Medici DR Systems *vet*

DR flat panel upgrade kit

for existing X-ray systems
for operation without cassettes

Medici DR upgrade kit for vets

Medici DR Systems *vet*

Upgrading to digital made easy

You know the problem: Your X-ray system is not even that old and works perfectly. Yet as a progressive veterinary surgeon you would now like to create your X-ray images digitally and benefit from all the advantages of this technology.

CR systems are not an option for you since digitalisation with a flat panel (DR system) offers many additional advantages, mainly better image quality and hardly any servicing costs. Therefore you would like to extend your existing X-ray system by a flat panel system and are looking for a complete upgrade kit that is easy to install, easy to operate and provides X-ray images in a professional and reproducible quality.

Welcome to our Medici systems!

Medici systems are available for almost any existing X-ray system. Various makes and sizes of flat panels allow your system to be configured according to your needs. The ***dicom****PACS*®***DX-R*** acquisition software can be operated intuitively via a touchscreen, adjusts to your work routine and provides X-ray images in a reproducible, extremely high quality.

Of course, all **Medici** systems can be integrated into your practice management software and transfer the X-ray images to an image management system (PACS). If you have not yet installed such an image management system but still require the images to be distributed within your veterinary practice or veterinary hospital, or to colleagues or animal owners via the internet – no problem: Our ***dicom****PACS*®***vet*** image processing system will do just that.

Medici DR upgrade kit for vets

Mode of operation

DR flat panels

14" x 17" wireless

17" x 17" tethered

Automatic synchronisation of detector and generator by means of **AED***
No need to modify the X-ray system and to adjust the system or the cable connections

Attention!
The panel without enclosure has exactly the same measurements as a conventional 43 x 35 cm cassette. Therefore reconstruction of the bucky is not necessary.

X-ray unit

Flat panel
(tethered or wireless)

X-ray generator with console

Further image sources

DR tooth sensor
(KODAK RVG 5100)

Divario
CR-Dental

Operating console
with worklist
(DICOM worklist)

Generator control (optional)
Transfer of examination values
(kVp and mAs values) to the generator

DICOM store of X-ray images

Tethered or wireless transfer of raw images to the console

optional

Viewing station 1

Viewing station 2

*e.g. **dicom**PACS®**vet** with integration into the practice management system*

Practice server/
Archive server

DICOM Basic Print

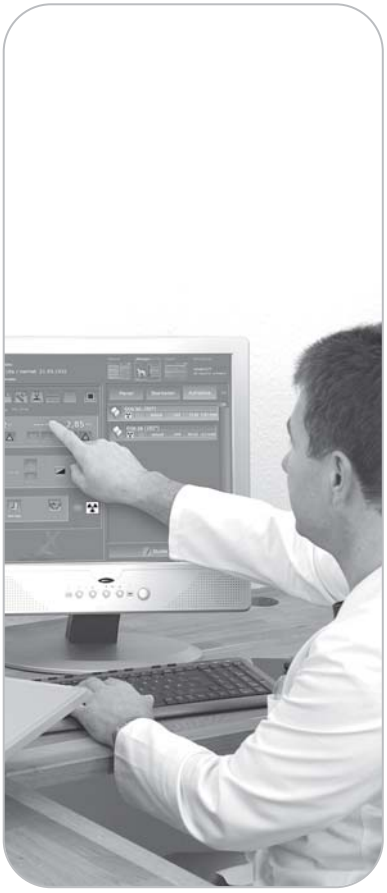
Laser imager

Internet

ORCA Cloud
for image distribution to colleagues or animal holders

100/ 1.000 Mbit practice network

*** Auto Exposure Detection**



Tooth sensor

Software

Benefits of the professional ***dicom****PACS*®***DX-R*** X-ray acquisition software

- Modern graphical user interface (GUI) adaptable to almost **any language**
- **Touchscreen** operation - to ensure quick and efficient work and a smooth workflow
- Capture of patient data via **DICOM Worklist, BDT/GDT, HL7** or other protocols - data may also be captured manually
- Use of **DICOM Procedure Codes** for the transfer of all relevant examination data directly from the connected patient management system (HIS/RIS)
- **Freely configurable** body parts with more than **200 projections** and numerous possible adjustments in **veterinary medicine** already included
- Safe and fast **registration of emergency patients**
- Allows the user to **switch between examinations** of a patient, for instance to avoid having to re-position the patient frequently
- Allows the user to **subsequently add images** to an examination, even after that examination has already been completed
- Special tools for veterinary medicine, such as an extra dialog box for patient and owner data, integrated **MMP and hip dysplasia measuring, special image filters, TPLO, TTP, Buchanan's Vertebral Heart Score, distraction index, multi generator operation** for alternating between mobile and stationary systems and much more…
- Entry of recurring **examination procedures as macros**, e.g. pre-purchase examination for horses
- **Fully integrated radiographic positioning guide** for each examination in veterinary medicine incl. comprehensive notes, photos and correct X-ray images
- Facilitates the use in the dental area, e.g. by means of RVG tooth sensor or dental CR system
- The digital X-ray system can be controlled via **wireless remote control** (e.g. iPod, iPad or similar) including display of the work list, image preview and much more

Benefits of flexible image acquisition

- Integration of various **flat panels, tooth sensors and CR systems** (also dental systems) by different manufacturers
- The **configurable generator interface** enables the user to control X-ray generators or X-ray systems by different manufacturers, delivering the generator settings directly from the software
- Option for the **parallel operation of a flat panel and a CR system** included in the standard package. The user has the choice to take the next image with either the flat panel or the integrated CR system. This flexibility also provides an **excellent emergency concept** in case of a defect flat panel.
- Integration of **dose area product meters** (DAP) - the readings are saved directly to the relevant image
- **AEC** (Automatic Exposure Control) and **ARP** (Anatomical Programmed Radiography) allow the user to **automatically adjust all X-ray options** for each projection with an option to subsequently edit the image manually
- Electronic X-ray log

Operation
of the acquisition software

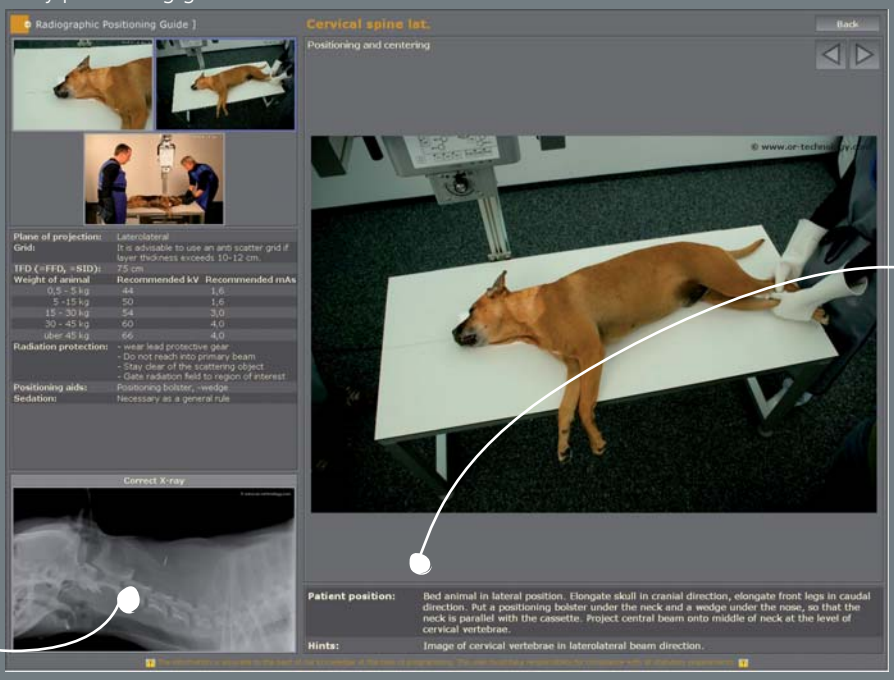
A single click opens the X-ray positioning guide for horses, dogs and cats

Job planning

Diagram for planning a specific X-ray job

Switch to planning X-ray jobs for cats, horses or small animals/ exotic animals

X-ray positioning guide



Provides numerous hints on patient positioning, central ray, tips and tricks, common mistakes etc.

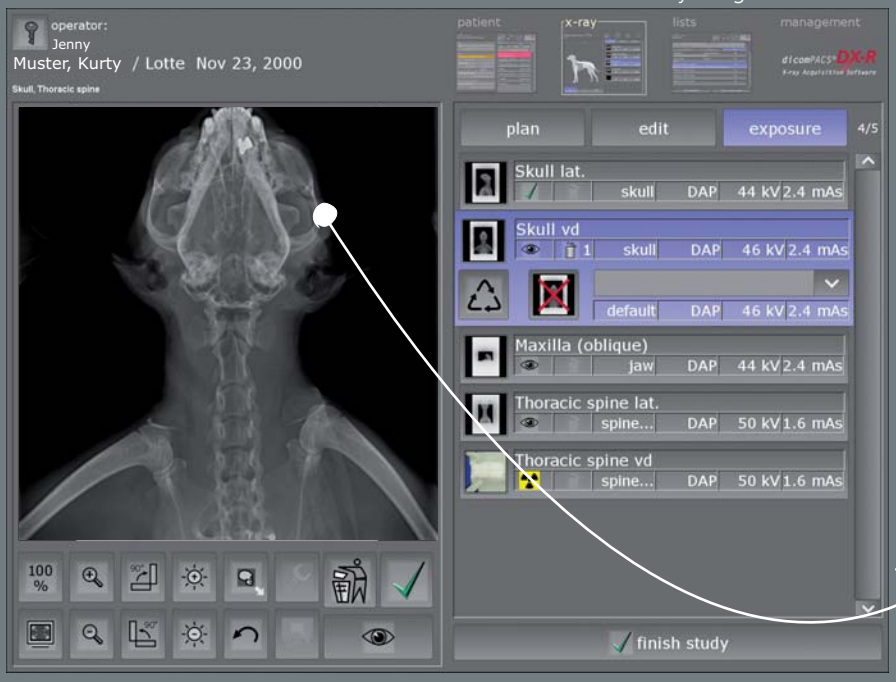
Shows an image of a correct X-ray examination

- user friendly graphic interface
- intuitive operation by touchscreen

Generator control

The generator panel displays all values and settings (kVp, mAs, focus etc.) recommended for a specific examination

Preview of the X-ray image and worklist



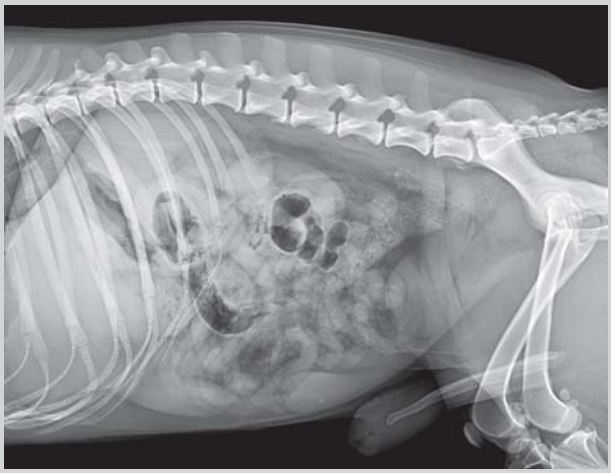
Preview of the current X-ray image

Image processing

Automatic image processing for optimal quality

- Perfect images at all times - generally **no adjustment** required
- Integrated software for **automatic image optimisation**
- Professional, **adaptable image processing** for each individual examination to obtain best possible image settings for the needs of each customer
- Due to specially developed processes, the image processing allows the user to **vary the X-ray settings on a large scale** while the image quality remains virtually the same (**possibility of reducing the dosage**)
- **Bones and soft tissue** in one image - this enables the user to significantly improve his diagnosis
- **Details of bones and microstructures are very easy to recognise**
- Noise suppression
- **Black mask** (automatic shutters)
- Automatic **removal of grid lines** when using fixed grids

*Exposure with **standard** image processing*



*Exposure with **dicom**PACS®**DX-R** image processing*

Image diagnostic

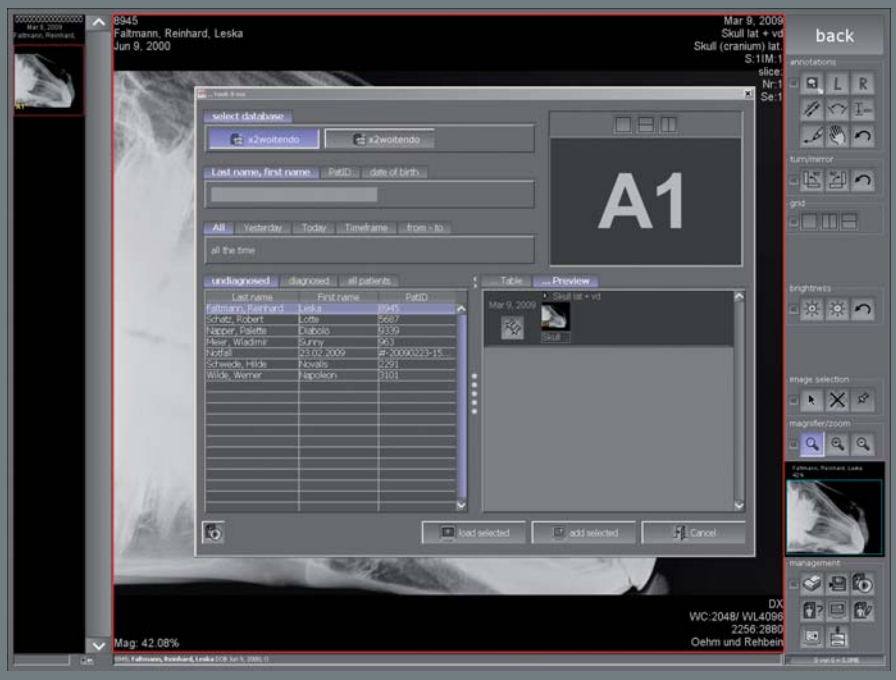
at the highest stage

- Completely integrated ***dicom****PACS*® **Viewer for image diagnosis**, further processing and storage of images in a SQL database incl. image manipulations, export options, layout adjustments, freely configurable user interface and much more

- Stepless **zoom, PAN, magnifyer, ROI, crop, rotate, mirror** etc.
- Insertion of **image annotations**, e.g. free texts, arrows, ellipses etc.
- **Measuring** of distances, angles, areas and density
- Adjustment of window/level options and **gamma correction**, sharpening filters, noise suppression
- Provides many additional tools: **MMP, TPLO, TTA, Buchanan's Vertebral Heart Score, distraction index, HD measurements, integrated capturing of diagnostic reports** etc.
- Printing of images both on Windows printers and laser imagers
- Creation of **DICOM patient CDs** with free **Web viewer**
- **Export of images** to JPEG, TIFF, BMP and DICOM formats
- Easily upgradable to the professional, **integrated image management system** (PACS)

Integrated professional viewer

Completely integrated ***dicom**PACS*® viewer for image diagnosis.



Comprehensive search tools enable the comparison of X-ray examinations of one or more patients.

Useful tools such as the configurable measuring magnifier make diagnosis much easier.

An integrated prosthesis documentation module provides preoperative planning (optional).

MobileView

Browser-based viewer ***dicom****PACS*®***MobileView*** for mobile devices

dicom*PACS*®***MobileView*** is a web-based viewer, that contains all the basic functions for viewing images. The viewing can take place virtually independent from the browser on mobile devices, such as an iPad. ***dicom****PACS*®***MobileView*** offers vets and nursing staff a previously unknown, mobile freedom in the workplace inside and outside of hospitals or practices, with the radiological image material available at all times.

Fields of application of *dicom*PACS®*MobileView*

dicom*PACS*®***MobileView*** can be installed in addition to existing ***dicom****PACS*®***vet*** diagnostic modules (diagnostic workstations). It is irrelevant whether the ***dicom****PACS*®***MobileView*** software is used on a network PC (pure viewing workstation) or/ and on a mobile device.

Worldwide access to all image material is available via a network connection, e.g. VPN access via the internet, of the used mobile device to the central ***dicom****PACS*®***vet*** system in the office or clinic.

Licensing model

dicom*PACS*®***MobileView*** is used on a concurrent user licensing model. This means that the number of concurrent users is pre-defined.

The main advantages below at a glance:

- High flexibility through the use within various internet browsers, including Microsoft Internet Explorer, Mozilla Firefox, Google Chrome, Safari 5, Safari for iPad and Android browser
- Intuitive operation
- Supports the multi-touch operating technology (e.g. zoom in and out with two-fingers)
- Supports full screen mode
- Allows accessing the ***dicom**PACS*®***DX-R*** or ***dicom**PACS*®***vet*** database without any additional modules
- Allows playing series (e.g. ultrasound)
- High loading speed with modern streaming technology
- Uses concurrent user licenses

Cloud-based

Cloud-based telecommunication solution and data archiving for images, documents and diagnostic evaluations for stationary and mobile applications

Even for state-of-the-art practices and hospitals, the rapidly rising data flood of digital images, diagnostic reports and other documents is becoming increasingly challenging. Current legislation demands safe and long-term storage of patient data which generally requires investing in expensive hardware infrastructure as well as maintenance and corresponding staff costs.

To this end, we developed the ***ORCA*** Cloud archiving solution, thus paving the way for cost-effective and safe Cloud-based data archiving in veterinary practices and veterinary clinics. ***ORCA*** offers two application options:

- → ***ORCA Archive***: Safe, long-term archiving of patient data with intelligent usage of internal databases
- → ***ORCA Share***: Communication platform (exchange of images and diagnostic reports) with experts and colleagues or as an easy way to forward image data to animal owner/customer (an alternative to creating patient CDs)

Data is **exclusively** archived on European servers with the relevant safety certificates.

Benefits of Cloud archiving through *ORCA*

Minimal expenditure: *ORCA* does not require investing in expensive infrastructure such as server and data cables.

Scalability: The amount of memory required when using ***ORCA*** is determined by the demand.

Long-term security: *ORCA* archives data on many individual European servers in professional and air-conditioned data centres. Server technology is continuously updated.

Accessibility: *ORCA* stands out by being highly accessible. Since data is saved with multiple redundancy, ***ORCA*** guarantees more continuity than a mere server solution.

Environmentally friendly: *ORCA* is sustainable – through the optimised use of resources and their distribution.

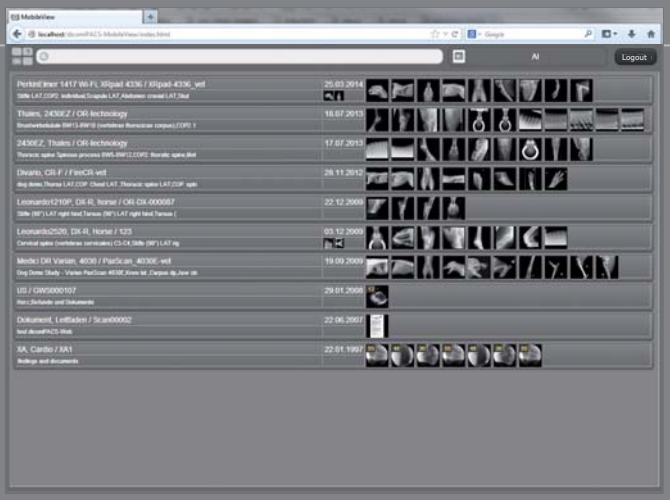
Location-independent: *ORCA* guarantees access to archived patient data - worldwide.

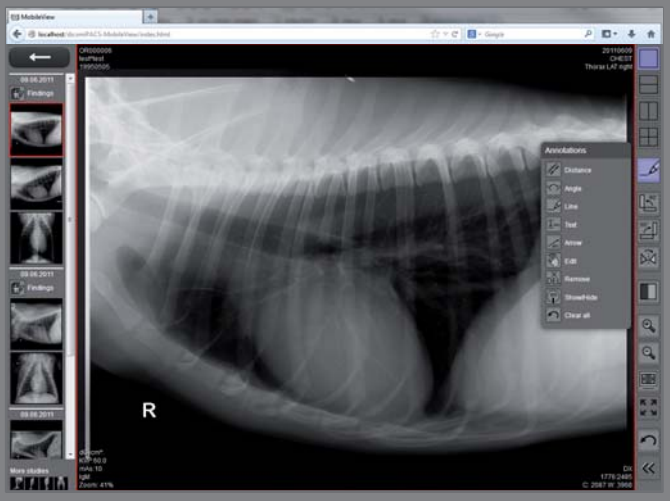
Simplicity: *ORCA* allows easy access to data from any computer – from your place of work, from the comfort of your home or from any other computer or tablet PC.

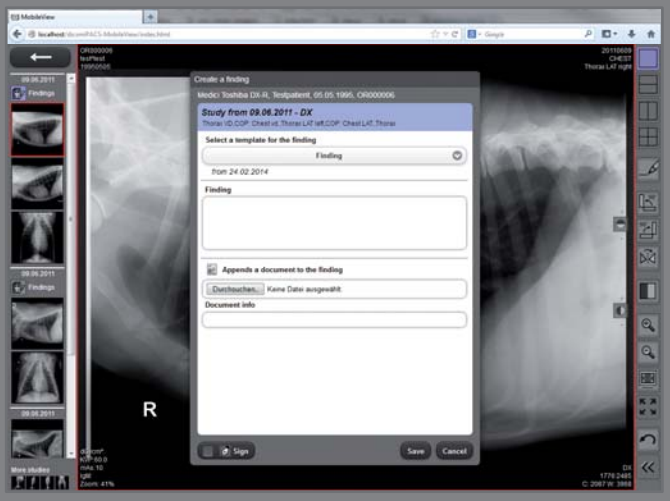
Stress-free: *ORCA* deals with everything – no need to struggle with loose network cables, removed hard drives or software problems.

Web-based viewer

for mobile devices (Android or iPad), PCs, Netbooks







ORCA online viewer's scope of functions:
The web based viewer offers many important functionalities of a professional PACS viewer:

- Draw annotations
- Measurements
- Registration of diagnostic findings
- Attach documents
- Draw lines and arrows (multi-coloured)
- Compare images in different grids
- Flip and rotate images
- Adjust brightness / contrast
- Invert, zoom in / out
- Full screen, fit image
- PAN
- Scroll through image series
- Cine loop for multi frame series and CT/ MRI
- Export images and documents
- Print images and documents

Features

Special functions for digital X-ray imaging

Digital X-ray images have the advantage that exact measurements can be taken at the monitor and the image quality can be improved by a number of manipulations. ***dicom****PACS*®***vet*** offers some special functions.

Modified Maquet Procedure (MMP)
The MMP is a method of measurement for dogs with a cruciate ligament disorder, in which the distance for the placement of the MMP Wedge is determined.

Pre-operative planning with the prosthesis documentation module
This module allows the user to plan and document an operation. After activating this function, the active image is displayed in its original film-identical size. The prosthesis template is displayed in the image as an annotation, or the existing prosthesis template films are overlaid on the monitor.

TTA (Tibial Tuberosity Advancement) measuring tool
The TTA measuring technique is used to apply the translated length measurements at the tuberositas tibiae in dogs.

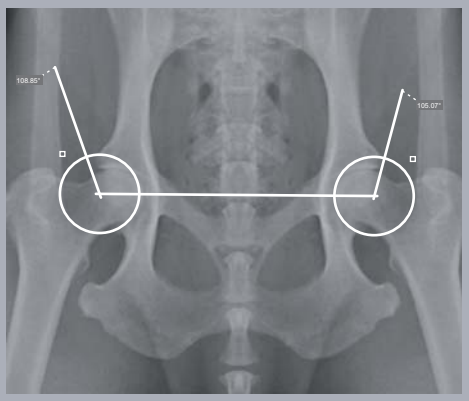
HD measuring technique for dogs
dicom*PACS*®***vet*** provides a special tool to guarantee very fast and reliable determination of the Norberg angle, including documentation. One click suffices to insert all relevant lines and angles into the image, where they can then be positioned as required.

TPLO (Tibial Plateau Leveling Osteotomy) measuring tool
It serves to theoretically optimise the existing slope of the tibial plateau in domestic dogs.

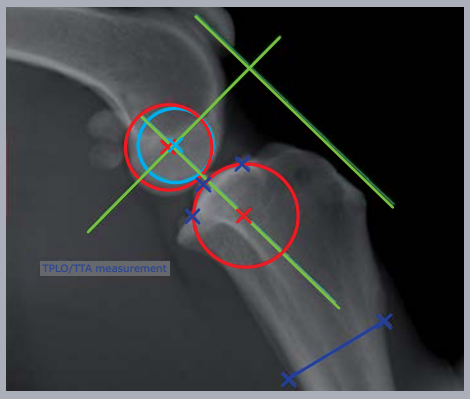
Measuring the distraction index
This measuring tool serves to determine the displacement of the femoral head from the joint socket of the hip joint in dogs.

Buchanan's Vertebral Heart Score
This annotation is a simple and reliable method to determine the size of the heart. It has been designed specifically for cats and dogs. The height and width of the heart are put into relation to the individual animal's vertebral body width. Therefore, racial distinctions are brought to bear on the examinations results.

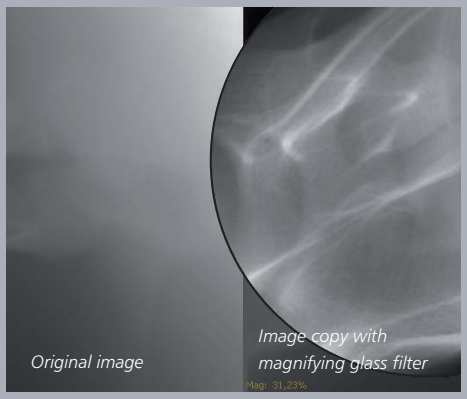
MMP (Modified Maquet Procedure)



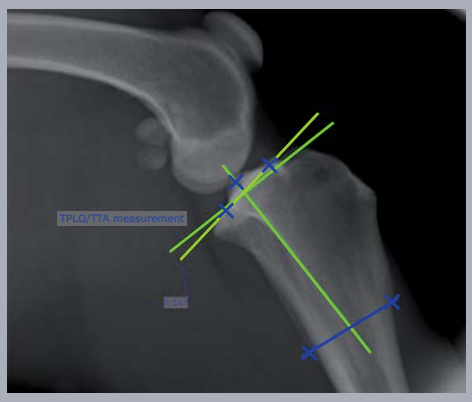
HD measuring technique for dogs



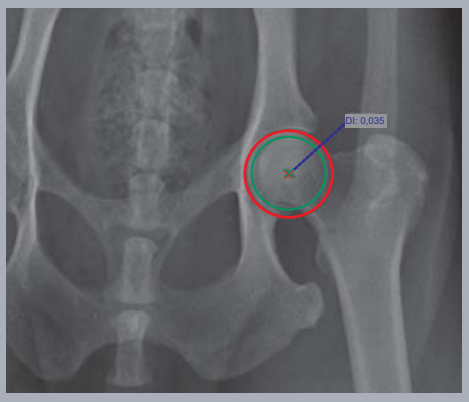
TTA measuring tool



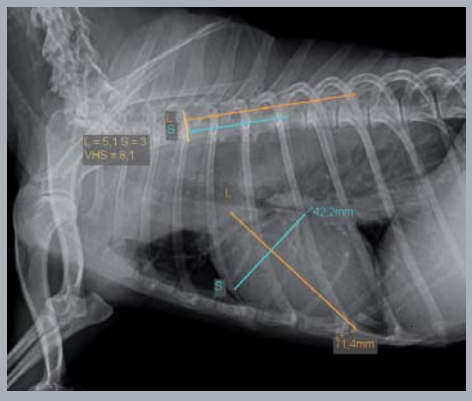
Special filter for the optimization of bones and soft parts



TPLO measuring tool



Measuring the distraction index



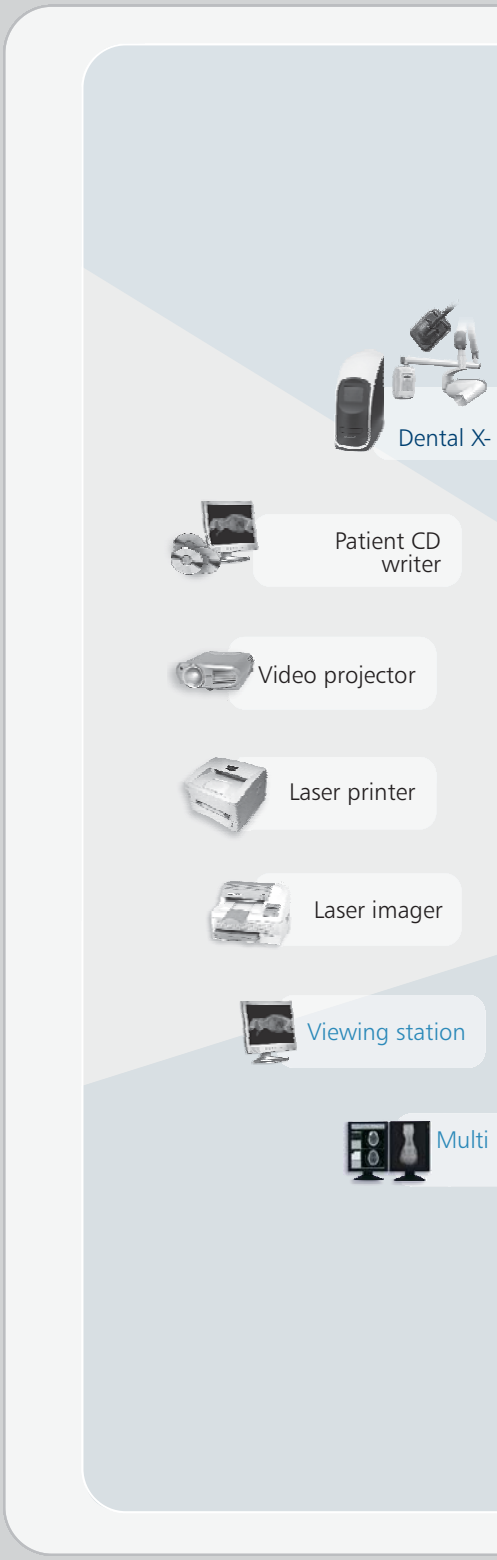
Buchanan's Vertebral Heart Score

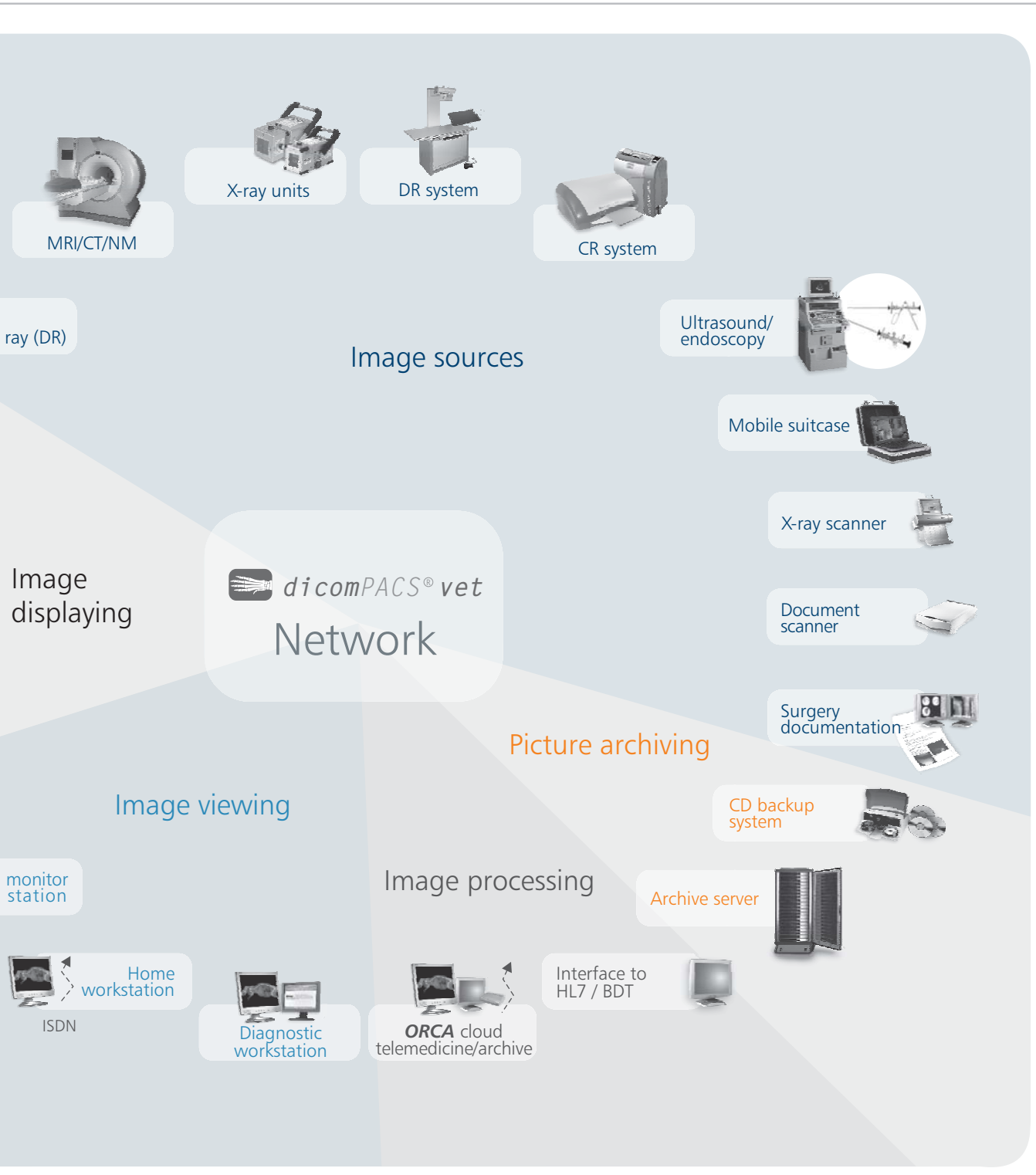
Integrated prosthesis documentation module

Options

Upgrade to an integrated multi-modality PACS

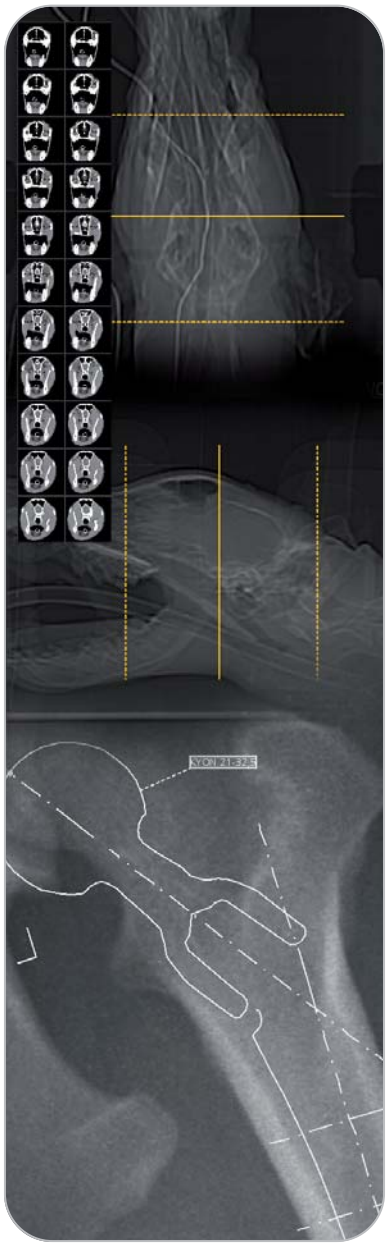
- **DICOM reception** from any DICOM sources, e.g. CT, MRI, scintigraphy, ultrasound etc
- **DICOM distribution** with freely configurable rules
- **DICOM DIR import** for archiving patient CDs by other manufacturers
- **DICOM Query/Retrieve** (SCP/ SCU)
- DICOM Auto **Pre-fetching**
- **DICOM Print Server** to convert DICOM Basic Print into Windows print jobs
- **DICOM Compression** according to freely configurable rules
- DICOM CD/DVD Backup Module, also via robot systems
- Integration of **film and document scanners**
- Digitalisation of standard and non-standard video signals, e.g. **endoscopy, angiography** etc.
- Fully automatic **synchronisation** of two image databases, e.g. laptop and main archive
- **Exchange of images and diagnostic** reports between individual clinics by means of teleradiology
- ***MobileView***: distributes images within a hospital and displays the images in a web browser
- **ORCA - cloud-based solution**: enables worldwide image distribution to referring doctors and patients via the internet




MRI/CT/NM
X-ray units
DR system
CR system
ray (DR)
Image sources
Ultrasound/
endoscopy
Mobile suitcase
X-ray scanner
Image
displaying
dicomPACS® vet
Network
Document
scanner
Surgery
documentation
Picture archiving
Image viewing
CD backup
system
monitor
station
Image processing
Archive server
Home
workstation
ISDN
Diagnostic
workstation
ORCA cloud
telemedicine/archive
Interface to
HL7 / BDT

Options

for upgrading ***dicom***PACS®***DX-R*** X-ray acquisition software



dicomPACS®***DX-R*** may not only be used as a software for the acquisition and processing of X-ray images, but can also be upgraded to a MiniPACS or even to an Enterprise Multi Modality PACS. Thousends of installed workstations in over 70 countries (as of 7/2014) prove that our customers are satisfied.

A single workstation system with installed ***dicom***PACS®***DX-R*** software can be upgraded with the following options (extract):

Further optional viewer functions:

- May be installed on **Windows, Apple MAC and Linux** systems
- Generation of full leg/full spine images **(Image stitching)**
- Preparation of diagnostic reports with integrated images in MS Word
- Connection of of several diagnostic monitors
- Capturing of additional patient and examination data with their freely configurable **statistical analysis**
- Working with **digital prosthesis templates for surgery planning** and documentation - Prosthesis templates can be selected from a set and inserted into the image as annotations
- Additional radiological functions such as Maximum Intensity Projection (**MIP**), Multiplanar Reconstruction (**MPR**), hanging protocols and mammography tools
- Fast and easy preparation of equine pre-purchase examinations with automatically inserted X-ray images (only for Germany) and much more...

Satisfied Customers

Veterinary clinic for small animals, Dr. Johannes Frahm, Germany

In the "Tierärztliche Klinik für Kleintiere" in Wasbek near Neumünster (Germany) Dr. Johannes Frahm and his team are looking after their patients day and night. The most up-to-date technology is used in all the different sectors of the clinic. These include cardiac ultrasound, monitor surveillance during anaesthesia and odontology, an acknowledged additional qualification of veterinarians.

Since summer 2008, X-ray imaging has been completely direct-digital at the Wasbek veterinary clinic. OR Technology, in cooperation with the firm of "Meva bildgebende Systeme" (Meva imaging systems) installed this X-ray system which was also fitted with a flat panel, a 19" touch screen panel PC and the ***dicom**PACS*®***DX-R*** image acquisition and processing software. Archiving, diagnostic evaluation and distribution of images within the clinic is now done by the ***dicom**PACS*®***vet*** image processing system for veterinary medicine.

Dr. Johannes Frahm comments on his reasons for change-over as well as the installation and practical application of the new system:

...Reasons for change-over
"We were looking for a new system that would simplify processes in comparison with the previous system of conventional X-ray imaging. An imaging plate cassette system would not have improved the workflow considerably: The cassette has to be inserted and read out and careful handling is very time-consuming. This brought about the decision to acquire a built-in detector plate to make the image available as fast as possible. Now the image is available within seconds, it can be evaluated immediately and viewed in every treatment room. All the images are automatically archived and can be called up quickly and directly from my "Vetera" patient sytem if they are required again at a later stage. In an archive system with paper envelopes it is often the very thing you are looking for that has gone missing. The more X-ray images you take the more frequent these situations are. Now all this won't happen any more.
The upgrade made it possible to integrate the existing high-value X-ray unit of the firm of Sedecal into the new direct-digital system. Modifications were not necessary since the raster drawer was simply replaced by the built-in detector."

...installation and remote maintenance
"Installation hardly interfered with the running of the practice. If there was an emergency case in between, we could quickly revert to analog X-ray imaging, the staff of the installing firms being most cooperative. Minor initial problems were quickly eliminated by OR Technology via remote maintenance."

...the *dicom*PACS®*DX-R* image acquisition software
"I am very happy with the workflow in image generation. A good image is provided very quickly and transfer to other monitors is wonderfully easy and just requires a single click.The consistent image quality also contributes to making procedures faster and easier. If difficult X-ray images have to be taken, for instance of a bird, the quality of the image can be improved very quickly with a few simple adjustments. The integrated body parts for small animals, with numerous adjustments are most helpful - this type of programmable organ selection leaves nothing to be desired. Moreover, diagnostic image evaluation is designed to be very user-friendly."


Dr. vet. Johannes Frahm

You can find more extensive references here
www.or-technology.com --> Veterinary medicine --> References

Version 003_07_2014

Vet portfolio

Overview - products of OR Technology

Medici DR Systems *vet*

DR retrofits - digital upgrade set for existing X-ray systems incl. ***dicom**PACS*® ***DX-R*** acquisition software, available for stationary and mobile X-ray machines

Leonardo DR Systems *vet*

DR suitcases - compact suitcase solutions for portable X-ray incl. ***dicom**PACS*® ***DX-R*** acquisition software

Amadeo X-ray Systems *vet*

Complete digital X-ray systems (incl. stand, Bucky, generator, flat panel etc. and incl. ***dicom**PACS*® ***DX-R*** acquisition software), mobile X-ray solutions as well as portable X-ray solutions

Divario CR Systems *vet*

CR solutions - CR systems for digital X-ray with cassettes incl. ***dicom**PACS*® ***DX-R*** acquisition software

X-ray Accessories

Accessories for X-ray
e.g. radiation protection walls, gloves

*dicom**PACS*® *vet*

Image management (PACS) - comprises acquisition, processing, diagnosis, transfer and archiving of image material

ORCA

Cloud based archive solution - safe, long-term archiving of patient data with intelligent usage of internal databases communication platform with colleagues and specialists and transfer of image data to patients

*dicom**PACS*® ***DX-R***
X-ray Acquisition Software

X-ray acquisition software [only for OEMs] - acquisition and diagnostic software for X-ray images from flat panels or CR systems

OR Technology
Digital X-ray and
Imaging Solutions

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