

# Giotto

IMAGE 3D



The New Dimension  
in digital Mammography

IMS

# BREAST CARE WITHOUT COMPROMISE

- Experience and Innovation
- Perfect Image quality
- Easy and fast workflow
- Excellence in early detection of breast cancer

○ More than 40 years in x-ray imaging and 18 years exclusively dedicated to the early detection of breast cancer: this is the background of the development of the latest digital GIOTTO IMAGE 3D. Years spent working together with radiologists and radiographers with the aim of improving image quality, simplifying the procedures and thus giving them the right tools to successfully achieve their goals. Early detection of breast cancer is now an achieved goal and makes your work more convenient and safer.

○ 2003 was the year when IMS introduced the first digital Full Field Digital Mammography unit Made in Europe! And the Giotto family grew: 18x24 cm detector, 24x30 cm detector, Full Field Digital Biopsy, Low Dose version using Tungsten anode tube.

○ With the new GIOTTO IMAGE 3D we are proud to introduce an outstanding mammography unit which combines the Giotto traditional ring shaped gantry for better access to the breast with Selenium<sup>2</sup> detector, the most advanced version of the Amorphous Selenium detector.

○ More than 2 million women all over the world have been examined using the Giotto FFDM technology conceived, designed and carried out in IMS R&D laboratories. Excellent image quality, full dedication to the common task for early detection of breast cancer, designed for patient comfort, with continuous technological advance, along with attention to requirements of radiologists and radiographers are some of the reasons for the success of this amazing mammography unit.

○ Clear lines, smooth shapes, rounded edges and a unique circular gantry; an elegant design to help women approach this sensitive examination without anxiety. The 3-D movement, a unique feature of the GIOTTO IMAGE 3D, helps in the visualization of retro mammary tissue, increases the patient's comfort, adapting the tilting angle of the circular gantry to her anatomy.

○ The daily fight for early detection of breast cancer is a must: it requires excellent image quality and optimal contrast to visualise the fine details. GIOTTO IMAGE 3D provides the best quality achievable in the world market today being equipped with the most advanced components and superior software developed by IMS.

○ 11 years of experience with mammography, dedicated direct conversion detectors (Amorphous Selenium) and 6 years of production and development of Full Field Digital Mammography Systems. These are the features that contribute to the superior performance of GIOTTO IMAGE 3D with optimized workflow and enhanced comfort for the best achievable diagnostic results.



# CONVENIENT

## CONVENIENT AND EFFECTIVE

- The elegant circle gantry is the perfect ergonomic design for both your patients and your radiographic staff
- Innovative in technology, innovative in design
- Optimum image quality

○ The motorized movements of GIOTTO IMAGE 3D with isocentric height control and the preset customizable automatic sequences of views speed-up your examination. After each exposure, with a single touch, the system is pre-programmed to move for the next exposure.

○ GIOTTO IMAGE 3D is equipped with a fully automatic AEC able to optimize the image quality, providing the highest contrast with the lowest dose. This leads to the best results independent of breast size or view: the entire detector surface is a sensitive area and the computer is able to disregard the area not covered by the breast.

○ Radiographic staff find the user interface, Raffaello® RWS, intuitive and convenient to use. GIOTTO IMAGE 3D has been designed for high volume workflow: immediate image display, minimal waiting time between exposures, ease of positioning, automatic preset view sequences and motorized isocentric movements. These are just some of the many advanced features of the unit.

○ Working with GIOTTO IMAGE 3D is fast and easy. It fully meets the demands of busy mammography departments with high patient throughputs, such as screening units. Four control panels placed in strategic locations on the unit make it possible to control manual and automatic movements from any position.

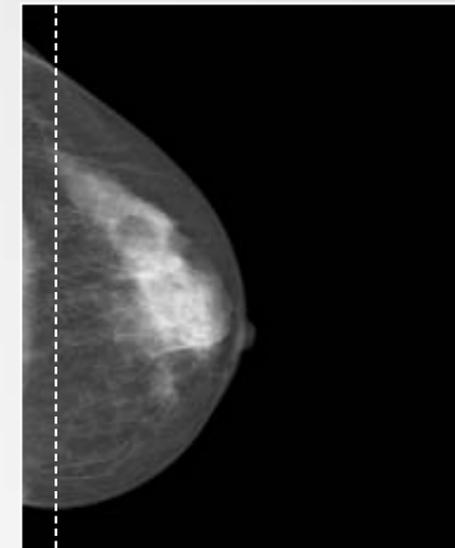
○ Positioning with GIOTTO IMAGE 3D is more comfortable and more flexible than positioning with any other mammography unit. Who else gives you a choice in positioning? You can use the conventional mode, positioning the patient from the side. As an alternative, GIOTTO IMAGE 3D is the only mammography unit that offers you face-to-face positioning: you might find it faster and more effective. Use one or the other depending on the patient's anatomy: the aim is to optimize image quality quickly and efficiently.

○ The human body is 3-D and so is GIOTTO! The circle gantry provides the most achievable flexibility in suiting any woman's anatomy. Women in wheelchairs take advantage of this unique characteristic: Giotto inclines towards the patient for easier exam positioning.

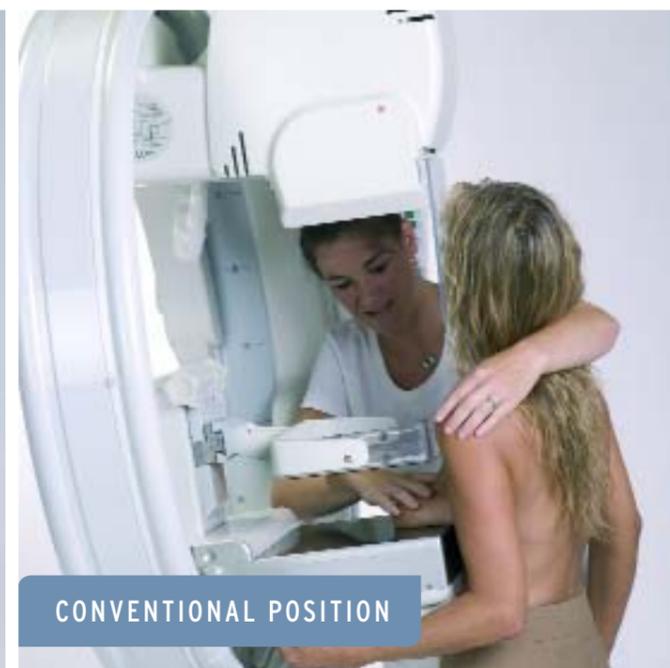
○ The inclined gantry of GIOTTO IMAGE 3D means more comfort for the patient as they lean into the bucky. This position allows the pectoral muscle to be relaxed and up to 2 cm more breast tissue can be compressed and visualized, allowing more breast tissue to be visualised for diagnosis.

○ GIOTTO IMAGE 3D is not provided with handles. Gripping on handles causes muscle contraction which in turn causes breast retraction: gravity lessens this effect.

○ GIOTTO IMAGE 3D comes with SCS (Sensitive Compression System) to decrease patient discomfort during breast compression. The computer selects the compression speed sensing the density of the breast.



UP TO 2 CM MORE TISSUE



CONVENTIONAL POSITION



FACE TO FACE POSITION



# EXCELLENT

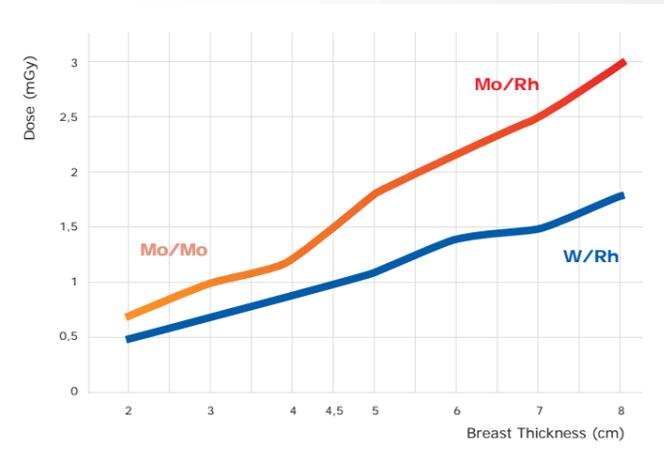
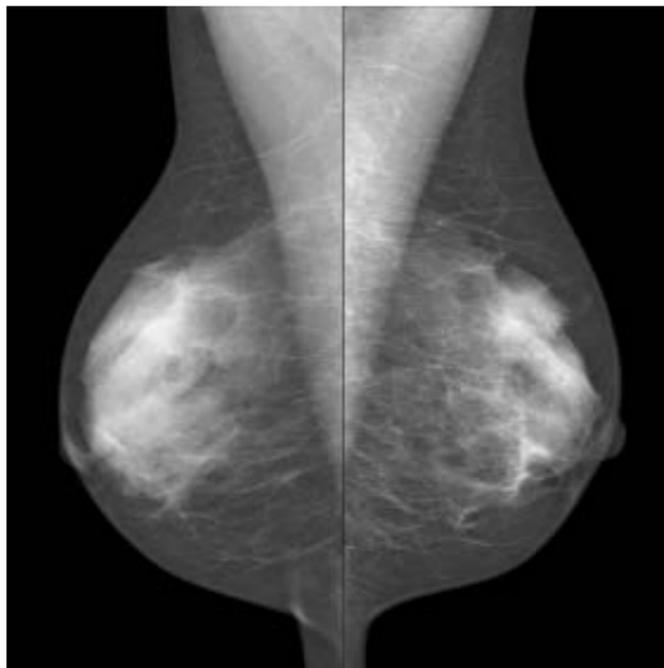
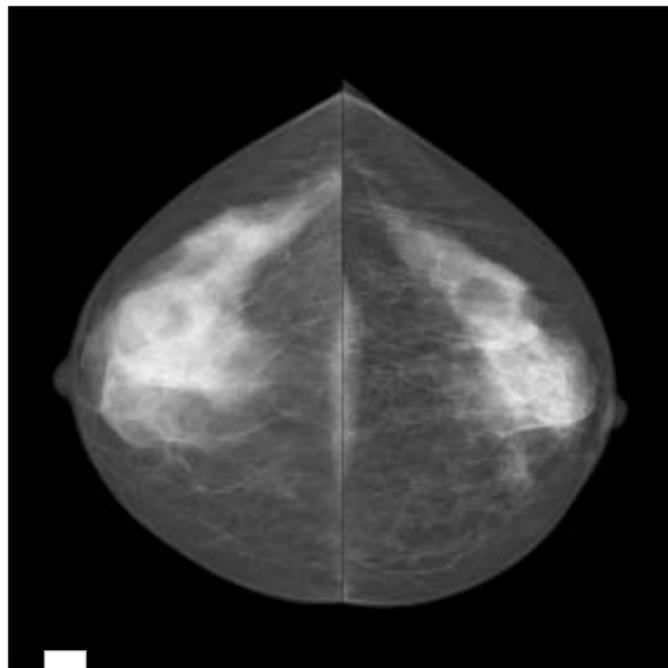
## EXCELLENT IMAGE QUALITY

- Direct conversion technology a-Se detector
- Tungsten anode & special filter for low dose levels
- Raffaello: the most complete & intuitive user interface

○ At IMS we know that perfect image quality is a pre-requisite for the early detection of breast cancer. This is why, in 1998, we have chosen and developed our FFDM unit based on the no.1 detector in the market: Anrad Selenium<sup>2</sup>, second generation of amorphous Selenium technology. GIOTTO IMAGE 3D provides 85 micron pixel size chosen by physicists because it represents the best possible compromise between the highest spatial resolution and the lowest noise.

○ Selenium<sup>2</sup> is the digital mammography detector with the highest S/N ratio and has the best performance in terms of MTF and DQE. This is why it provides the best image quality.

○ Raffaello, named after the famous Renaissance artist well known for his passion for detail, is also the name of the GIOTTO IMAGE 3D user interface able to clearly demonstrate the smallest detail of breast tissue. It makes use of a very advanced Tissue Equalization Software designed by IMS R&D, able to highlight the smallest lesion even when situated in dense glandular tissue. This is achieved by an intuitive and simple tool management: Raffaello is a sophisticated advanced reading software which is easy to use.



○ Radiation exposure dose to the patient and image quality are competing factors in mammography. IMS has been the first to introduce a special solution for FFDM: a combination of Tungsten anode tube with a Rh filter. The result is a significant decrease in the dose delivered to the patient.

○ The Raffaello Review Workstation (RWS) with 2 High Resolution monitors is the powerful reading workstation for your daily work. The dedicated screening keypad, the fully automatic AEC able to select the parameters based on the radiological breast density are among the factors able to provide an incomparable image quality and optimal productivity.

○ The optional CAD, the multi-modality monitor and several other options are available to complete your diagnostic mammography system. Total connectivity is guaranteed by full DICOM conformance. Sharing, retrieving, printing and archiving images is easy with GIOTTO IMAGE 3D.



# EXPAND YOUR DIAGNOSTIC BANDWIDTH



After the diagnostic examination, if a biopsy exam is required, the same GIOTTO IMAGE 3D will be used for this application. GIOTTO IMAGE 3D shows its uniqueness: it's the only mammography system also able to perform stereotactic biopsies with the patient in a prone, upright or lateral decubitus position.

The conversion to prone unit is quick and easy. The stereotactic device "Biopsy Digit" simply slides in replacing the bucky. With a gentle movement the gantry tilts up to the horizontal position.

It is easy for the patient to get on the Mammobed: with a lower height of only 74 cm there is no need for additional steps. Push-buttons placed on both sides of the Mammobed allow it to raise to the desired height.

Thanks to the four wheels, the Mammobed can be quickly positioned and the breast centred using the floating table top. Once positioned and the brakes applied you can start the stereotactic biopsy procedure safely.

## FROM MAMMOGRAPHY TO PRONE BIOPSY - NEVER SO EASY

# ACCESS

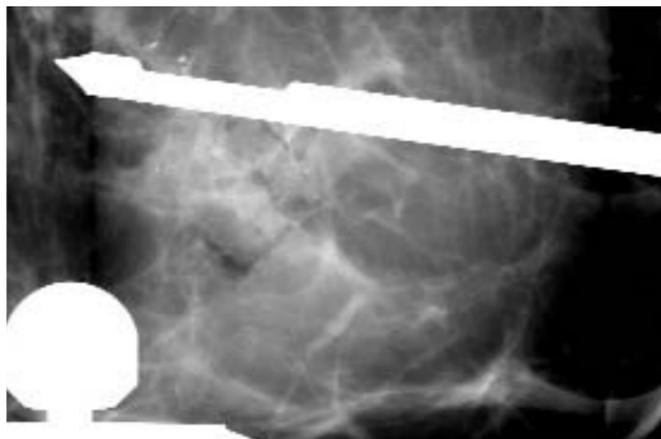
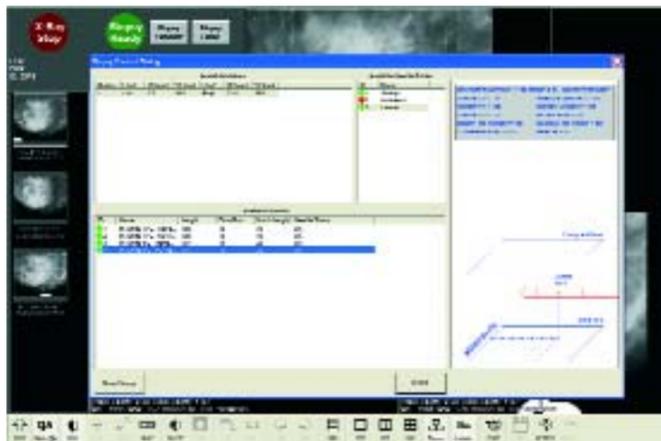
## BETTER ACCESS

- Biopsy with lateral, straight and inclined holders
- 360° access to the breast
- Prone biopsy & Mammography with the same Selenium detector: unique

### Giotto Image + Stereotactic Biopsy = versatility:

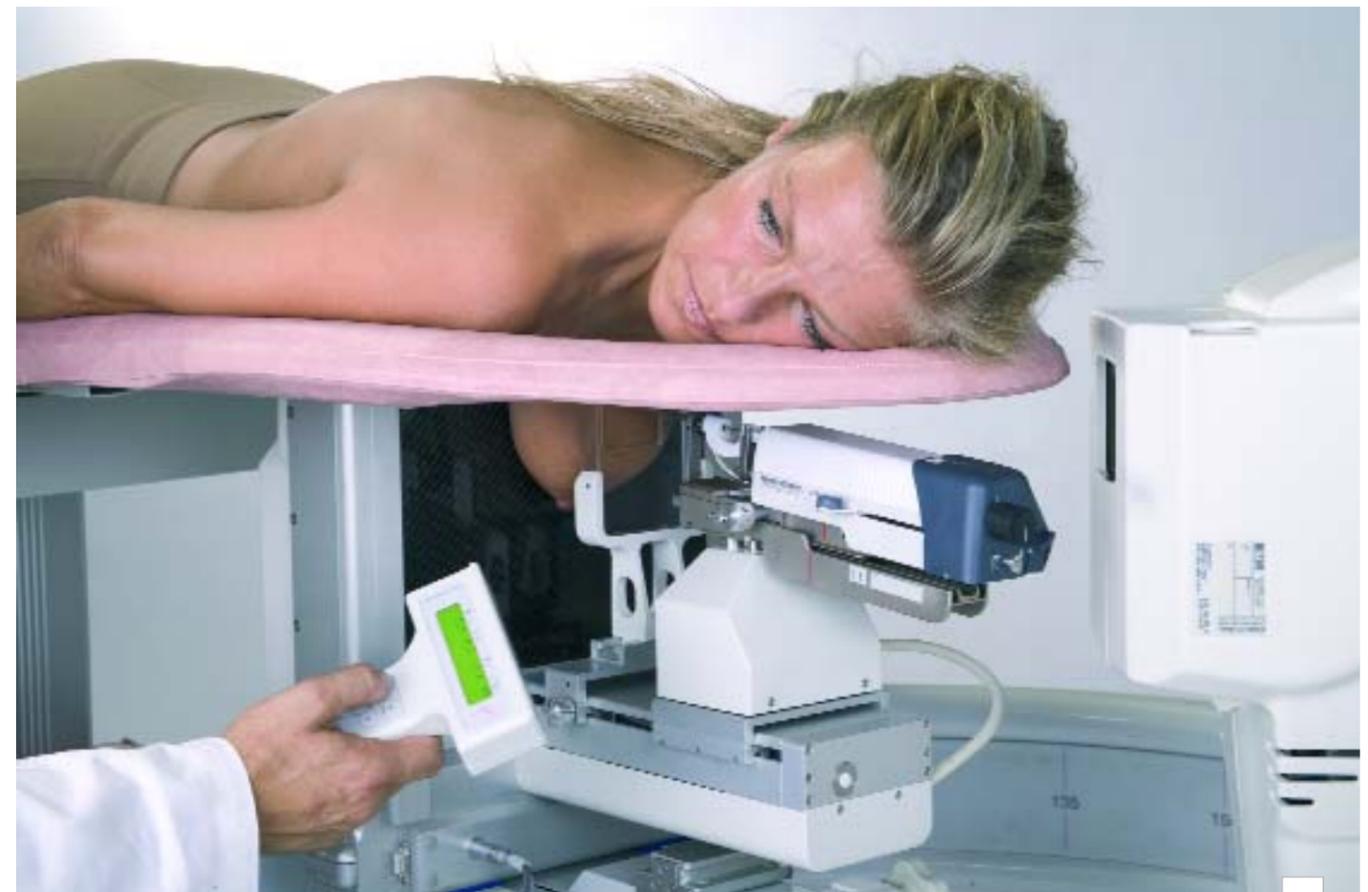
- 360° needle access to the breast
- Ability to choose the best possible approach to the breast using the dedicated gun-holders: frontal, frontal inclined and lateral guarantees that no area of the breast is inaccessible with the Biopsy Digit.
- Ability to choose the optimized angle for needle access to the breast at any stage without moving the patient. Lateral access is particularly useful in the case of small breasts and/or lesions placed in the inferior part of the breast, very close to the skin surface.

The lateral arm is provided with double inclination: on X and Y axes. This innovation enables the needle to reach any part of the selected breast area. The Raffaello Biopsy software calculates the exact target position in relation to the gun-holder selected, the needle characteristics and the double X-Y inclination of the needle holder.



○ Prone Biopsy is by far the preferred stereotactic breast biopsy modality of radiologists all over the world. There are unquestionable advantages for the patient and for the user, and above all, for the quality of the diagnostic result. Giotto Image allows a 360° access around the breast, enabling the radiologist to choose the shortest way to the lesion.

○ But GIOTTO IMAGE 3D has yet another uniqueness: it is the only one able to guarantee that the lesion visualized during the mammography exam will also be visible during the biopsy. This comes from the fact that it uses the same unit, same detector, same geometry and x-ray source for both Mammography and prone Biopsy examinations. This solves a frequent problem well known by radiologists.



# GUIDED SAFE PROCEDURES

- Upright, prone, and lateral decubitus biopsy: unique
- Biopsy Digit: the most precise stereotactic tool
- Raffaello Biopsy drives you safely toward the optimum result

○ GIOTTO IMAGE 3D the most versatile tool: you are free to choose the best biopsy positioning for each patient and case. Only GIOTTO IMAGE 3D gives you the freedom to choose the biopsy procedure you select for any specific case. Prone, upright or lateral decubitus: there is no limit to the versatility of the Giotto Image.

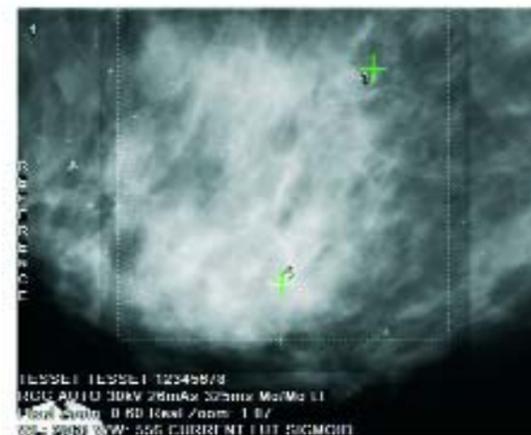
○ Using the GIOTTO IMAGE 3D you can position a breast marker with the patient in any chosen position.

○ Biopsy Digit is compatible with all kinds of commercially available biopsy devices: all brands of Vacuum Biopsy, Core Biopsy and also fine needle aspiration (FNA) for cytology.

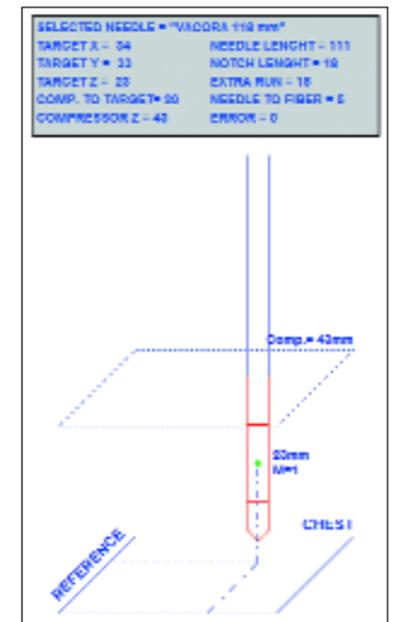


○ Biopsy Digit, the stereotactic device equipping GIOTTO IMAGE 3D, has the ability to be the most precise available on the market, maximum deviation from the target does not exceed 0.5 mm. It is fully automatic, computer driven, motorized in X, Y and Z axis and is provided with a remote control for fine manual movements. Biopsy Digit makes a complex procedure, like stereotactic biopsy, easy, fast and safe. Wire marker localisation, cytological and histological biopsies are possible with Biopsy Digit.

○ The graphic interface, Raffaello Biopsy, is sophisticated and user friendly software assisting the radiologist safely step-by-step to a successful result. Raffaello Biopsy is an error proof software, it allows an unlimited marking modality, mark on scout, and the original "Virtual Needle Positioning". This useful tool enables the radiologist to decide whether to modify the access to the breast or the type and length of the needle without moving the patient. This is an extremely valuable time-saving tool.



Larger field of view



- Virtual Needle Position Optimize Patient Positioning and Procedure Planning
- Mark-On-Scout
- Automatic Motorized Movement of the Needle Holder

# MANY QUESTIONS ONE ANSWER

- A comprehensive solution provided by a single piece of equipment
- Versatility and ease of use
- Upgradable to Tomosynthesis and other future technologies
- Total customer care

○ Giotto Image FFDM represents the most advanced innovation in Digital Mammography in the market today. However, new digital technologies are now under investigation to further improve small lesion visibility in dense breasts.

○ These new advanced applications of digital mammography, like Tomosynthesis, Contrast Enhanced Digital Mammography, Dual Energy are, currently work-in-progress at IMS. They are part of the Giotto Image long term R&D project. GIOTTO IMAGE 3D is, thanks to its unique design is pre-disposed to Tomosynthesis as well as for the other advanced applications.

○ The main philosophy of IMS is full dedication to Mammography and the Advanced Research in the field represents our main task today and for the future. Providing advanced technologies and solutions, is the way forward with our customers.

○ Customer care is, at IMS, an absolute priority and we serve our customers all over the world with continuous technical training courses made to increase the skill and the experience of the authorized after sales service of our exclusive Distributors. Constant monitoring of the service activity aims to achieve a fast response eliminating, wherever possible, any downtime.

○ Users can benefit from the IMS Remote Service able to remotely monitor your system, upgrade the software, check parameters quickly and efficiently direct from IMS labs in Italy.





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