

## *User Report*

# *Digitization of Radiology as a Strategic Project*

## *PACS is a key element for boosting efficiency at Altenburg District Hospital*

“It was our aim to integrate radiological procedures into the IT infrastructure with appropriate archive management. In order to meet this requirement for 32,000 radiological examinations a year we had to supplement our existing hospital information system (HIS) and radiology information system (RIS) from the iSOFT company to include a PACS,” says IT manager Reiner Selent, explaining the starting point for the procurement of a digital picture archiving and communication system. It had to have a functioning link with the RIS and preferably be LINUX or UNIX-based. “We wanted to realize clinic-wide image distribution employing web technology. In order to make us independent from a single vendor we did not want the system to be restricted to Internet Explorer or other Windows components,” Mr. Selent explains.



*The district hospital in Altenburg, Thuringia, is a general hospital with 567 beds. It houses a total of 14 clinics with specialty centers Internal Medicine, Surgery, Neurology, and an Outpatient Surgery Center.*

### ***Interface with Existing RIS was Convincing***

The hospital has now been using the JiveX PACS system from VISUS since March 31, 2006. "Our goal was to abolish the need to make X-ray films from that date on. We have come very close to that target already with a maximum of one film per day on average," says Dr. Albrecht Bormann, Senior Physician of the Radiology Clinic at Altenburg District Hospital, summarizing one success of PACS implementation.

With regard to the selection criteria Mr. Selent says, "JiveX was convincing due to its perfect interfacing with the existing iSOFT systems and its functionalities, which permit a broad degree of customization. Even long series of images are loaded amazingly fast." For president Peter Jansen it was not only technological advantages that were crucial but also other aspects: "With its PACS, VISUS offers us a convincing cost-benefit ratio. Especially the campus license helps us to cut costs when we expand the system step by step. I was also convinced by the way in which the company treats its clients – it regards them as partners. Our special requests were met quickly and satisfactorily."

### ***One-Week Trial***

The tender to submit bids for the PACS contract took the form of a restricted competition. Of the 17 participating vendors 5 were selected, and they then submitted bids. The bids were evaluated by an internal project team according to defined criteria. In parallel there were reference visits to client sites in which an existing interface between a PACS and an iSOFT RIS was demonstrated.

"To enable us to involve ourselves with the system in daily practice and validly assess the potential in terms of user friendliness, image quality, and communication capability we also requested a one-week trial, with a reporting workstation integrated into the network of the Radiology Department," says Mr. Selent.



*Digital reporting at an integrated RIS/PACS workstation*

### ***Administrator Training Facilitates Installation***

The training phase was also unusual, and the hospital later proved to be right. "Prior to installation of the system there was a 3-day administrator training session. After that the administrator was familiar not only with users' requirements but also with options made available by the system. That simplified and speeded up installation and customization considerably. I can recommend this procedure to anyone," adds Mr. Selent, summing up.

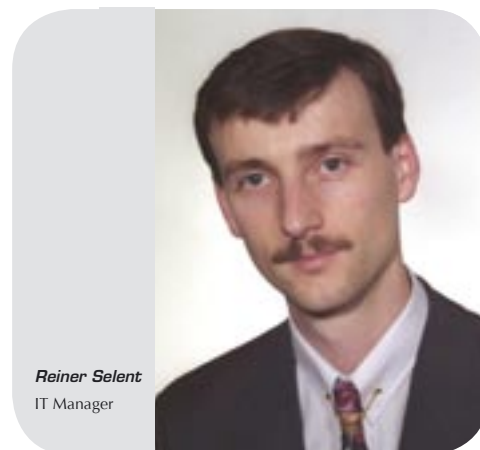
Targeted training sessions took place in Radiology. "The 11 radiography technologists don't have to be able to handle everything. Consequently, certain technologists were given additional training sessions to supplement the basic training so that they would be able to handle specific tasks. These include quality control and documentation, for example," the IT manager explains. Training sessions for hospital doctors on site was very simple because JiveX works intuitively. In order to ensure efficient work and a high level of acceptance right from the beginning IT employees set up each workstation in the field and gave users separate instruction.

### ***Fast Availability of X-Ray Exposures***

"Implementation of the PACS project was then completed very quickly with the system up and running. Barely three weeks elapsed between delivery of the hardware and complete commissioning, with irreversible shutdown of film processing," says Mr. Selent looking back.

At Altenburg District Hospital the images are now distributed to a total of over 50 doctor workstations throughout the clinics by means of web technology. The operating rooms also have workstations with full functionality for postprocessing, e.g. zoom, window leveling, and quantification.

The images are available in the PACS immediately after generation and the report follows the same day. "We employ speech recognition software. The report is dictated by the doctor and sent to the recognition server, from which it is automatically sent to the typing



**Reiner Selent**  
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**Dr. Bormann**  
Chief radiologist at Altenburg District Hospital

desk for correction. If there is no one in the typing office, the doctor can switch over to online speech recognition and generate the report direct. He makes any corrections necessary on the screen and approves the report," explains chief radiologist Dr. Bormann.

### **Major Impact on Clinic and Patients**

Instant availability of images at the ward and in the operating room speeds up the medical treatment process substantially. Image information is also available at remote locations fast, even if the data link is narrow band. Moreover, the PACS makes it possible to shorten examination times and thus increase the numbers of examinations performed. "This is an aspect that should not be underestimated in economic terms," emphasizes Mr. Jansen. The basic requirement is seamless integration of JiveX into the existing IT infrastructure of the hospital with the Storage Area Network (SAN).

Direct cost savings result from a drastic reduction in the consumption of film. "In this area we save about 80,000 euros annually," the president calculates. As a result the investment will pay off in the long run. Due to the PACS no more time is spent locating and retrieving X-ray films, and that time can now be devoted to additional patient management.

"For radiologists, however, it is the much smoother and more rapid processes that are crucial, as well as considerable simplification of demonstration and its preparation," Dr. Bormann points out. In this way images can be preselected automatically by discipline, for example.

Another benefit in times of PACS is the potential offered by the Medical Backup Service. In his office at home Dr. Bormann has a compatible workstation with which he can call up X-ray images if there is an emergency at the clinic. Now he can quickly decide on further procedure without having to be present at the hospital. That speeds up the treatment of patients considerably, which is vital when it is minutes that account.

After four months IT manager Mr. Selent sums up with satisfaction, "We would definitely choose VISUS and JiveX again."

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