



Digital X-ray and image management in radiology and hospital

CE 0482

FDA 510(k) application has been cleared by the FDA No. K070618



CMDCAS certification QMS Iso 13485





■ made
■ in
■ Germany



Innovative image management for the highest demands

Nowadays, diagnostic investigation with the help of digital image solutions plays an important role in the daily work of every modern practice or hospital. As the use of these modern technologies will continue to increase during the next few years, we would like to give you an understanding of our PACS software **dicomPACS**.

dicomPACS is an innovative and intelligent high tech solution for image processing as well as practice and hospital management. With the help of **dicomPACS** a paperless daily working routine can become reality. All types of images (X-rays, CT, MRI, digital camera, ultrasound) as well as all kinds of documents (doctors' letters, diagnoses, recovery processes, faxes) can be acquired, diagnosed and then filed in the digital patient file, only one mouse click away, with **dicomPACS**.

With our well designed archive and backup solutions, we guarantee quick access to all data in accordance with the highest international security standards. Moreover, **dicomPACS** can be integrated effortlessly with management systems via HL7 or BDT/GDT communication or using an individual solution.

Advantages and functionality

- Developed by doctors for doctors
- Easy handling
- Flexibility as a result of individual customisation
- Very cost effective
- Integrated web server
- Many specialised measuring functions
- Integrated MIP/MPR function
- Integrated pre-operative planning

Software

dicomPACS[®] in radiology and hospital

A **dicomPACS**[®] system will finally put your dream of a digital patient file into practice:

- **dicomPACS**[®] can communicate in accordance with all common standards, such as HL7 or other internationally recognised standards.
- All data is archived in DICOM format in an SQL-database. It is available at any place and any time.
- Due to the DICOM format, you are able to exchange your data worldwide via internet, e-mail or telephone. With our **dicomPACS**[®] system, you gain independence from separate and incompatible solutions.
- **dicomPACS**[®] **MobileView** is a web-based viewer, that contains all the basic functions for viewing images. The viewing can take place virtually independant from the browser on mobile devices, such as an iPad.
- **dicomPACS**[®] allows the integration of nearly all digital or analog modalities into your administration system. Data from the modalities can be transferred easily and archived comfortably in DICOM format.
- **dicomPACS**[®] displays cutlines of CT or MRI slices in overview images, generating the necessary data itself, and provides a number of further useful slice image tools.





Digital image management by OR Technology



dicomPACS® has proved
itself thousands of times all
over the world.

Structure

Professional work flow with **dicomPACS**[®]

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.

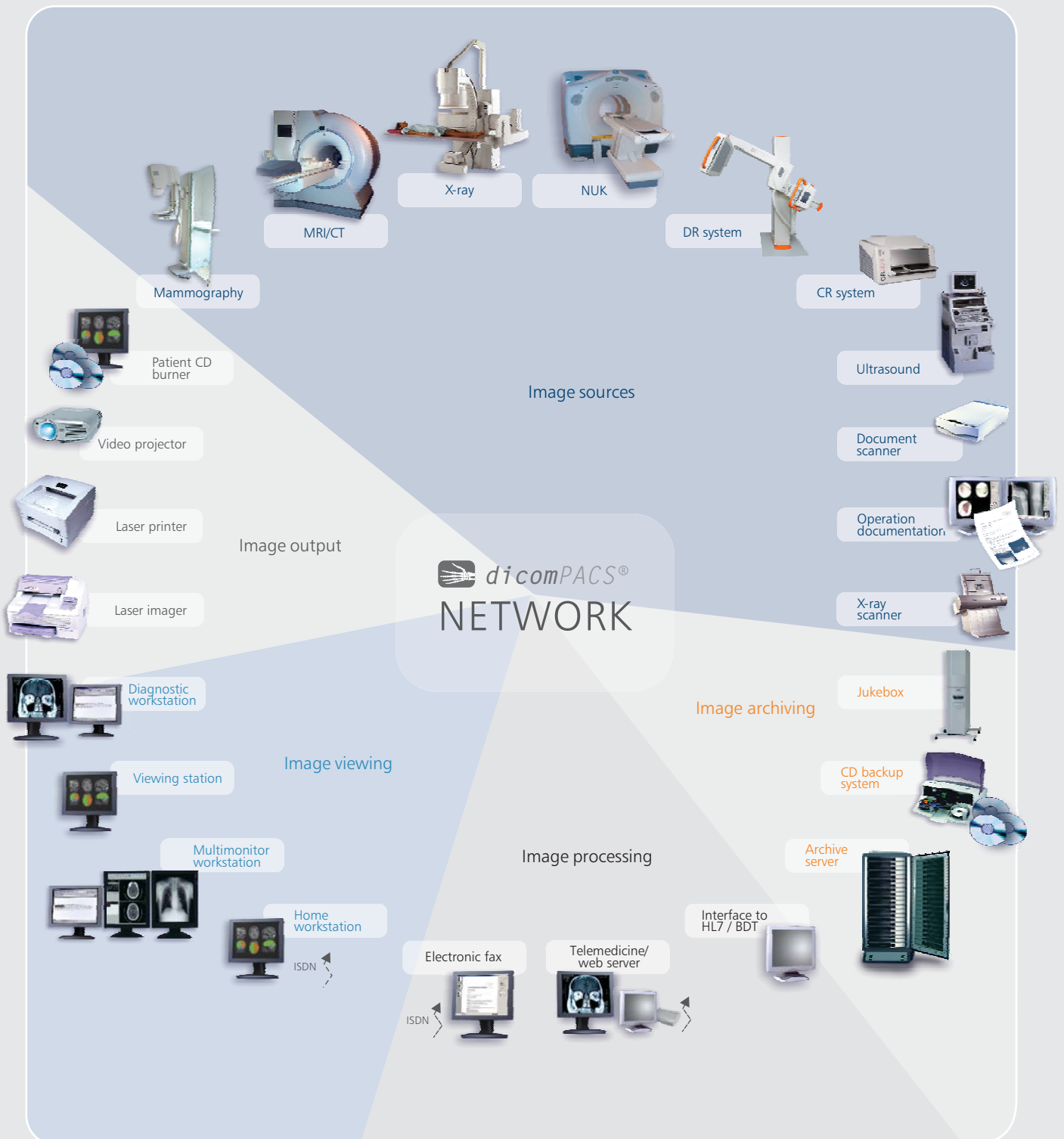
With more than 5,000 workstations installed nationally and abroad, our system has proved itself over and over and has shown every day what it is capable of doing.

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.

Connectivity

The diversity of **dicomPACS**[®]



Interaction

Interfaces to HIS and RIS

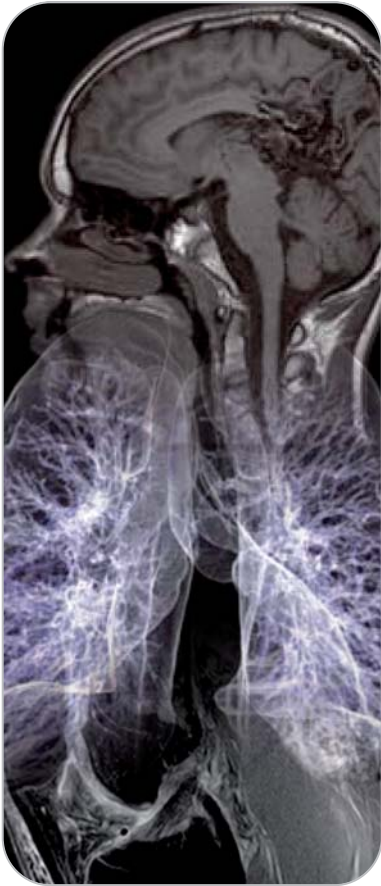
One of the areas with the biggest scope for economies in the health caresystem is the optimisation of the operational procedure.

The use of fully automated documentation, as well as the permanent availability of data, accelerates the daily workflow enormously and extensively contributes to cost-savings.

The pre-condition: All systems need to merge smoothly, because only then a raise in effectiveness could be materialised. To ensure that all software components like HIS and RIS work perfectly together, sophisticated and optimal structured interfaces are required.

If you want to be sure that everything matches, you should decide in favour of **dicomPACS**[®]. It supports all standard interfaces like HL7, DICOM or others. We can also integrate individual interfaces on request.





Overview

Advantages at a glance

Modular structure

- Easy to adapt to any size of practice or hospital
- User friendly, clearly laid out structure, low training expenses and short training periods
- Individual customisation of the user interface in accordance with your specialisation and to your requirements
- Flexible allocation of hot keys for many functions enables the user to work fast without a mouse

Flexibility and user orientated features

- Specially geared to the needs of radiologists, orthopaedists and surgeons
- Parallel processing (possibility of continuing work while, for instance, a CD is being burnt)
- „Perfect memory“ - repeated opening of an image with all the previous markings and settings, incl. zoom and alignments
- Parallel compiling of diagnostic reports for several patients is possible - any number of program windows may be opened without loss of speed (depending on the size of the working memory)

Integration

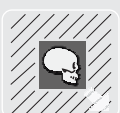
- Easy integration into existing HIS or RIS
- Storage of all images and documents exclusively in the international DICOM standard

Variety

- Wide range of tools, features and add-ons e.g.:
 - Windowing, zoom, filters
 - Integration of web server
 - Operation reports
 - Special measurement functions
 - Pre-operative planning
 - Integration of dictation and speech recognition systems etc.

Costs and depreciation of *dicomPACS*[®]

- Can be built up over time to meet changing needs - thanks to its modular structure
- Has extremely favourable price-performance ratio - depreciation takes a very short time
- Help is at hand at any time via remote maintenance
- Includes a large number of highly useful tools even with the standard modules



Value

dicomPACS[®] features

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 acquisition of images and the compilation of diagnostic reports to the archiving and transfer of image data.

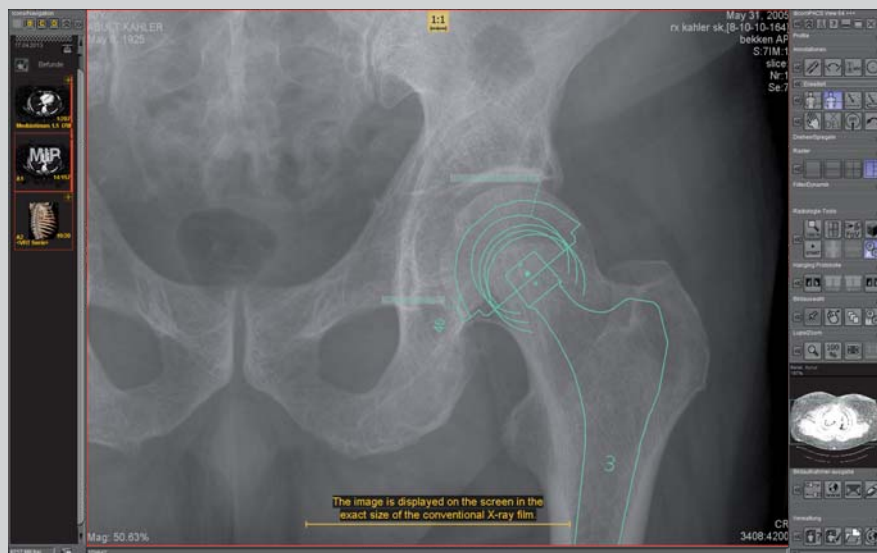
It ensures that the images can be distributed quickly and without complications and viewed e.g. via the web server. In addition, the system is extremely flexible and open for many applications.

Selection of features:

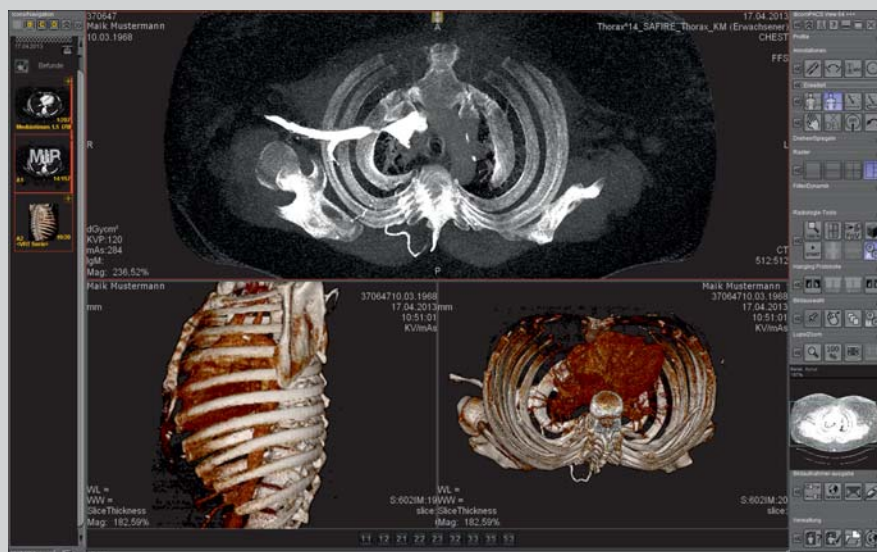
- **Prosthesis documentation** - enables the user to plan operations with digital prosthesis templates by one or more manufacturers
- **Report Module** - for easy preparation of different reports (e.g. operation reports, ultrasound reports etc.) incl. Word macros with images and a digital dictation system
- **Statistics Module** - enables freely configurable analysis of the complete database
- **Video Modules** - enable standard and non-standard video signals to be recorded as single images and video sequences
- **Web Server** - enables image distribution within the hospital or to referring doctors via the internet and guarantees very fast image accessibility in original quality (DICOM)
- **Processing of CT and MRI series** - **dicomPACS**[®] includes professional tools such as MPR and MIP to evaluate cross section series
- **Hanging protocols**
- **Special function for mammography analysis**
- **Integration of speech processing systems**
- **Telemedicine**
- **Special solution for multiple archives**



MPR
(Multi Planare
Rekonstruktion)



Prosthesis
documentation



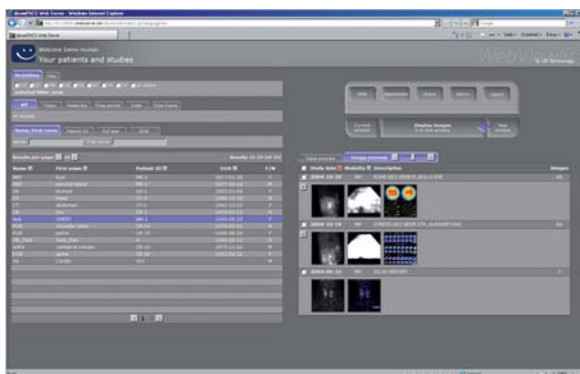
Processing
of MRI and
CT series

Cloud-based

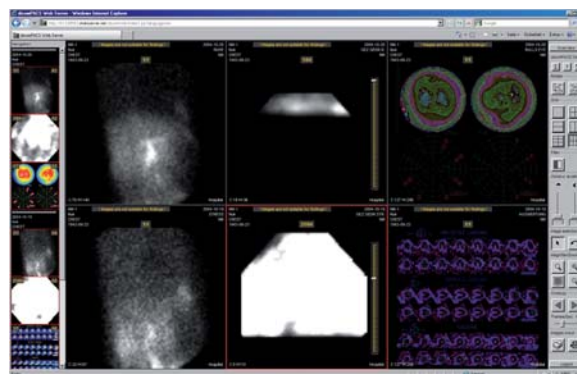
Digital access and archiving of images and diagnostic reports via Intranet and Internet

Web server for internal image sharing and external distribution to referring doctors

Making images available via the internet (or intranet) is an increasingly important daily requirement in the medical practice. One purpose is the distribution of images or other documents in a larger clinic. Equally important is the integration of external referring parties (hospitals, medical practices) or home workstations.



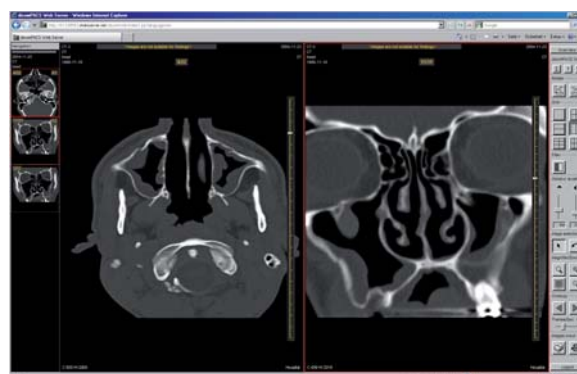
Web preview



Web viewer with NUK images



Image processing tools (for example magnifier)



Web viewer with CT images

The intention is always the same: faster, cheaper downloading of archived images and diagnoses via the internet or intranet (also via slow internet connections), in diagnostic quality if possible, to every clinic or internet PC. The use of older PCs, thin clients or terminal servers must also be made possible.

To accommodate as many requests as possible from the medical practice and hospital, we have developed our **dicomPACS[®]** Web Server in cooperation with respected doctors.

ORCA - the Cloud-based archive solution by OR Technology

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:

- Safe, long-term archiving of patient data with intelligent usage of internal databases
- 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 **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.

Network

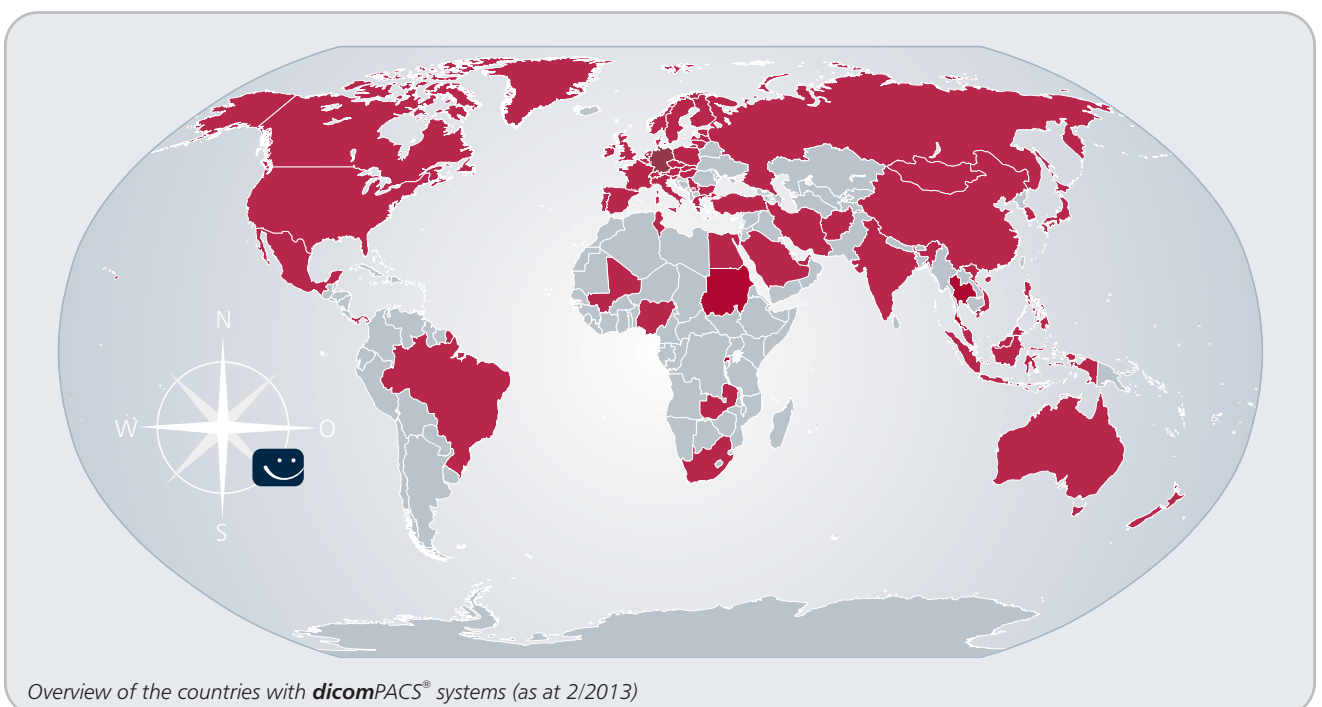
Global Competence

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.



Overview of the countries with **dicomPACS**[®] systems (as at 2/2013)

Satisfied Customers

Reference Hospital Jekabpils, Latvia Dr Igors Malikovs and Dr Ivars Zvidris

Extensive *dicomPACS*[®] installation at a Latvian hospital:

The hospital in Jekabpils, situated 150 km from the capital Riga, was completely refurbished during the past year and is now equipped with the most up-to-date technology in all departments. As many as five new operating theatres were established during the refurbishment process. The hospital boasts 350 beds and employs 65 doctors – seven doctors are on stand-by for 24-hour emergency service.

In the summer of 2009, OR Technology implemented the digitalisation of the X-ray department in cooperation with its Latvian distribution partner. A Siemens CT unit, three CR systems, three ultrasound units and two C-arm X-ray systems were integrated. The *dicomPACS*[®] webserver controls image distribution via the intranet.

Dr Igors Malikovs, head of the radiology department, comments on digital X-ray imaging with *dicomPACS*[®]:

„We are very happy about changing over from analog to digital imaging in our department. Initially, we were a bit concerned about how this change-over could be implemented without interfering too much with our daily work routine. Now that the system has been installed successfully, we know that this worry was unfounded. The entire change-over was effected in a most professional way without us having to cancel any examinations.

The greatest benefit for us is the DICOM worklist integrated in the PACS and RIS. Now imaging requests can be sent from all of our three reception desks to the respective diagnostic unit – fast and easily, avoiding many mistakes that used to happen in the past.

In addition, we save costs since we don't have to print out images any more. Our printing volume now amounts to only 10 % of what it was previously.“

Dr Igors Malikovs comments on the *dicomPACS*[®] Webserver:

„We use the webserver at 30 workstations in all our departments and at a few home offices. All the doctors who are involved in the evaluation of an examination or require access to the images, can keep themselves informed without delay.

In the past that could take up to several days. Calling up images via the webserver is so easy that some of our doctors use this access from home when they are on call-up. We've had emergencies when the radiologist was able to make a diagnosis from his home office within a few minutes. Prior to the change-over, when X-ray images were only available on film, such fast evaluation was an impossibility.“

The director of the hospital of Jekabpils, Dr Ivars Zvidris comments on the decision for *dicomPACS*[®]:

„The Latvian health system is currently experiencing great difficulties. In such difficult times it is essential for hospitals to be up to date in terms of technology. Our investment into digital X-ray imaging gives our hospital in Jekabpils the edge in a competitive market. An increase in diagnostic quality coupled with cost efficiency was of utmost importance for us. After having looked at various installations offered by other firms, we decided on OR Technology's *dicomPACS*[®] and webserver solution. The comprehensive offer and the good price-performance ratio won us over.“



Dr Igors Malikovs



Dr Ivars Zvidris



Portfolio

Overview - products of OR Technology



Medici DR Systems

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



Leonardo DR Systems

DR suitcases - compact suitcase solutions for mobile and portable X-ray incl. **dicomPACS®DX-R** acquisition software



Amadeo X-ray Systems

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



Divario CR Systems

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



X-ray Accessories

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



dicomPACS®

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



dicomPACS®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

l Digital X-ray and
l Imaging Solutions

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