dicomPACS®

Software for intelligent image management

in the modern medical practice

CE 0482 FDA 510(k) application has been cleared by the FDA No. K070618 Health Canada MDSAP Certification QMS ISO13485

OR Technology

Digital

dicomPACS®

images and documents

for private practices and hospitals

dicomPACS® is an up-to-date and sophisticated **high tech solution for intelligent image management** both for private practices and hospitals. All images created by digital X-ray, CT, MRI and ultrasound units as well as any type of documents such as doctors' letters, diagnostic reports, records of healing processes and faxes may be stored in the digital patient file with the help of *dicomPACS*® and are accessible immediately with one mouse click.

Our carefully thought out archive and backup solutions guarantee **fast access to all data while observing maximum security standards in accordance with the German Medical Devices Act**. In addition, the software can be integrated easily with all common administration systems.

dicomPACS® software includes **acquisition, processing, transfer and archiving of image material**. Since the software was designed and developed in close cooperation with practicing doctors, you are looking at a well tested and easy to operate instrument for daily diagnosis.

Further information about *dicomPACS*® is available here:

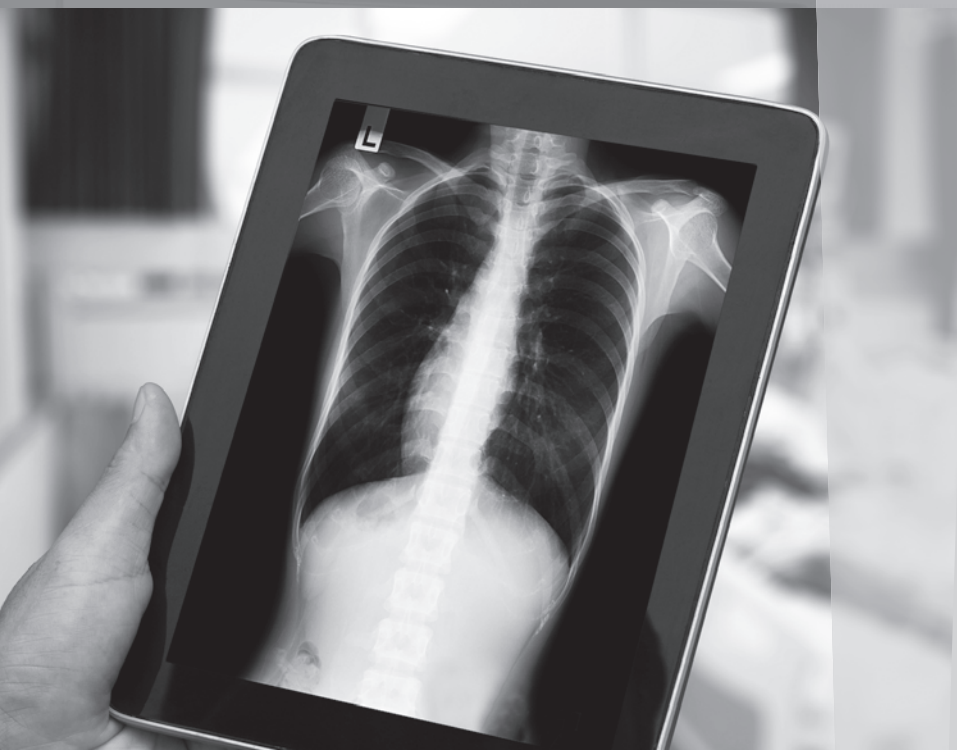
OR Technology is your partner in digital radiography for innovative X-ray systems and customised solutions for ambulatory and inpatient care – **tried and trusted worldwide**

Benefits

of ***dicom****PACS*® at one glance

- **Full diagnostic software** for all workstations in your practice (no 'light' versions)
- User friendly and clearly arranged structure, **minimal training requirements** and short familiarisation period
- **Individual adjustment of the user interface** to your field of specialisation and individual requirements
- **Flexible allocation of shortcut keys** for many functions to allow fast work without a mouse
- **Parallel processing** (e.g. option to continue working while burning a CD)
- **Permanent online availability** of all images and data in the network – no need to store old images on CDs
- "Perfect memory" – re-opening of images with all previous markings and settings incl. zoom and orientation
- **Parallel diagnostic evaluation** of several patients made possible by opening any number of programme windows without loss of speed - depending on the size of the working memory
- The possibility of diagnosis supported by an **automatic, AI-assisted thorax screening** by a qualified third-party provider is also included in the software (optional)
- **Import of any external documents** such as doctors' letters, faxes or X-ray images – no additional module required
- Installation with **Windows, UNIX, LINUX or Apple Macintosh**
- **Optimal data security**, speed and compatibility by using standardised SQL database technology
- All images and documents are filed in the international **DICOM standard** at all times

For more detailed information
please see: **www.or-technology.com**



With **several thousand installed image processing systems** nationally and internationally, the system has consistently proved itself (as of 11/2022)

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please see: **www.or-technology.com**

MRI/CT

DR system

Patient CD burner

CR system

Video projector

Ultrasound

Image sources

Document scanner

Laser printer

Image output

Operation documentation

Laser imager

dicomPACS®
NETWORK

X-ray scanner

Diagnostic workstation

Backup server

Image viewing

Image archiving

Viewing station

Image processing

DICOM Cloud

ORCA® Archive

Multimonitor workstation

Telemedicine

Home workstation

Cloud sharing

Cloud solution ORCA®

Connectivity

The diversity of ***dicom***PACS®

Structure

Professional workflow with ***dicom**PACS*®

dicomPACS® encompasses the **acquisition, processing, communication and archiving of image material**.

Thanks to its versatility and many specialised features, *dicomPACS*® allows you to customise each workstation perfectly to your individual needs. Our software has been conceived and developed in close consultation with specialist doctors, which enables us to offer you a **versatile and easy to use tool for daily diagnosis**. Its success up to now has given us something to be proud of.

With several thousand workstations installed nationally and abroad, our system has proved itself over and over and has shown every day what it is capable of doing.

dicomPACS® masters simple image processing requirements as competently as it does those of complex radiological networks.

Thanks to its modular design, a *dicomPACS*® network can grow as needed. It can be expanded and amended to incorporate special features such as **telemedicine, pre-operative planning or 3D reconstruction** into your system.

For more detailed information
please see: **www.or-technology.com**

CR

Divario CR Systems

AGFA

Carestream HEALTH

FUJIFILM

KONICA MINOLTA

Make the switch

Easy transition from conventional radiography to digital X-ray technology with CR systems – **Digital radiography using cassettes with imaging plates**

Do you want to digitise your existing X-ray system but do not want to change the workflow?

A Computed Radiography (CR) system does not change the process of conventional X-ray imaging substantially. Instead of the normal film cassette you use an imaging plate cassette that is identical in shape and size. After the usual X-ray process this cassette is inserted into the CR system and read within a few seconds. The resulting image data is stored automatically and can be viewed on your diagnostic evaluation monitor in optimal quality.

CR technology includes all the advantages of up-to-date image processing technologies:

Increased security
X-ray exposures are always optimally processed – irrespective of anatomic region.

Low radiation dose
The higher sensitivity of imaging plates results a distinctly lower exposure to X-ray radiation than conventional technologies.

Clear diagnosis
X-ray imaging proceeds as usual. The X-ray images, however, are more accurate, richer in contrast and can be optimised and post-processed on the computer.

For more detailed information
please see: **www.or-technology.com**

DR

- ATLAIM
- CareRay
- DR TECH
- HAMAMATSU
- 奕瑞影像 iRay Technology
- Kodak | Dental Systems
- KONICA MINOLTA
- LG
- 上海品臻影像科技有限公司 Shanghai PZMedical Technology Co., Ltd.
- Rayence
- THALES
- TOSHIBA
- VAREX IMAGING
- VIEWORKS

Make the switch

High-resolution digital X-ray images with reduced radiation exposure – **Digital X-ray with DR systems**

Not interested in a new X-ray machine at the moment? No problem! Your conventional X-ray machine can easily be transitioned to digital by the addition of a flat panel detector (DR) in combination with a medical display monitor. While continuing to use your existing radiography system, you can reap the benefits of high-quality digital X-ray images.

Flat panel detectors convert X-rays directly or indirectly into a digital image signal. The in-between step to read the imaging plate as well as cassette handling is dispensed with. After about 5 seconds the X-ray image is already available for diagnosis. DR systems stand out through **very fast image creation** and **excellent image detail quality**.

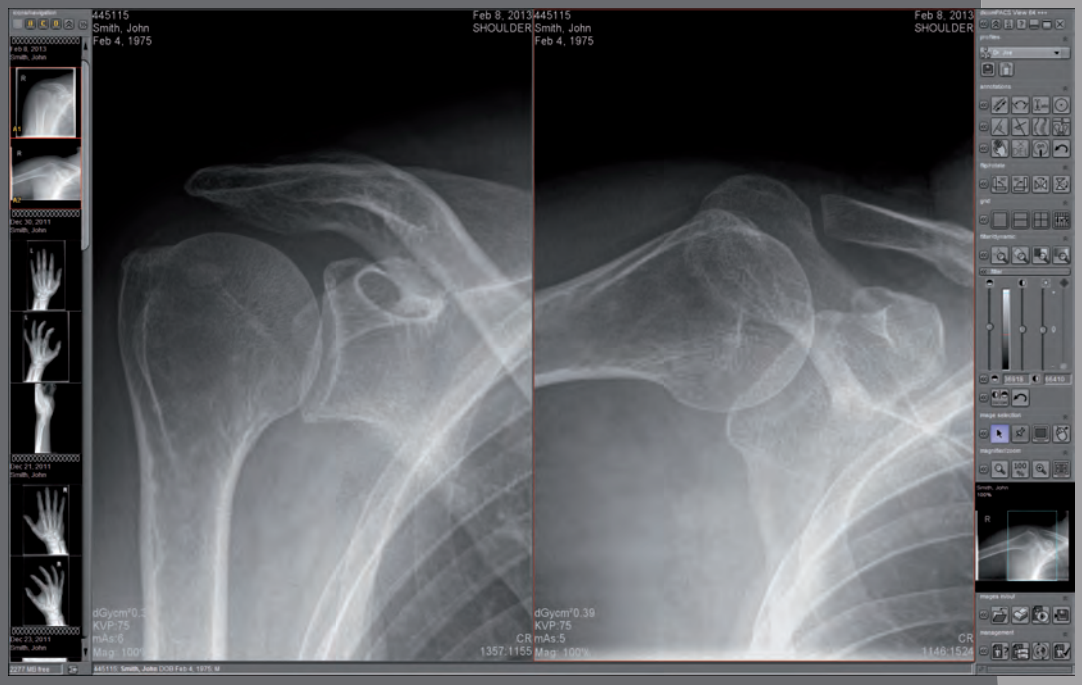
In addition to the advantages of the CR system, there will be further benefits for you:

Flexibility
X-ray images have a very high dynamic range (simultaneous display of soft tissue and bones).

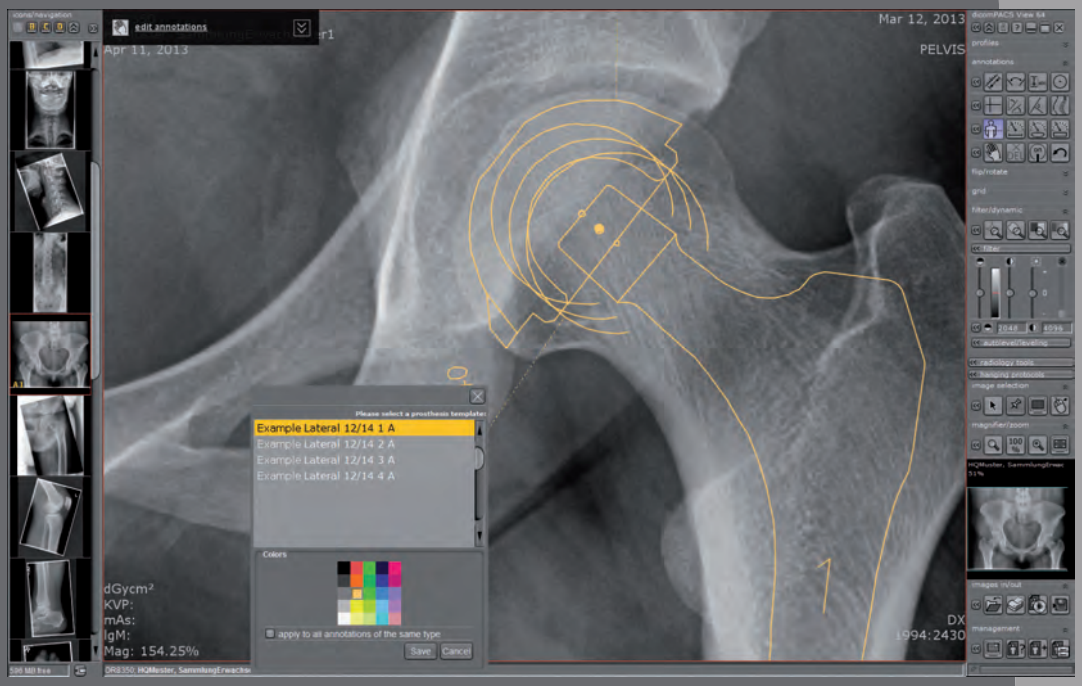
Space saving
The direct radiography system can be combined with existing X-ray units.

Low maintenance
System and function stability is extremely high since there are no mechanical parts like rollers, films etc. The system is virtually maintenance free.

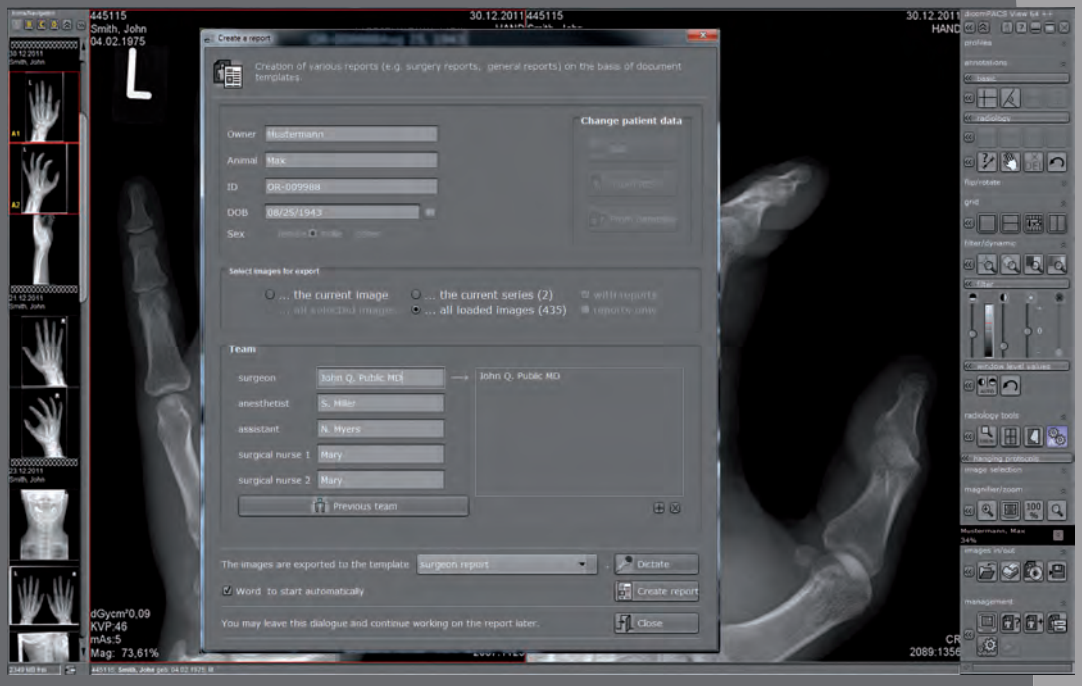
For more detailed information
please see: **www.or-technology.com**



Viewer with modular structure and individual adaptation of the user interface to your specialty and needs



Large scope of services with many modules, e.g. prosthesis documentation module for professional OR planning (optional)



Statistical and evaluation options for the entire database (optional), report creation and much more

Value

Professional operating concept of ***dicom**PACS*® leaves nothing to be desired

dicomPACS® is a so-called „Picture Archiving and Communication System“, acronym: PACS, and it performs many different, at times highly complex tasks. **It connects, controls and administrates everything related to your images: from the images acquisition and the compilation of diagnostic reports to the archiving and transfer of image data.**

It ensures that the images can be distributed quickly and without complications and viewed e.g. via the web server. In addition, the system is extremely flexible and open for many applications.

The operational idea is based on an interface that can be freely configured down to the smallest detail. **Depending on your needs and demands** – based on your field, specialisation, or specific use of the system – **you can arrange your PACS software user interface yourself.**

Customising fast access to the most important tools is child's play – just click on the selection menu. The selection will remain in place when you re-start your PC.

For more detailed information
please see: **www.or-technology.com**

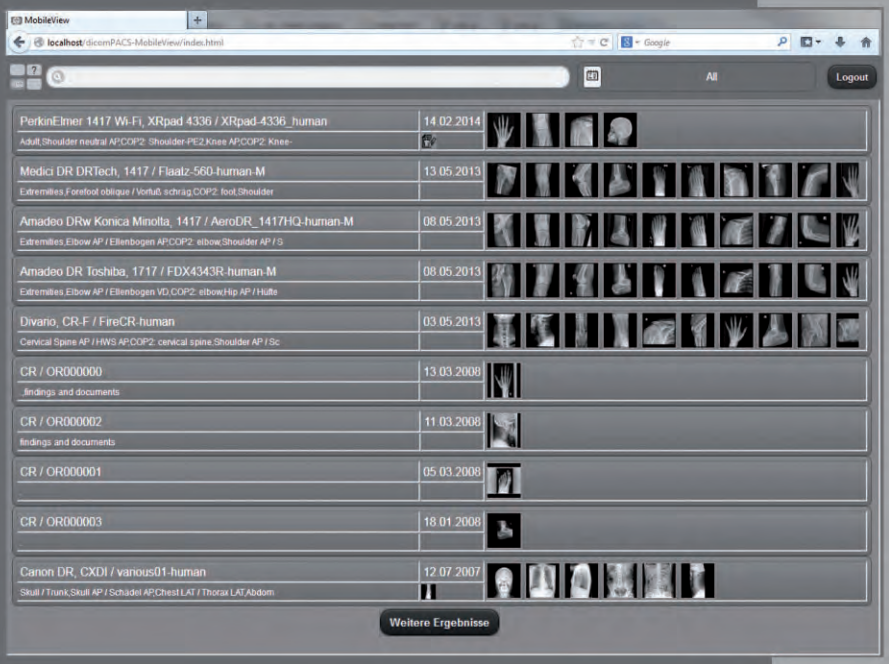

Operation record
Smith, John, born on 1 November 1970
Operating surgeon: Dr. G. Tayra
Anaesthetist: Dr. Williams
Diagnosis:
Irritable synovitis, right knee. Osteochondritis, talus 3rd degree, lateral medial osteochondritis dissecans
Operation: Outpatient arthroscopy right knee, 23 January 1995.
Local anaesthesia, patient in supine position, knee 90° flexed.
Tourniquet left thigh, normal anatomy.
Upper recesses and femoropatellar joint:
Retropatellar
Intercondylar region

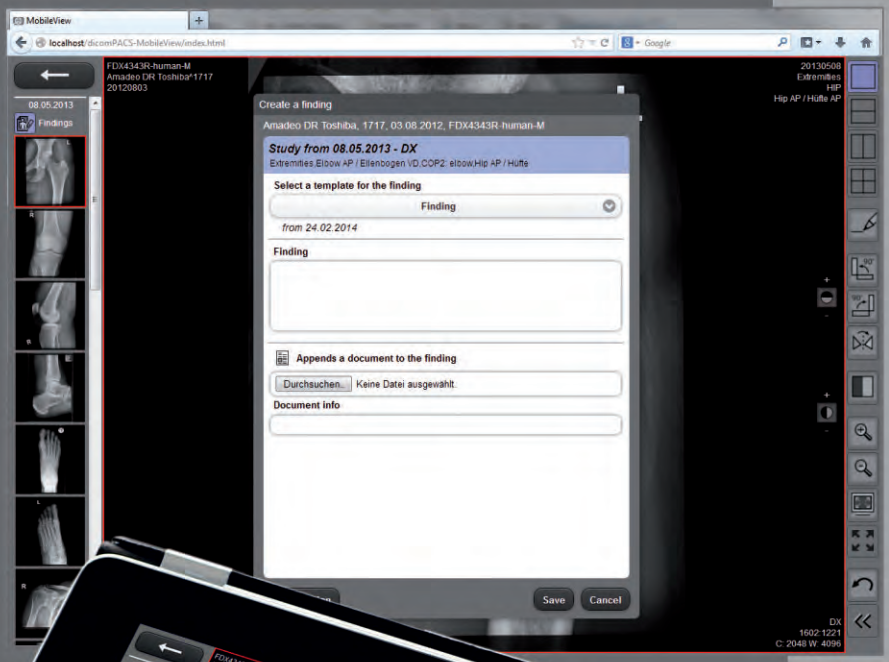
Value

Features of the image management solution ***dicom****PACS*® (optional)

- **Prosthesis documentation** – enables the user to plan operations with digital prosthesis templates by one or more manufacturers
- **Report Module** – for easy preparation of different reports (e.g. operation reports, ultrasound reports etc.) incl. Word macros with images and a digital dictation system
- **Statistics Module** – enables freely configurable analysis of the complete database
- **Video Modules** – enables standard and non-standard video signals to be recorded as single images and video sequences
- The possibility of diagnosis supported by an **automatic, AI-assisted thorax screening** by a qualified third-party provider is also included in the software
- ***dicom****PACS*®***MobileView*** – distributes images within a hospital and displays the images in a web browser
- ***ORCA***® – **Intelligent cloud solution**: enables worldwide image distribution to referring doctors and patients via the internet
- **Processing of CT and MRI series** – *dicomPACS*® includes professional tools such as MPR and MIP to evaluate cross section series
- **Upper Cervical (NUCCA) Chiropractic tool set** – Tools for accurate diagnosis and planning of further chiropractic treatment
- **Hanging protocols**
- **Special function for mammography analysis**
- **Integration of speech processing systems**
- **Telemedicine**
- **Special solution for multiple archives**

For more detailed information
please see: **www.or-technology.com**





The main advantages at a glance:

- The web-based viewer offers an important range of functions 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
  - Adjust brightness / contrast
  - 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
- 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 *dicomPACS*® database without any additional modules
- Allows playing series (e.g. ultrasound)
- High loading speed with modern streaming technology

Further information about ***dicom**PACS*®***MobileView*** is available here:

Modules & Features

Web-based viewer solution ***dicom**PACS®**MobileView*** for mobile or stationary devices [optional]

The web-based viewer *dicomPACS®MobileView* counts among the many extension modules of *dicomPACS®* diagnostic software. **Virtually browser independent, it allows the viewing of image material on mobile devices also outside a clinic or a practice.** The doctor or nursing staff can access all image material from the *dicomPACS®* system worldwide via a network connection.

In addition to mere diagnostic evaluation of images, the *dicomPACS®MobileView* viewer **allows diagnostic reports to be captured and exported**. Documents may be attached and exchanged. All diagnostic reports of a patient are always displayed. Individual diagnostic reports of a patient may be selected for exporting and formatted.

There are many applications. On-call hospital doctors can promptly make a first diagnostic thanks to *dicomPACS®MobileView*. This saves the patient a lot of time and additional visits. But also during a ward round, further treatment can be discussed together with the patient or colleagues directly at the bedside using a mobile device.

dicomPACS®MobileView can be installed in addition to existing *dicomPACS®* diagnostic modules (diagnostic workstations). It is irrelevant whether the *dicomPACS®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 *dicomPACS®* system in the office or clinic.

For more detailed information
please see: **www.or-technology.com**

Benefits of Cloud archiving with *ORCA*®

Minimal expenditure: *ORCA*® does not require investing in expensive infrastructure such as servers 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.

Modules & Features

ORCA® – Cloud-based telecommunication solution and data archiving for images, documents and diagnostic evaluations for stationary and mobile applications [optional]

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 practices and 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 colleagues and specialists or as an easy way to forward image data to patients (an alternative to creating patient CDs)

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

For more detailed information
please see: **www.or-technology.com**

Standard Chiropractic Tools
The Chiro Tools offer great possibilities for diagnosing accurately as well as for planning further treatment.

According to the tool used, automated center lines and points, defined curves, angle measurements etc. are generated after the manual selection of the points of interest.


Doktor Jeff Scholten

Dr. Jeff Scholten is a former president of the ICA Council on Upper Cervical Care and the clinic director and owner of The Vital Posture™ Clinic in Calgary, Canada. He was recognized as the Upper Cervical Chiropractor of the Year in 2015. In addition to other responsibilities he is President of the National Upper Cervical Chiropractic Association (NUCCA).

He works with the *dicomPACS*® Upper Cervical Chiropractic Tools developed by OR Technology:

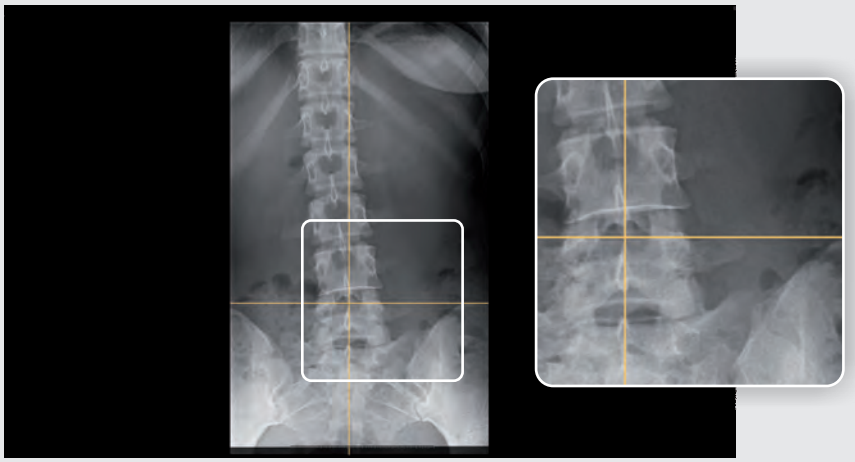
„I was very impressed that the software has evolved into a complete analysis tool for ALL diagnostic image requirements, including MRI and CT images. I appreciate the simplicity of working with the tools integrated into the standard image processing software to analyse and calculate the adjustment to be made, which increases the precision of the therapeutic measures."

Modules & Features

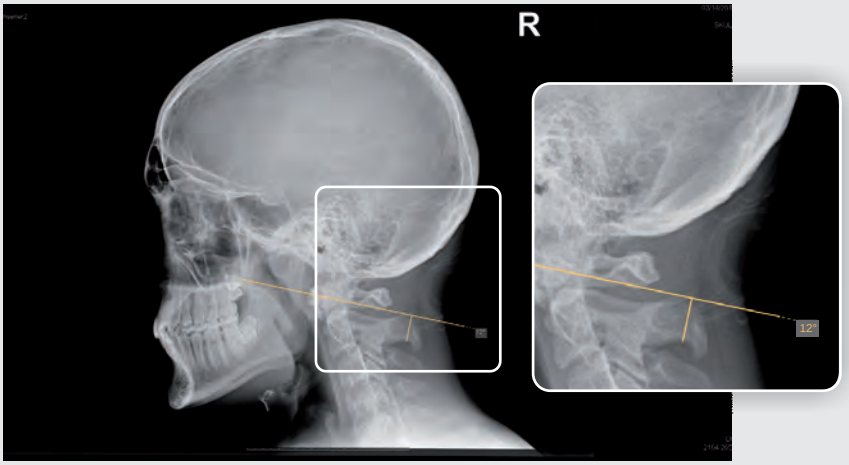
*dicom*PACS® Standard Chriopractic Tool Set – Diagnostic tools for optimal treatment [optional]

The Chiro Tools have been developed in cooperation with leading experts from the USA and Canada and offer great possibilities for diagnosing accurately as well as for planning further treatment.

Axis line
The tool creates a vertical or horizontal axis, depending on the direction in which the cursor is moved.



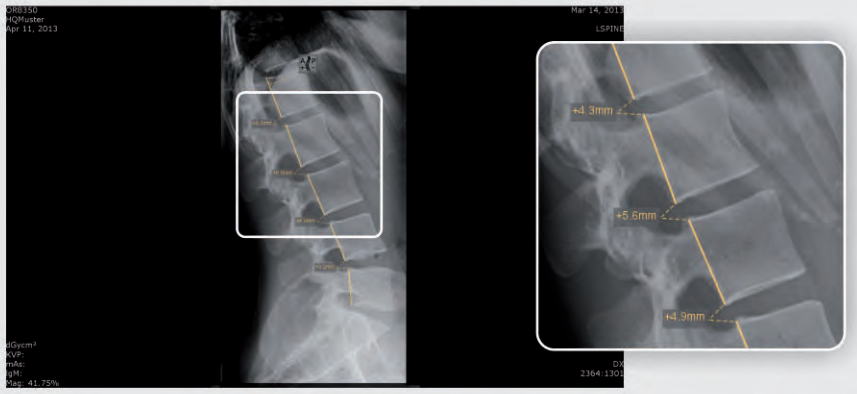
Orthogonal line
This tool is used to mark perpendicular lines on existing or yet to be drawn baselines. The divergence of the base line from the closer axis (horizontal or vertical) is displayed by default.



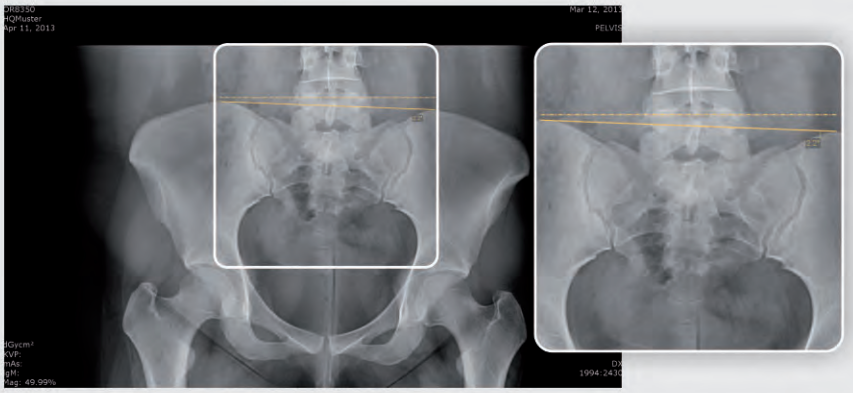
For more detailed information please see: **www.or-technology.com**

Examples
*dicom*PACS® Standard Chiropractic Tools

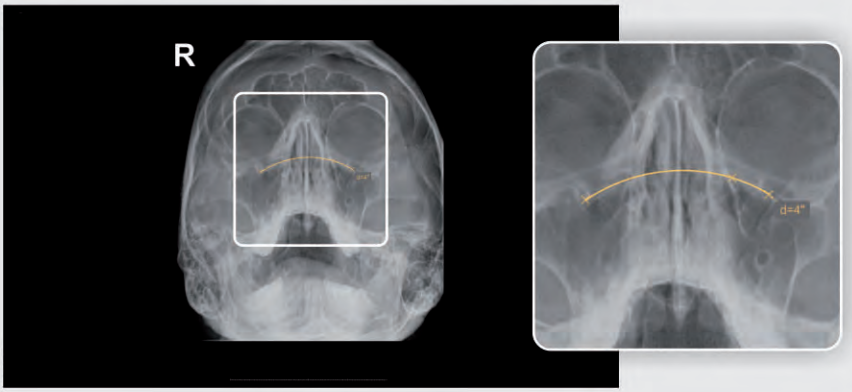
George's line
This tool is used to draw lines on each vertebra along the spine in a lateral view and to detect their distances (in mm or inch).



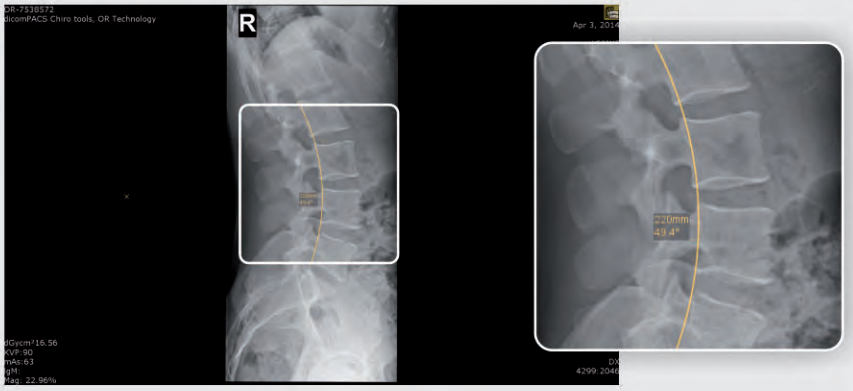
Horizontal or vertical level
This tool calculates the horizontal or vertical level. By default the nearer axis is used for calculation.



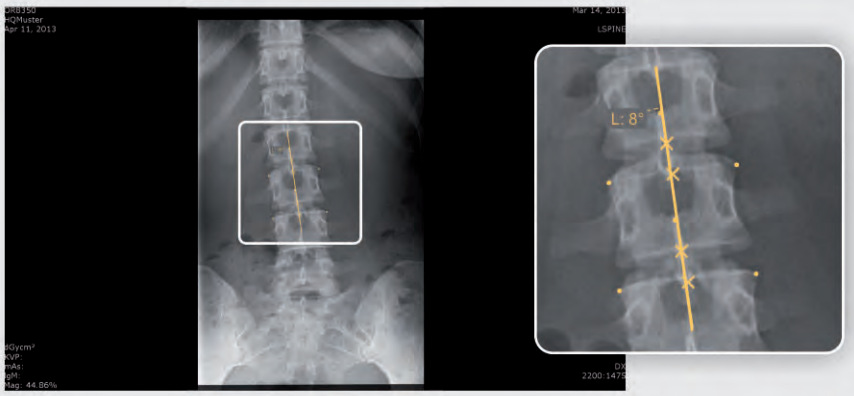
Circumscale
An arc is drawn through three defining points and the diameter of the corresponding circle is displayed by default.



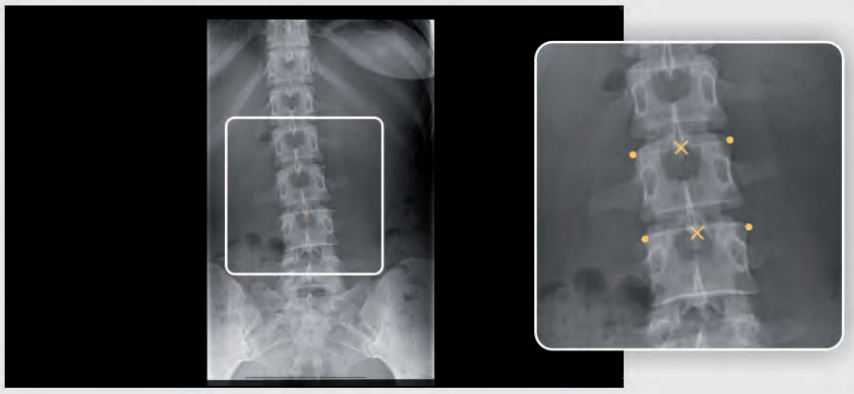
Spinal curve
This tool is used to draw an arc in the lateral view of the spine. The annotation uses a fixed radius set by default to 220 mm. Radius or degree can be adjusted.



Vertebrae line
The vertebrae line is generated from the center points of 2x3 manually set points along the spinal canal and and displays the side of laterality and the lateral divergence in degrees.

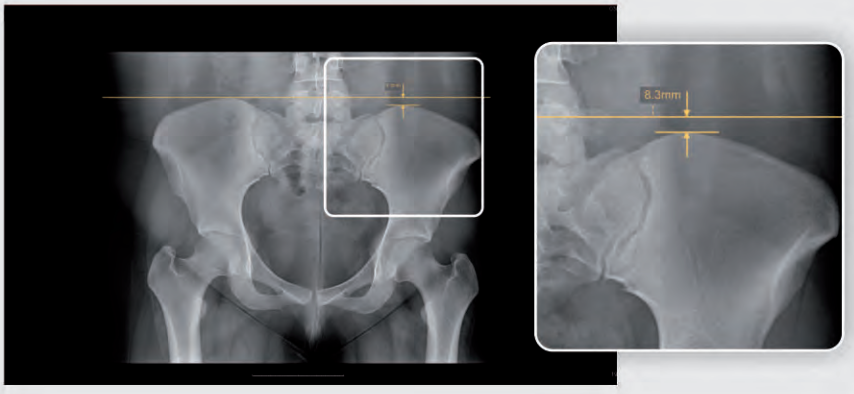


Center point
This tool calculates the center point between two points.



Distance comparison
This tool compares the distances between three set points (between point 1 and point 2 and between point 2 and point 3) and shows the longer distance.

Pelvic obliquity
This tool is a measurement that is calculated automatically after two simple clicks which generate two horizontal lines showing the distance between these two axes.



For more detailed information
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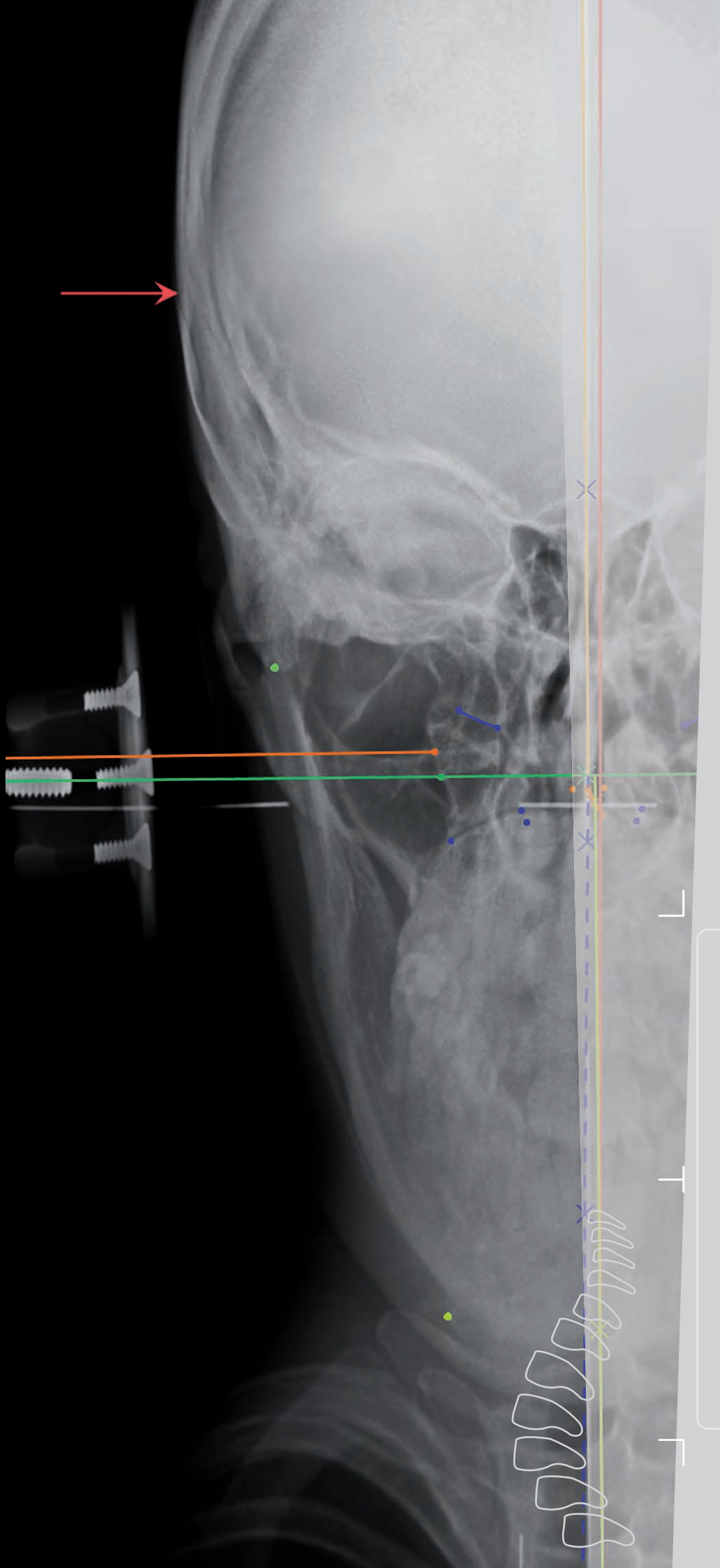


Upper Cervical Chiropractic (NUCCA)

The Upper Cervical Chiropractic tool set has been created in cooperation with leading experts from the US and Canada. It offers a variety of ways to reach a fast and accurate diagnosis. Our NUCCA tools offer all the advantages of digital working and provide you the security of your usual work routine.

Modules & Features

*dicom*PACS® Diagnostic Tools for Upper Cervical Chiropractic (NUCCA) [optional]

On the following pages we give you an overview of our NUCCA tools. In addition, we will exemplarily show you how single tools work.

NUCCA procedure – main tools and measurements:

Nasium View	Vertex View
- Atlas Plane Line	- Odontoid Center
- Atlas Check Line	- C2 Spinous Tools (Axial Canal and Vertex Square)
- Squamous Sutures	- Vertex Atlas Line
- Central Skull Line	- Vertex Skull Line
- Plane Line	- Vertex Check Lines
- Condylar Circle & Axial Circle	
- Center of Odontoid	
- Intermastoid Line	
- C2 Spinous Tool	
- Inferior Point Tool	
- Four Elements and Listing Information	

Other measurements and tools:

- Interactive templates: Cephalometer, Circumscale, Grid, Relatoscope
- A Raw Data Box with all measured values is visible on each view
- Laterality, Skull Tippage, APL/ACL, Body Center, IML/CSL, Lower Angle, Angular Rotation, Atlas Rotation …
- Tools and measurements for the Lateral View: S-Line, Hard Palate Line, Contacts

General features:

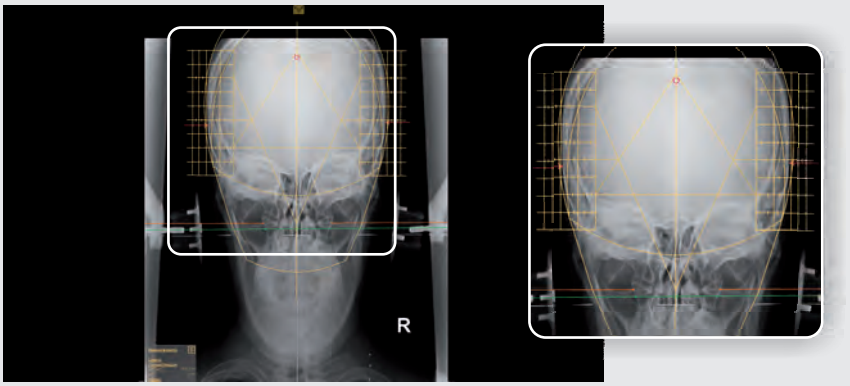
- Progress bar for each view
- Points, lines, values and templates are editable and configurable
- Colours and points are customizable
- A little help menu is available for every single tool. It gives hints for keyboard shortcuts and supports you in how to use every tool step by step.

Examples

*dicom*PACS® Diagnostic Tools for Upper Cervical Chiropractic

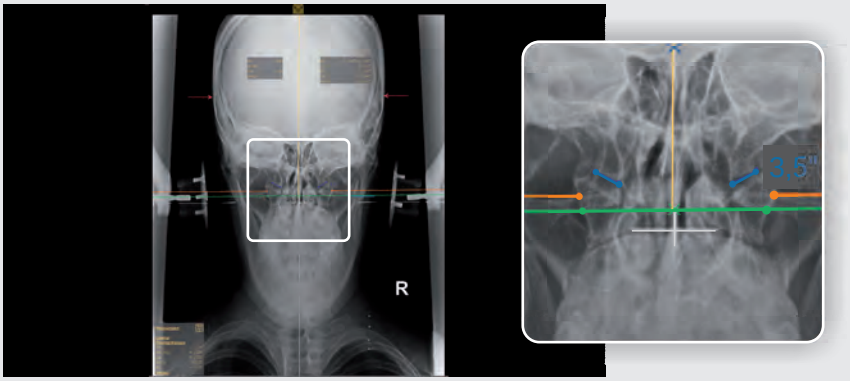
Cephalometer and Central Skull Line

Use the Cephalometer to draw the Central Skull Line. Laterality and Skull Tippage will be calculated automatically. The four elements and listing information will be inserted.



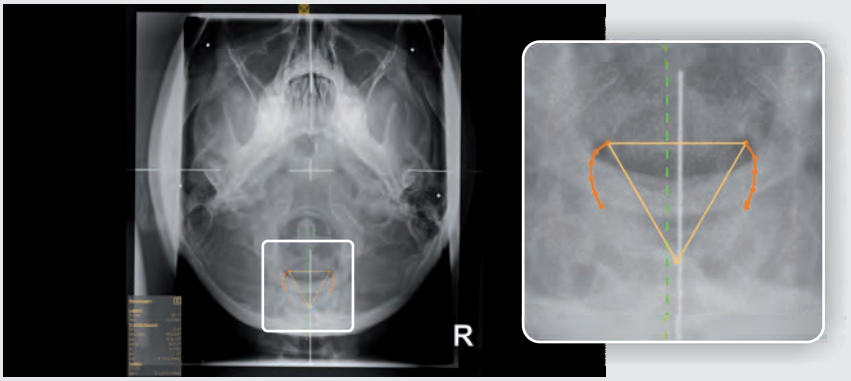
Condylar Circle

Choose between the three point and four point Condylar Circle. The middle point will be shown. You can set the calculated measurement manually to the value you prefer. The Relatoscope will use the shown value.



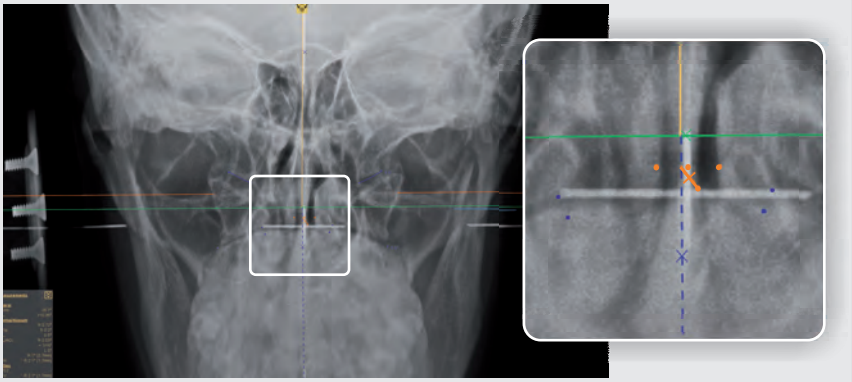
Odontoid Center and Vertex Square

Mark the lateral aspects of the dens and the Odontoid Center Line will be inserted. After marking the C2 canal, the Vertex Square will be inserted and the Spinous value will be calculated depending on the Condylar Circle.

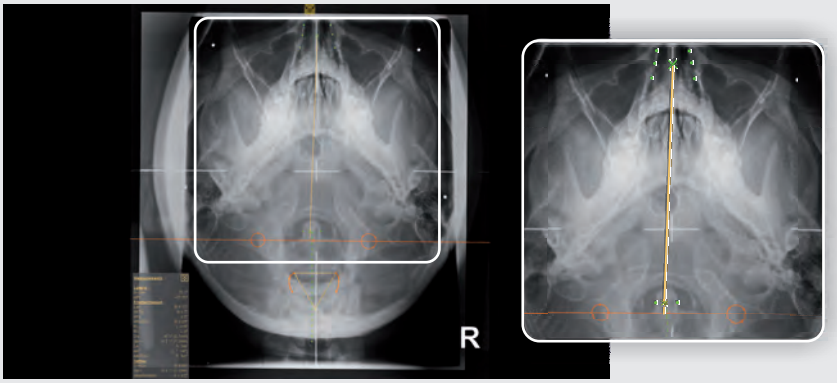


Odontoid, Spinous and Relatoscope

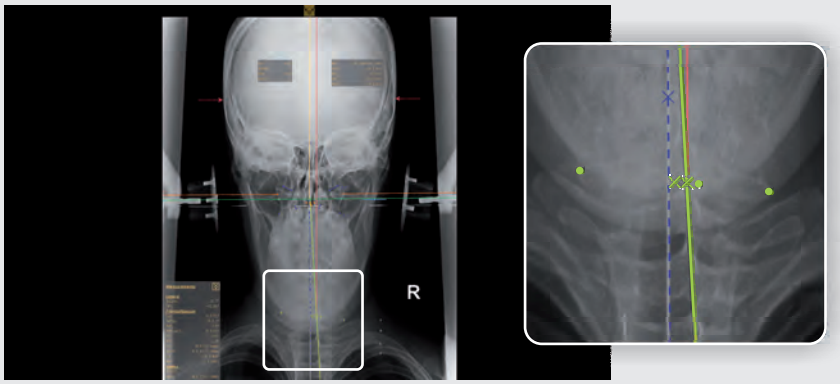
Use the Relatoscope to apply the Spinous value from Vertex to Nasium View. Mark the lateral aspects of the dens and the (corrected) Odontoid will be inserted automatically.



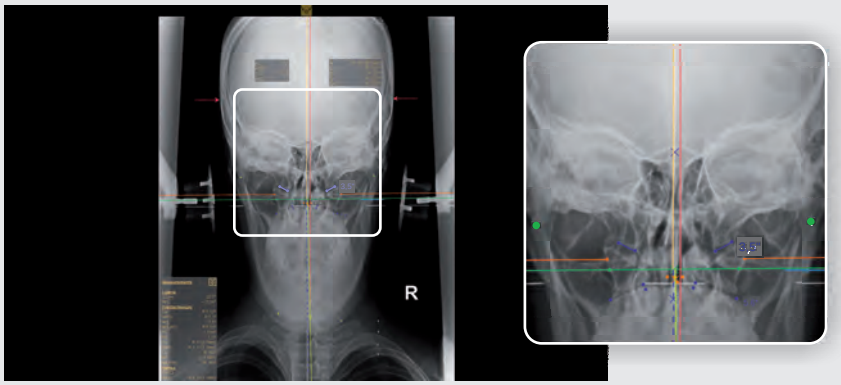
Vertex Skull Line
After marking the nasal structures, click the Inferior Point button. The point will be set automatically depending on the Listing Information value and the Vertex Skull Line will be inserted. Atlas Rotation will be calculated.



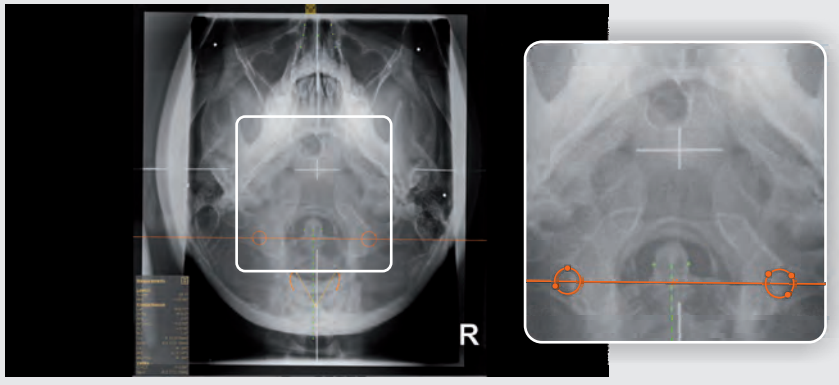
Lower Angle and Angular Rotation
The Lower Angle and Angular Rotation will be calculated automatically after setting the Inferior Point. You can also set a corrected Inferior Point.

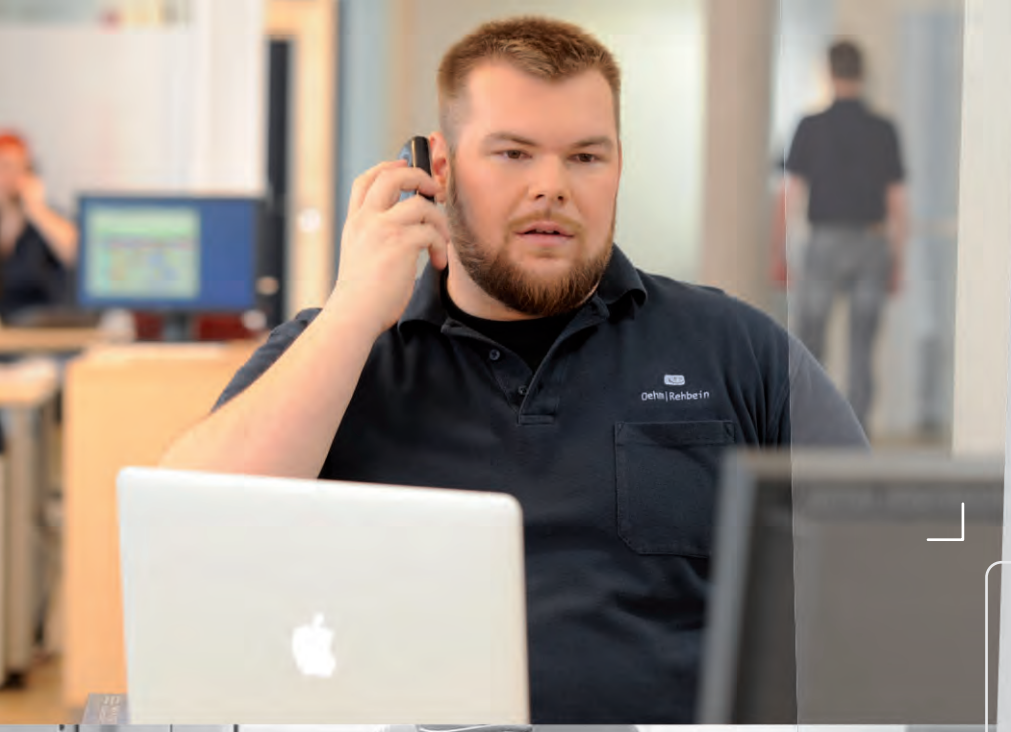


Intermastoid Line
Mark the inferior tips of the mastoid processes. The measured value, its orthogonal divergence from the Central Skull Line, will also appear in the raw data box.



Vertex Atlas Line
After marking the transverse foramina of the atlas with three points each, the Vertex Atlas Line will be drawn and the convergence of C1 and C2 is shown in the raw data box.





*Overview of the countries with **dicom**PACS® systems (as at 3/2019)*

Our vision: OR Technology stands for quality worldwide.

Our vision is based on the following principles:

- The highest criterion of our quality policy is the satisfaction of all our customers. The customer alone determines what quality is.
- For us, quality means meeting and, if possible, exceeding both the expressed and the unspoken customer expectations of our products and services.
- All processes are transparent and clearly defined. The quality management system plays a central role in our daily work and is consistently applied. We comply with all regulatory requirements.
- The competence and motivation of all our employees is fundamental to the success of our company.

Network

Global Competence for all products and services

Our users come from all areas of medicine, particularly radiology, cardiology, orthopaedics and surgery. All of them work with our *dicomPACS*® image processing system and they are very enthusiastic about its multi-faceted services.

However, it is not only the product that will satisfy you, but also the cooperation with a team that strives to treat their clients as partners. This attitude is necessary because **we can only find the perfect solution together.**

It is important that our clients can be sure that we will always do our best; but this works only if we approach even the smallest task with the highest possible concentration, while being as highly motivated as ever.

OR Technology has set up a global competence network of local partners who will provide quick assistance should any problems occur after installation. **You, as our valued customer, are investing in a high quality product "made in Germany" while making use of the service and support provided by one of our qualified and authorised local partners.**

For more detailed information
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