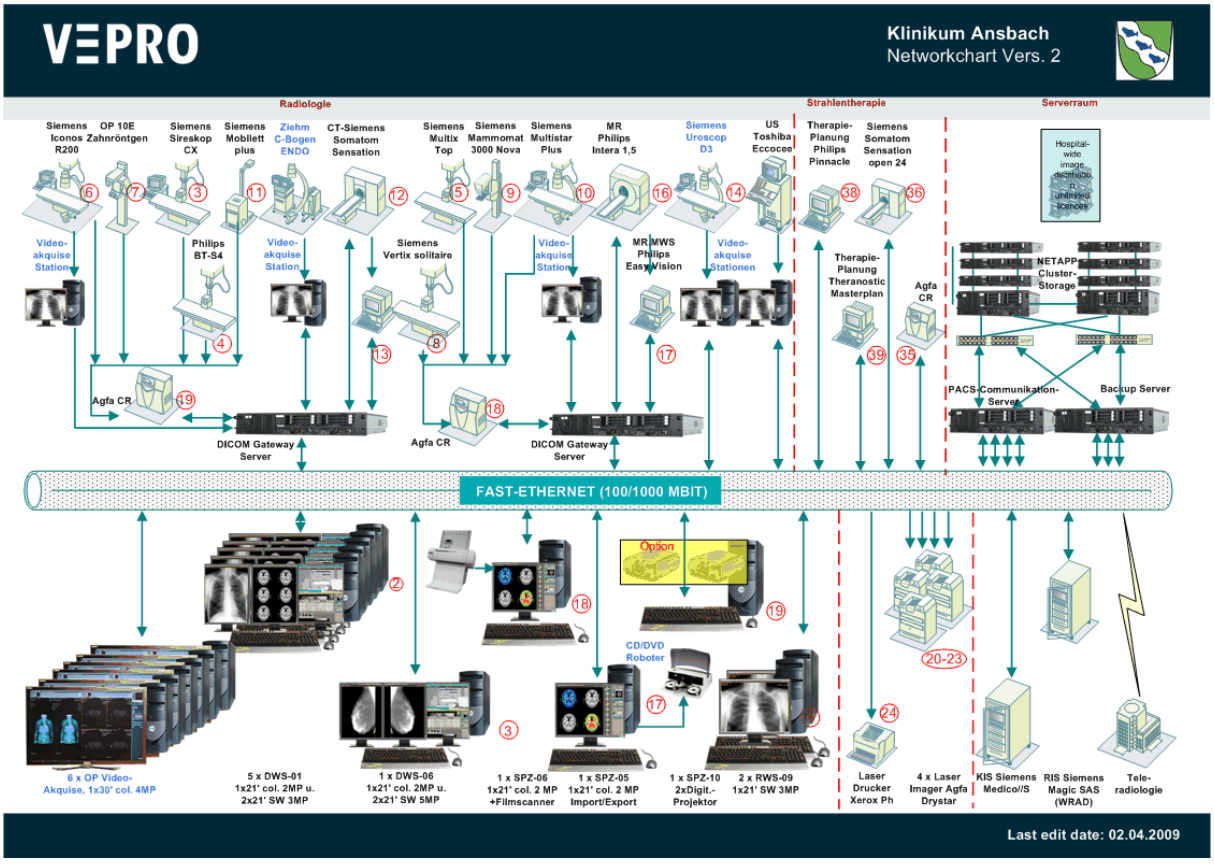
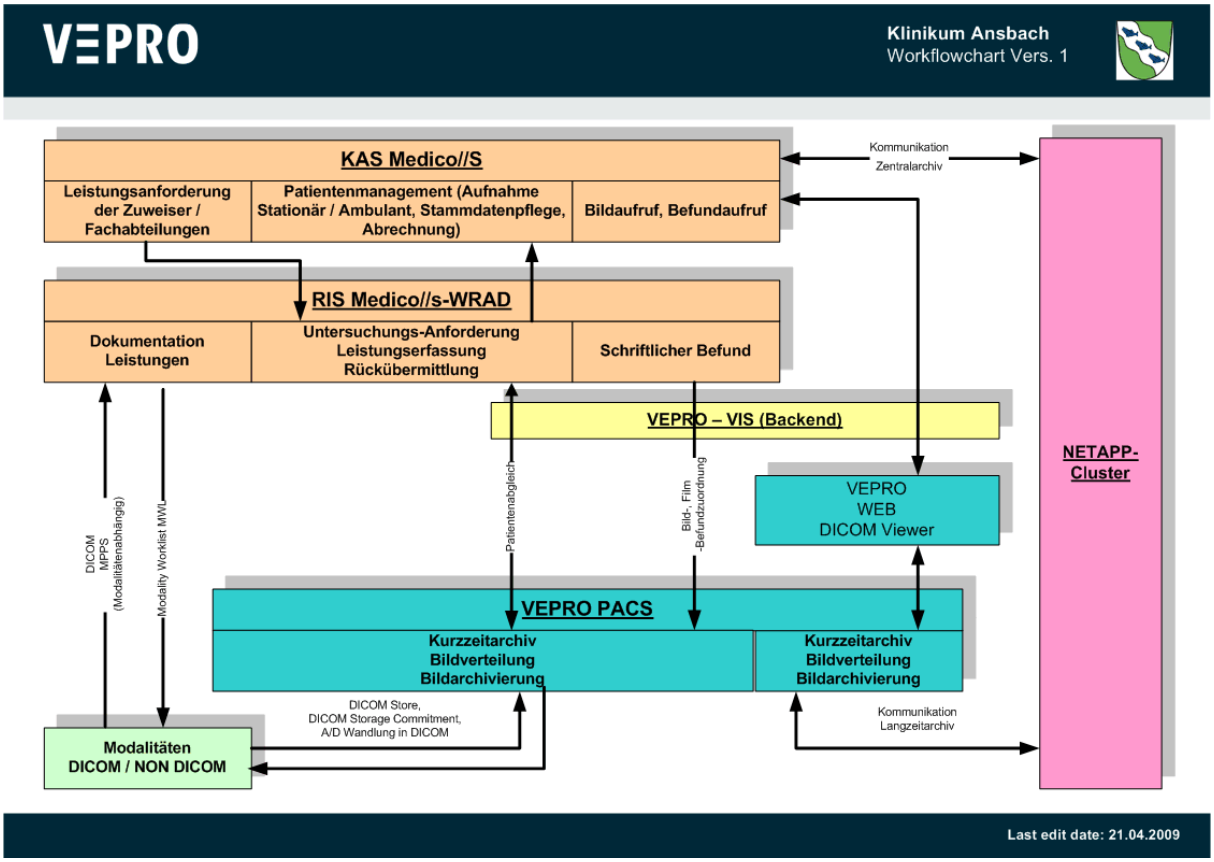
References – Klinikum Ansbach

Hospital/Institution Name:	Klinikum Ansbach	
City/Country:	Ansbach	Germany
Contact Persons (Phone, E-Mail):	Dr. med. Cathrin Böhner - Head of the Radiology Department	☎ -49 (0)981-484 2203 ✉ cathrin.boehner@klinikum-ansbach.de
	Dr. rer. nat. G. Böhnlein - Radiotherapy Physicist	☎ -49 (0)981-484 2584 ✉ georg.boehnlein@klinikum-ansbach.de
Consultant (Address, Phone, E-Mail):	Birkholz und Partner, Beratende Ingenieure f. Medizintechnik, Georg-Brauchle-Ring 58, 80992 München ☎ -49 (0)89 45 99 3130, ✉ Joachim.Zaers@birkholzundpartner.de	
Connected Modalities DICOM:	2 x DICOM CR, 1 x DICOM MR, 1 x DICOM CT, 2 x DICOM WS, 2 x DICOM Gateway Server	
Connected Modalities ANALOG:	3 x DL, 1 x Endo, 1 x US, 6 x C-Arm (OP)	
Installation date:	December 2008	
Investment Volume ca.:	€ 550.000 – 650.000	
Patients per day: **GB per day:**	ca. 170	4,2
Server size: **TB per year:**	Customer sized	1,13
Number of Diagnosis Stations:	5 x 1x21' col. 2MP toolmonitor and 2x21' SW 3MP diagnostic monitor 1 x 1x21' col. 2MP toolmonitor and u. 2x21' SW 5MP diagnostic monitor 2 x 1x21' col. 2 MP Color 2 x 1x21' SW 3MP diagnostic monitor	
HIS/RIS Integration with Vendor:	HIS SIEMENS MEDICO//S, RIS SIEMENS WRAD	
Telecommunication with:	Hospitals of Erlangen and Nürnberg	
Special Applications or Integrations:	The VEPRO-VIS is working as a backend function. The VEPRO-PACS is using two VEPRO Servers and as long time archiv a customer NETAPP Cluster-Storage. Full integrated interface to RIS and HIS from Siemens. 6 x OP – Integration with 30” Monitors	

Network Chart



Network – Technical Diagram



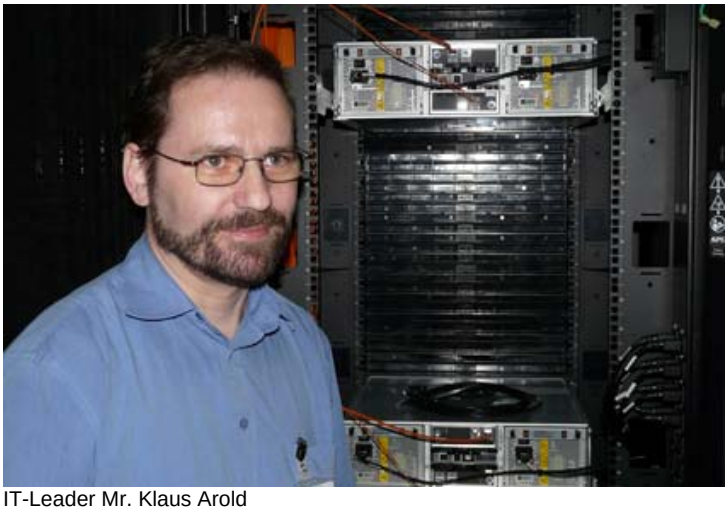
References – Klinikum Ansbach

Inauguration Ceremony

Cathlab

Inauguration Ceremony

IT Department



IT-Leader Mr. Klaus Arold

Dr. med. Cathrin Böhner and Mr. Wolfgang Kersten - VEPRO AG

References – Klinikum Ansbach

Dr. med. Cathrin Böhner, Head of the Radiology Department

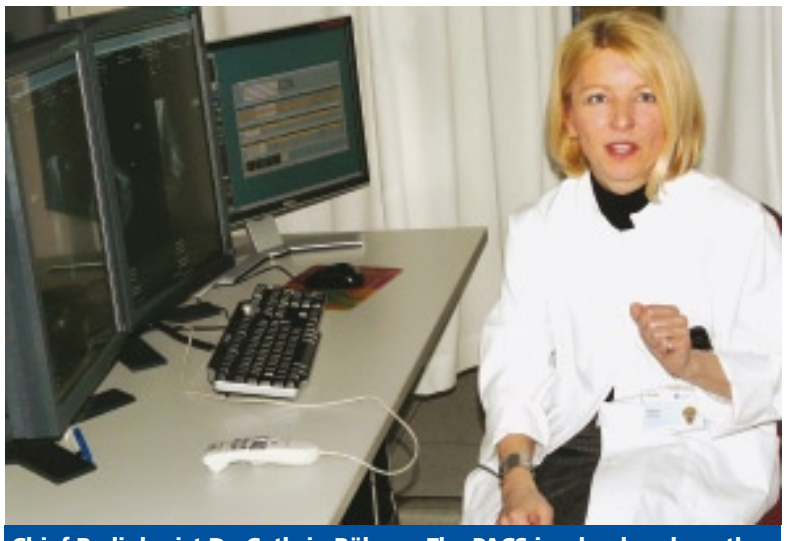
Inauguration Ceremony-Cake

Fighting Useless Conventional Paper Workflows

Ansbach (Germany) Community Hospital Introduces New PACS

The availability of medical images for reporting and therapy, collaboration between disciplines, information for the management, and communication with external partners: for years now, caregivers have realized that effort, cost, and risks from conventional paper- and film-based approaches in diagnostic imaging can be eliminated, for good. This was a perfect reason for the Ansbach Community Hospital in Bavaria's northwest to decide in favour of modern digital technologies. Dr. Cathrin Böhner, Head of Radiology, had already experienced PACS benefits during her work in another major caregiving institution; therefore, converting systems at Ansbach to modern solutions was a key concern to her. Together with medical physicist Dr. Georg Böhnlein she led the project which – in due course – was vigorously supported by the staff.

"The PACS for Ansbach" project – key actors (from the left): Adeltraud Nehmer, Chief Technologist; Klaus Arold, IT Manager; Dr. Cathrin Böhner, Head of Radiology; Wolfgang Kersten, Vepro Board Member; Dr. Georg Böhnlein, Chief Physicist (Photographs: JH, MR)



Chief Radiologist Dr. Cathrin Böhner: The PACS is a landmark on the way towards the electronic patient record.

Technological change has arrived in the city in Frankonia: today, the hospital with its 14 medical centres and institutes, and 415 beds, is filmless. Out of five vendors, Vepro won the PACS project – on the basis of a European tender, supported by Birkholz and Partner consultants. The project manager summarizes the offer of the Pfungstadt, Germany, based company: "Cheaper, more flexible, and closer to customer." According to the Chief Radiologist, "to be sitting at the same table with developers is an advantage only small and medium-sized companies can provide".

Project Backdrop And Goals

The radiology team was well aware of its aims: campus-wide access to imaging data from radiology, faster image acquisition and reporting, as well as support of further clinical and administrative processes. The employees were integrated into the project – "today, communication is essential" with regard to projects of this kind of scope, stressed Böhnlein during the ceremony for the inauguration of the new system last February. Inefficient paper-based information flow was to come to an end, security in assigning physicians' reports was supposed to increase. Before the introduction of the PACS, slips of paper had to be filled in and sent around to request images; these notes would reach the various departments by way of the collect and bring service. Often enough, the handwriting of the respective physician was undecipherable. Risks and delays were natural consequences. Time spent was increased further by dictations and duplicates ... and led to an approximate average of 36 hours spent between image acquisition and report completion. Search and handling efforts for X-ray folders in the conventional archive, and ancillary costs for the archive facilities, were among the aspects which cried for change. In department consultations, films had also presented a problem because image aspects critical for diagnostics were hardly discernible in the back rows. –

The HIS in use at Ansbach is medico//s. Shortly before acquisition of the PACS, the decision had been taken in favour of VRAD. The new PACS had to adjust to these both systems and to integrate a rather typical modality landscape.

Process And Cost Benefits

The system went operational in December last year. „Today, one minute after the patient exam, images are already accessible for reporting or viewing on all screens in the hospital", explained Böhner. "We have six workstations used for reporting." Networked information also allows for optimized interdisciplinary conferences, e.g. in oncology and surgery: reporting images presented on a screen via video projector, and readily visible for everybody, permit junior physicians and technologists to take part in the therapy discussion. Furthermore, digital images can be integrated into the consultation with the patient; and if required, the images can be printed.

Now, the "yellow slips of paper" are completed in the computer. The PACS automatically passes on the inquiry to the department in charge, and gives regular status reports to the staff. This enables employees to book exam appointments and to mark them as finished. Less information is lost, duplicate exams are avoided. The physician dictates directly into the PC.

The advantages of the new system extend to accounting and controlling where, e.g., additional services and contrast media applications are documented.

With regard to cost savings, the leading physicist pointed out: "Considering that every compact X-ray image costs a Euro, and every larger image incurring €2, it is easy to imagine the scope of the savings". However, effects go well beyond these: consolidation and acceleration of work routines support the reduction in length of stay – "from formerly ten, to six and a half days today", according to Vice CEO Johannes Schürmeyer. IT, in particular PACS, is an important enabler in this respect.

IT Infrastructure

Jointly with the general digitization in Ansbach, IT infrastructure is also being modernized. Klaus Arold is proud of his energy-efficient APC server room with optimized flow of cooling air. A key benefit, according to the IT manager, is fire prevention provided by the lowering of the oxygen rate to 14.9% – this corresponds with a rate at about 3,500 metres above sea level. This helps minimize the risk of fire. The core of the infrastructure is the 13 TB SAN server in an n+1 system – one device can fail without data being lost. In addition, there is a mirroring server which protects the data. It already passed its "acid test" when the system was moved without interruption of operations.

Routine, And Perspectives

There is still a lot to do at the hospital: the RIS needs to be connected with analog modalities, and the integration of additional modalities has to be accelerated. Furthermore, Ansbach also wants to start distributing medical images to off-campus partners, in particular to co-operating caregiving institutions and referring physicians. Moreover, the PACS lays the cornerstone for the electronic patient record (EPR) – an important future goal of the hospital. Acceptance by employees is high; the appropriate method to realize a new system is to proceed fast, explained Dr. Böhner. This is why general support soon superseded the – typical – initial scepticism. Digitization also plays a role in the competitiveness of the caregiver in the market: more and more patients expect caregivers to offer state-of-the-art technology, such as patient CDs with medical images. Today, Ansbach is braced for the future.

Michael Reiter
Jennifer Hildebrandt

UAE Automate Healthcare Processes

Caregivers Select Cerner Millennium Solutions

Patients and clinicians at Ministry of Health (MoH) hospitals and clinics in United Arab Emirates (UAE) Northern Emirates soon will benefit from a fundamental change in the way they receive healthcare. MoH facilities will be implementing healthcare information technology systems from Cerner designed to improve patient care and the way doctors and nurses do their jobs.

Twelve hospitals and 60 clinics will implement a suite of solutions to optimize and automate paper-based processes. iCapital, a UAE-based company and consortium lead, will serve as the prime contractor for the realization. "The implementation of the solutions will allow us to take a major step forward in the creation of a single, unified patient record and provide one standard of care across all of the Ministry of Health facilities", said Humaid Bin Mohammad Al Qatami, UAE Minister of Health. "We believe patients will greatly benefit from clinicians' ability to access one unified patient record with automated clinical decision support regardless of where they receive treatment at our hospitals and clinics in the Northern Emirates."

The solutions applied throughout the MoH healthcare delivery facilities will automate processes in the scheduling, admissions, emergency, laboratory, pharmacy, radiology, surgery, medical records, and clinical supplies departments. Nurses and physicians also will use them to manage and document patient care through online order entry, results notification, and viewing.

"It takes a tremendous amount of vision and commitment to move not only from a paper-based to an automated system, but also to create a region-wide electronic patient record in the process", underlined Rich Berner, Cerner Middle East Vice President and General Manager. "This is a major milestone towards the transformation of the UAE's healthcare system. Cerner's vision for providing information at the point of care, and its single electronic medical record architecture across the MoH network of provider hospitals are key factors for realizing the objectives of MoH. We are privileged to have this partnership with MoH and Cerner for such a large-scale national initiative", said iCapital CEO Amro Al Deeb.

www.cerner.com
www.icapital.ae

Cooperation Enhanced

The European Coordination Committee of the Radiological, Electromedical, and Healthcare IT Industry (COCIR) and the Healthcare Information and Management Systems Society (HIMSS) will work together on public policy and educational activities in Europe and the Gulf Region. With complementary missions to improve the delivery of healthcare with the best use of health IT and management systems, the two healthcare IT organizations have agreed to coordinate their efforts on education, public policy, and market access in Europe. COCIR will also bring its support to HIMSS educational efforts in the Middle East at the first HIMSS Middle East conference to be held in Manama, Bahrain on 5–7 May 2009.

"The collaboration between HIMSS and COCIR offers a unified voice for our shared corporate members in Europe and the opportunity to advance the education of healthcare technology professionals in Europe and the Middle East", said H. Stephen Lieber, CAE, HIMSS President/CEO. "Both of our organizations share the philosophy of advancing health informatics as a profession, which will continue as we work together by offering coordinated member services and educational programming." Nicole Denjoy, COCIR Secretary General added: "The collaboration will help both organizations reach out to decision-makers across Europe, allowing them to improve healthcare delivery through the use of healthcare IT solutions."

www.cocir.org
www.himss.org

Dr. Cathrin Böhner, Chefärztin der Radiologie

High Tech in Mittelfranken

Klinikum Ansbach feiert neues PACS-System

Am 10. Februar 2009 war es soweit. Das gemeinsame Projekt „Digitales Bildmanagementsystem (PACS)" zwischen dem Klinikum Ansbach und dem PACS-Anbieter Vepro aus Pfungstadt wurde erfolgreich mit einer Einweihungsfeier abgeschlosssen. Die Radiologie des mittelfränkische Krankenhauses mit 415 Betten, das sich als „Kompetenzzentrum Gesundheit für das westliche Mittelfranken" sieht, arbeitet seit Ende Dezember 2008 vollständig digital.

Knapp 30.000 konventionelle Röntgenuntersuchungen veranschlagten in Ansbach jährlich 172.000 Euro allein an Film- und Folgekosten. Man arbeitete mit gedruckten Aufklebern, Zetteln und lagerte die Filme im Keller des Krankenhauses. Das hat mit der PACS-Einführung jetzt ein Ende. Die Filmkosten werden eingespart, Patientendaten kommen automatisch aus dem KIS und die Bilder sind in klinikweitem Zugriff an jedem PC des Hauses zugänglich. Allein die Filmkosten verschlangen pro Bild zwischen einem und zwei Euro. Als KIS nutzt man in Ansbach medico//s, und kurz vor der PACS-Einführung hatte man sich für WRAD als RIS entschieden.

Dr. Cathrin Böhner, Chefärztin der Radiologie, leitete mit dem Physiker Dr. Georg Böhnlein gemeinsam das Projekt. Tatkräftige Unterstützung erhielt sie von ihren Mitarbeitern, die allesamt der PACS-Einführung positiv gegenüberstanden. Von Seiten der Medizinisch-Technischen Assistenz stand auch die Leitende MTA Adeltraud Nehmen dem Projekt äußerst positiv gegenüber. Die Investitionssumme des Klinikums Anspach für das PACS beläuft sich auf 1.000.063 Euro. Die Betriebskosten betragen über einen Zeitraum von fünf Jahren 205.000 Euro, so dass vom Klinkum

von links: Adeltraud Nehmer, leitende MTA
Klaus Arnold, IT-Leiter
Dr. Cathrin Böhner, Chefärztin der Radiologie
Wolfgang Kersten, Vepro-Vorstandsmitglied
Dr. Georg Böhnlein, Leitender Physiker

Mit einer kleinen Feier am 10. Februar 2009 in Ansbach würdigte man noch einmal die Beteiligten des Projektes.

ein Gesamtaufwand über fünf Jahre in Höhe von 1.205.053 Euro getätigt werden muss. Demgegenüber stehen Einsparungen für Filmkosten – ebenfalls auf fünf Jahre gerechnet – von 860.000 Euro.

IT-Infrastruktur soll insgesamt modernisiert werden

Im Zuge der PACS-Einführung soll auch die IT-Infrastruktur des Hauses modernisiert werden. IT-Leiter Klaus Arold ist vor allem stolz auf seinen energieeffizienten APC-Serverraum mit optimiertem Kühlluftstrom. Als besonderen Vorteil sieht der IT-Leiter die Brandschutzvorteile einer Senkung des Sauerstoffanteils in diesem Raum auf 14,9 %. Die Brandgefahr wird durch diese Maßnahme minimiert. Das Herzstück bildet hier ein 13 TB-SAN-Server in einem n+1-System – ein Gerät kann ausfallen, ohne dass Daten verloren gehen. Für alle Fälle gibt es zudem einen Spiegelserver, der die Daten zusätzlich schützt. Er hat seine „Feuerprobe“ bereits bestanden, als das System im laufenden Betrieb umgestellt wurde. Das PACS soll den Grundstein für die digitale Patientenakte des Hauses legen. Dies ist das erklärte weitere Ziel der Mittelfranken.

Berater in diesem Projekt war die Unternehmensberatung Birkholz und Partner. In einer europaweiten Ausschreibung wurde der entsprechende Industriepartner gesucht. Den Zuschlag unter fünf weiteren Mitbewerbern erhielt am Ende das mittelständischen Unternehmen Vepro aus Pfungstadt. „Günstiger, flexibler und kundennäher“ lautet die Zusammenfassung der Projektverantwortlichen über das Angebot der Pfungstädter.

Mit einer kleinen Feier am 10. Februar 2009 in Ansbach würdigte man noch einmal die Beteiligten des Projektes. Wolfgang Kersten, Vorstandmitglied der Vepro AG, lobte in seiner Festansprache die gute Zusammenarbeit und bedankte sich mit einer originellen, extra angefertigten Torte mit aufgedruckten Bildern der Verantwortlichen und einem PACS-Organigramm.