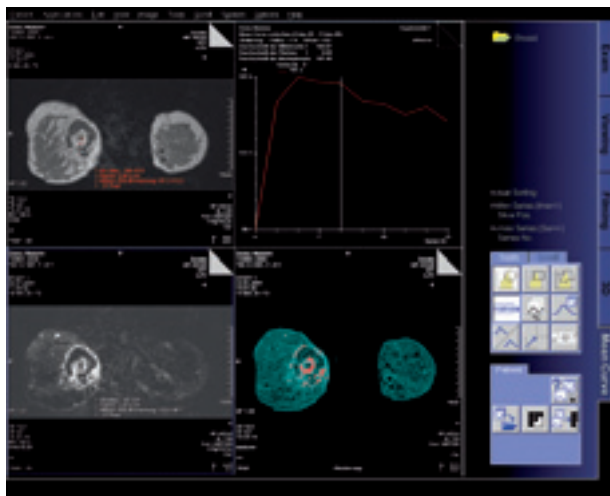
High Throug

syngo MammoReport has true multi-modality capabilities to integrate images from other modalities, such as MR and Ultrasound, into your clinical workflow. The workplace is also suited for special application packages, such as 3D, 3D Fusion (PET/CT) and MR Soft Tissue Evaluation, as well as mammograms from third-party mammography vendors.

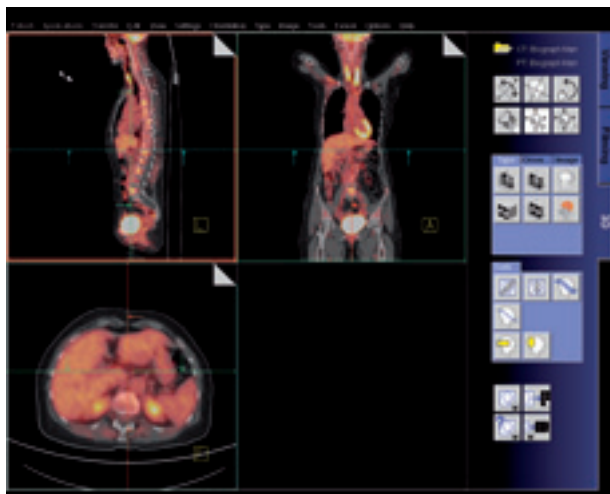
syngo MammoReport enables efficient use of computer aided detection (CAD) from iCAD, Inc. and R2 Technology, Inc. and makes remote consultation

with other physicians available with telemammography. Multiple magnifying glasses, structured roaming and a panning function allow for full spatial resolution. Reporting can be done according to BiRads classification and the system is fully compliant with DICOM standard and IHE* workflow.

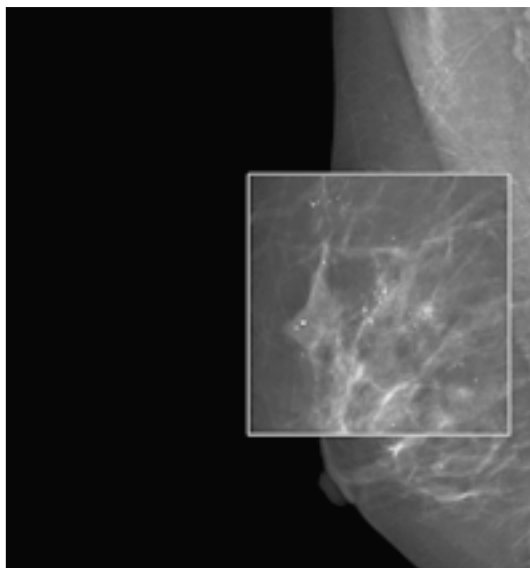
* Integrated Healthcare Enterprise



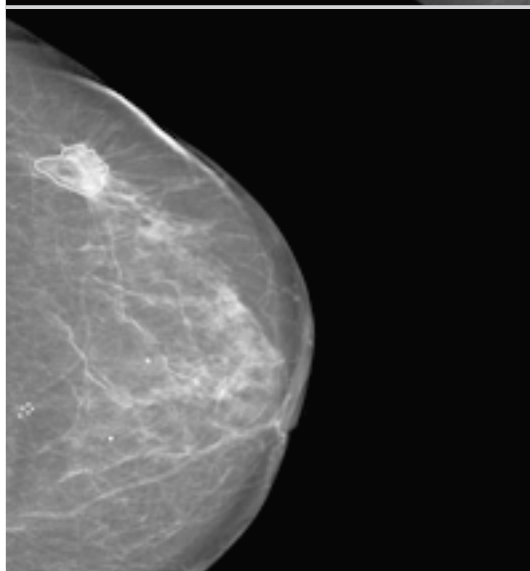
MR Soft Tissue Evaluation



3D Fusion (PET/CT)



Magnification View



Computer Aided Detection

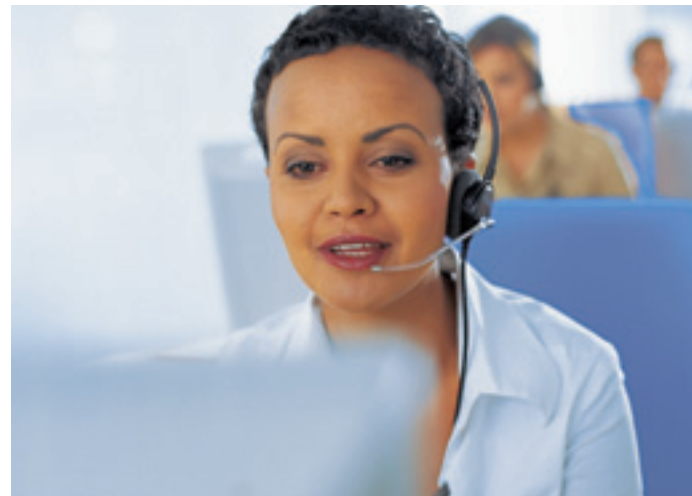
Siemens Digital Mammography Smart investment and reliable service

Life

Life is the unique customer care solution from Siemens that helps you get the most from your investment. From the moment of your purchase, Life surrounds you with an array of programs and support that enables the continuous development of your skills, productivity, and technology. Allowing you to broaden your capabilities. Increase profitability. And take patient care to the next level.

Service

Siemens Remote Service – the efficient and comprehensive infrastructure for the complete spectrum of medical equipment-related remote services – combines high-tech medical engineering with state-of-the-art information technology. Services, which formerly required on-site visits, are now available via data transfer. But that's not all. By proactively monitoring your system, we can detect parameter deviations before problems occur. And that is just a brief glimpse into the new dimension in system support.



Customer Service

Proven Outcomes in Digital Mammography

Satisfied customers

“ Siemens’ innovative technology enables us to better pinpoint disease and plan treatment. As a radiologist, I appreciate the excellent image quality and ease of use of manipulative tools afforded by the MAMMOMAT *Novation*^{DR}, while our patients appreciate its speed, convenience, and comfort. ”

Dr. Ken Hager, Radiologist
Advanced Imaging of Gadsden
Gadsden, AL, USA

“ Thanks to MAMMOMAT *Novation*^{DR} we have improved our patients’ satisfaction. Radiation exposure is an important issue for patients and physicians. MAMMOMAT *Novation*^{DR} has a large detector which means, in most cases, only one exposure is necessary for a complete breast image. And Siemens’ unique compression plate means less painful exams because only the pressure necessary for optimal image quality is applied. We are convinced that MAMMOMAT *Novation*^{DR} meets two important goals: offering women an excellent diagnostic service and ensuring them optimal comfort. ”

Professor Dr. Detlev Uhlenbrock
St. Josefs-Hospital
Dortmund, Germany

“ A comfortable, efficient imaging process significantly contributes to the high level of quality patient care we provide. With the MAMMOMAT *Novation*^{DR} system, we’ve experienced improved workflow, with decreased imaging time and the ability to manipulate images easily at the workstation. ”

Connie Deardorff, Program Manager
Breast Health Center, Athens Regional Medical Center
Athens, GA, USA

Customer Satisfaction

Proven Outcomes in Digital Mammography

The power to see the whole picture

MAMMOMAT *Novation*^{DR}

Excellent image quality

- Dual target X-ray tube: Mo/Mo, Mo/Rh, W/Rh for dose reduction
- 2nd generation direct-to-digital technology (FFDM amorphous selenium detector) with excellent absorption rate, resolution, and DQE (Detective Quantum Efficiency)
- OpView, advanced Siemens' image processing software, for better visualization of breast borders as well as structures in dense tissue

User convenience

- Large format detector size (24 cm x 29 cm) for almost all breast sizes
- True isocentric rotation for fast and accurate positioning
- Motorized system movements
- Unique pivoting bucky – FFDM detector and Opdim

Excellent patient comfort

- Revolutionary compression plate Opfocus for central positioning
- Special comfort features SoftSpeed and Opcomp
- Opdose for excellent image quality at the lowest dose

All-in-one digital breast care solution

- Pivoting bucky to support Opdim
- Digital screening and diagnostics
- Digital and geometrical magnification
- Digital high resolution spot imaging
- Digital stereotaxy – fine and core needle biopsy
- Digital needle localization
- Digital specimen radiography
- Digital galactography

Acquisition Workstation (AWS)

Dedicated acquisition workstation

- *syngo*-speaking acquisition workstation
- Ideally suited for mammography

Networking

- Allows RIS client to run on AWS with no need for second workstation
- Access and review of previous exams including other modalities, reports, and requests
- Full DICOM capabilities

Advanced image processing

- OpView, Siemens' image processing software
- Automatic image annotation with related exposure parameters, plus compression force and dose information as may be required in certain countries



Digital Mammography

Opdimia – Digital Biopsy and Spot Imaging

Superb image quality


- Unmatched detector resolution, up to 20 lp/mm
- High contrast range, 4,096 shades of grey
- Increased diagnostic ability to view tiny microcalcifications

Time savings

- Near real-time image display at workstation
- Online targeting; fully digital
- Faster examinations

Digital operation

- Post-processing; digital functionality
- Intuitive menus for ease of operation
- Transfer and archiving of images, DICOM Print, Send & Receive

 **Proven Outcomes.** This is what Siemens is helping to deliver right now. Outcomes that result from truly efficient workflow. Outcomes that improve your bottom line. Outcomes that lead to a level of care that feels exceptional to the patient and the care provider. Proof positive of the value of integrating medical technology, IT, management consulting and services. In a way that only Siemens can.

syngo MammoReport Breast Care Workplace

User convenience

- For the highest demands in both screening and diagnostics
- All steps of the reporting process can be tailored to your individual requirements
- Extremely fast image loading; one case (comprising eight mammograms) can be called up in less than one second
- Advanced hanging protocols allow easy viewing of a study with more than four mammograms
- Special keypad customized to your individual workflow

All-in-one breast care workplace

- All the advantages of *syngo*
- True multi-modality viewing capabilities to integrate images from other modalities, such as US and MR, into your clinical workflow
- Special application packages such as 3D, 3D Fusion (PET/CT) and MR Soft Tissue Evaluation
- Suited for mammograms from third-party mammography vendors using the DICOM (MG for presentation) standard

Streamlined workflow

- CAD (Computer Aided Detection) from iCAD, Inc. and R2 Technology, Inc., plus full DICOM SR (Structured Report) compatibility
- Full spatial resolution with magnification, zoom & pan or structured roaming
- Data management for "Second reading", including marking of image details
- Reporting according to BiRads classification
- Fully compliant with DICOM standard and IHE workflow

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Solutions that help