

Maximum flexibility
Full automation
Superb image quality



DR SOLUTIONS

A complete range for all needs in
Digital Radiography (DR)

DR SOLUTIONS

ITALRAY DR SOLUTIONS is a complete range of digital radiography rooms and represents the perfect solution for modern Radiology Departments, for both General Radiography and Trauma. Thanks to the extreme modularity and full automation of the ITALRAY DR architecture, customers can rest assured that there is an ITALRAY DR system that perfectly fits all four main department needs:

CONNECTIVITY: use of Radiology Information Systems (RIS) and Picture Archiving and Communications Systems (PACS) for a full distribution of images and exam information throughout the Hospital

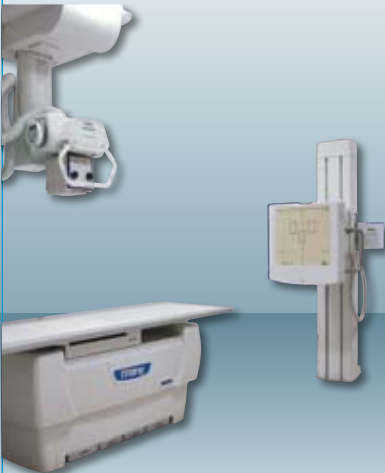
PRODUCTIVITY: optimization of department operating costs thanks to the high efficiency and examination speed of ITALRAY DR systems

DOSE REDUCTION: significant reduction of patient dose thanks to the Flat Panel Detector technology with extremely high sensitivity and dynamic range

IMAGE QUALITY: see details and anatomical structures with detail and contrast resolution levels unachievable with film or CR.

DR-2T

Dual detector system
for Chest, General Radiography
and Trauma



DR-2S

Dual detector system
for Chest and General
Radiography



DR-T

Complete versatility
for Chest, General Radiography
and Trauma



ITALRAY DR SOLUTIONS

- Significant department productivity enhancement thanks to the high device positioning automation, anatomical programs, predefined working positions and images available in few seconds from exposure
- Overall cost reduction: traditional time-consuming processes for cassette handling, film/CR processing and printing are not needed anymore
- Intuitive operation thanks to the innovative all-in-one system console with integrated generator and step-by-step Graphical User Interface
- Wider connectivity towards the Radiology Information System (RIS) and the Picture Archiving and Communications System (PACS) via DICOM 3.0 technology
- Complete coverage of the anatomic region of interest with a wide active area of 43 cm x 43cm with the fixed detector and 35 cm x 43 cm with the portable detector
- Superb image quality and minimum patient dose thanks to the high values of sensitivity, resolution, and dynamic range of the a-Si flat panel detector with CsI scintillator
- Utmost dose reduction with the *INSTA*focus "pendulum" grid system and special anatomical programs, including pediatrics
- High frequency generator granting high quality of the X-ray beam first and, consequently, of the radiological image
- everest-X image latitude enhancement algorithm

DR-U

Maximum flexibility, all applications, even in narrow rooms



DR-M

Wireless and portable digital flat panel detector for the most difficult and unusual projections



X-Frame DR

Digital acquisition system



X-Frame DR-2T

ITALRAY X-Frame DR-2T is a dual detector DR System, for Chest, Trauma and General X-ray applications, from muscle-skeletal to chest and emergency examinations. It is composed by a X-ray ceiling tube stand, a multifunctional stand (for examinations in vertical position or on a mobile table) and a radiographic 4-way elevating table.

Elevating table: its minimum height facilitates access to patients either on a mobile table or on a wheelchair. Its maximum height allows operators to easily access patients for any repositioning required by the examination.





Oblique projection on elevating table with automatic centering, automatic collimation and automatic focus tracking



Vertical and Chest examinations with adjustable focal distance and automatic centering and collimation



Upper and lower extremities with minimum patient-detector distance





Examinations on a mobile table with patient in horizontal position

Lateral projection on a mobile table with patient in horizontal position





For instant verification of centering and collimation, the collimator light is automatically switched on whenever a new projection is selected and whenever the patient goes in front of the detector.

To reduce image acquisition time and to avoid useless patient repositioning, ITALRAY DR systems are characterized by high levels of automation, allowing the automatic and motorized collimation and system positioning all around the patient, basing on the examination to be performed.

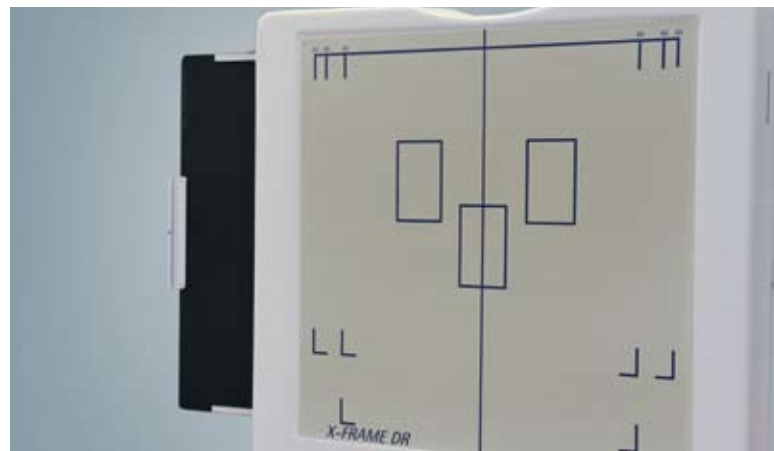
With the optional FULL SYNCHRO package, all system movements are robotic and motorized with predefined working positions. The operator can therefore position the entire system for the selected projection by just pressing the corresponding button on the remote console or on the tube stand console. Furthermore all axes can be individually remote-controlled for fine positioning.

Optional FULL SYNCHRO: console with predefined working positions



X-Frame DR-2S

ITALRAY X-Frame DR-2S is a dual detector DR System, for Chest and General X-ray Applications. It consists in a column (or ceiling) tube stand, a bucky stand and a radiographic elevating table with 4-way floating tabletop. Flexibility and performances are granted in any application: projections with patient in horizontal/vertical position, Chest exams with minimum patient-detector distance, examinations with grid removal.



Removable grid

High productivity and workflow optimization assured by the two flat panel detectors and their extreme ease of use.



X-Frame DR-T

ITALRAY X-Frame DR-T is a single detector DR System for Trauma, Chest, and General X-ray Applications. It consists in an X-ray tube ceiling stand and a multifunctional stand for digital flat detector.

The stand's multiple automatic motorized functionalities allow all radiographic exams: from chest to horizontal trauma patient examinations on the mobile table and to weight bearing extremities.



X-Frame DR-U

ITALRAY X-FRAME DR-U is a single detector DR System based on a U-arm multifunctional stand, especially developed for small hospital rooms and private practices, which is fully motorized with predefined working position and wireless remote control.

The U-arm architecture provides a wide range of movements thus allowing for easy positioning for supine, upright and lateral projections: it means all standard and emergency X-ray examinations with one simple, compact, and easy to operate unit.



Upper and lower extremity examinations with minimum patient-detector distance



Lateral projection for patient on a mobile table

X-Frame DR-M

All ITALRAY DR SOLUTIONS systems can be equipped with the innovative portable wireless flat panel detector (X-Frame DR-M option).

This lightweight and easy to handle digital flat-panel X-ray detector, can be located both in the vertical stand and in the table and provides this system with the needed freedom to capture difficult or unusual X-ray projections. The innovative portable detector is battery powered and employs wireless image data transmission, thus freeing the room from cumbersome and risky cables.

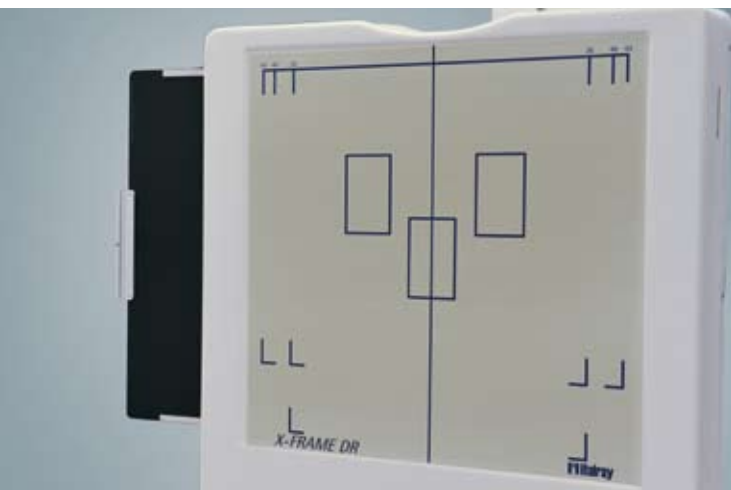


The portable detector can be used either by itself or in combination with a fixed detector. The portable X-ray detector communicates in a wireless mode with its docking station.

Dose Reduction

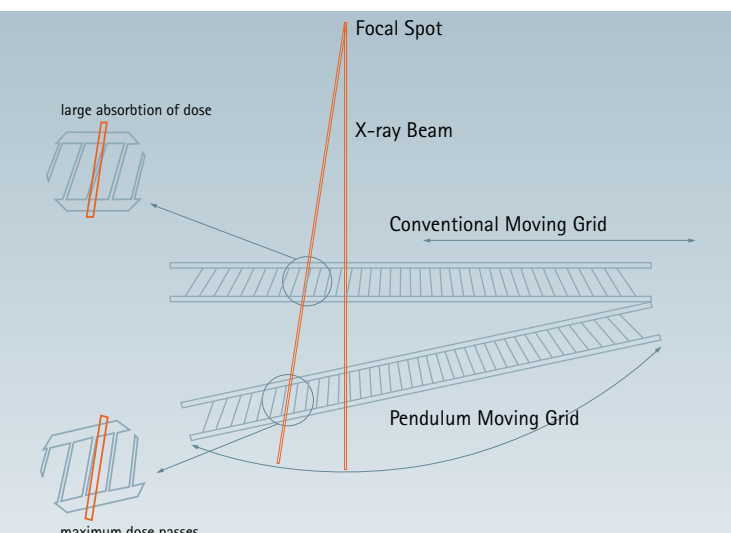
One of the main targets of ITALRAY DR SOLUTIONS systems is to follow the ALARA dose management philosophy (As Low As Reasonably Achievable) and to take advantage of the dose reduction opportunities that solid state flat panel detectors provide in many ways.

The flat panel detector high dynamic range and DQE (Detective Quantum Efficiency) assure detailed and clear images with significant dose reduction compared to film/screen or CR systems. Furthermore, patients are subjected to a reduced number of expositions (retakes are virtually eliminated) and consequently to a lower average X-ray dose.



Anatomical Programs

A further dose reduction is guaranteed by the digital interface between the high frequency generator and the X-Frame DR acquisition workstation allowing the automatic setting of the radiological parameters (kV, mA, s) based on the examinations and its projection, with special dosereduction image-acquisition software programs.



INSTAfocus

The *INSTAfocus* innovative moving grid system, thanks to the proprietary pendulum grid movement, keeps the grid always in optimal focusing conditions with minimum absorption, guaranteeing a dose reduction of up to 18% with respect to traditional moving grids. Moreover, thanks to the moving grid properties, there is no need to change the grid when moving from low focal distances (e.g. skull) to high focal distances (e.g. chest).

Image Quality

X-Frame DR acquires digital radiographic images by means of a digital flat panel detector featuring amorphous Silicon (a-Si) technology and a Caesium Iodide (Cs-I) scintillator that enhances sharpness and minimizes diffusion: a combination that is the de-facto standard in medical imaging and guarantees an extremely high DQE. Images are acquired with an extremely small pixel size thus producing brilliant images with extremely sharp resolution.

Also, thanks to the 16 bits greyscale acquisition depth and very-low-noise electronics, an incredible greyscale dynamic range is guaranteed, and even the most subtle details and the most diverse structures can be effectively identified in only one image, with image retakes practically eliminated.

X-Frame DR has a large number of post processing tools, like Edge Enhancement, unlimited Zoom and real size, Window/Level, Measurements and Annotations.



Unprocessed image



Image processed with X-Frame DR for edge and brightness enhancement



Advanced Applications

IMAGE LATITUDE ENHANCEMENT everest-X

Digital Images, thanks to their very wide dynamic range, contain detailed information in both high attenuation image areas (shoulders, abdomen) and low attenuation image areas (lungs, cavities).

With the innovative everest-X real time image processing engine, it's now possible to automatically expand the latitude of a single image and see all the relevant clinical details at the same time and without time-consuming Window/Level adjustments.

powered by
everest-X
image processing

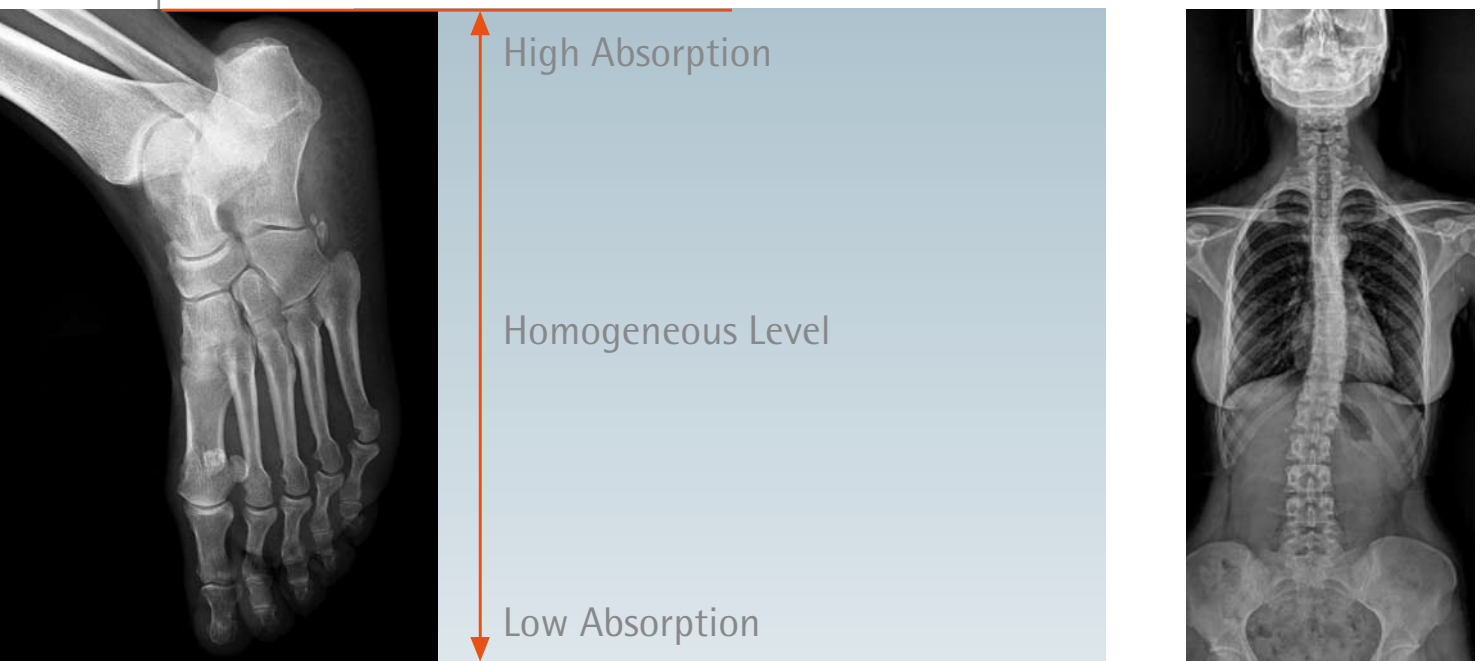


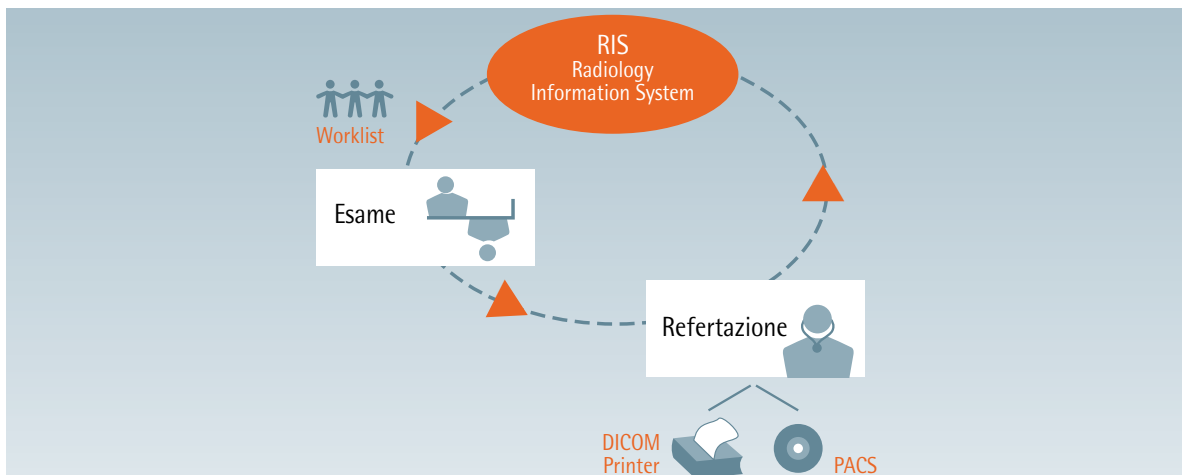
Image Stitching

X-Frame DR can be equipped with the Image Stitching package for Full-Leg and Full-Spine imaging. The Image Stitching package is completely automatic and remote controlled, and the entire procedure can be carried out in less than one minute and with the minimum possible dose.

Connectivity

X-Frame DR is 100% DICOM 3.0 compliant and can be seamlessly interfaced with any third party RIS and PACS system or DICOM printer. The daily worklist is automatically downloaded from the Hospital Radiology Information System; when the patient enters the exam room, all parameters are already set for the specific exam.

Once the imaging session is completed, the entire study can be automatically sent to a PACS, a review workstation, or a DICOM printer; a large number of studies can be also maintained locally for temporary storage. DICOM CDs/DVDs can also be produced when the exam needs to be delivered outside the Hospital network.



Service

ITALRAY DR Systems are equipped with a remote service system that allows ITALRAY service engineers to have access the system via remote network for servicing and upgrading purposes. The remote servicing system availability is subordinate upon the technical/policy characteristics of the local Hospital network. ITALRAY DR Systems can be installed only by authorized technical personnel that has been appropriately trained by ITALRAY.