

User report

Integrated Image Management Realized for Radiology and Cardiology

St.-Johannes-Hospital Dortmund in Germany trusts in JiveX from VISUS

Prof. Dr. Karl Schürmann, Director of radiology
St.-Johannes-Hospital Dortmund

The St.-Johannes-Hospital Dortmund (JoHo), a 570-bed hospital of the tertiary care category in Germany, serves close to 27,000 inpatients and more than 18,000 outpatients annually. It sports one of the largest cardiology departments in the federal state of North Rhine-Westphalia, as well as a large cardio, thorax, and vascular surgery department. "In these fields, we are the leading hospital in Dortmund. With our cardiovascular focus, we offer medical services at the level of maximum care", is how Director of finances Fred Oberhag characterizes his hospital.

The Institute for Diagnostic and Interventional Radiology of the hospital carries out, in addition, CT and MR exams for two further care providers held by the responsible body Kath. St.-Johannes-Gesellschaft – the St.-Elisabeth-Krankenhaus and Marien Hospital Hombruch. "Our total number of exams is approximately 46,000 per year, with a focus on the heart and the vascular system as well as interventional exams", explains Head Physician Prof. Dr. Karl Schürmann.

Benefits: flexibility and innovation

In the context of a continuous increase in the number of exams and a growing volume of data, the hospital took into consideration the digitization of its radiology department already back in 2003. For this purpose, a comprehensive working group was set up which included physicians as well as staff from the IT, medical technology,



Fred Oberhag, Director of finances

and administrative departments to ensure that all interests and requirements would be represented.

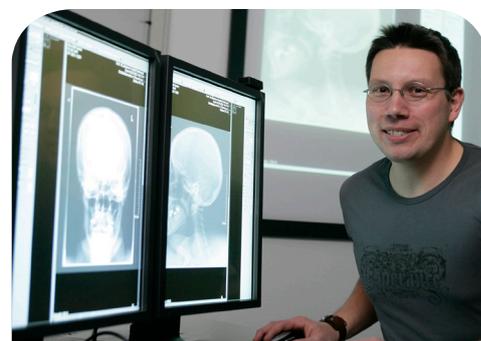
Seamless integration of cardiology imaging into the PACS was a prerequisite in the process of selecting the system. "A solution enabling integrated image management was therefore the order of the day", is how Torsten Emmerich, Manager, Communication Technology, summarizes the situation. In addition, the system envisaged for investment had to be capable of integrating various image generating devices from a variety of vendors and to archive emerging data in a structured and DICOM compliant manner.

In the end, the decision was taken in favor of the PACS JiveX from VISUS. The system from the Bochum-based IT manufacturer convinced the customers not merely thanks to its functionalities and a positive price-performance ratio, explains Oberhag: "VISUS has been, and continues to be, a flexible and highly innovative company which will respond in a timely fashion to specific customer requirements. Over time, very intensive communication has evolved between the partners. As far as possible, our requests are realized promptly".

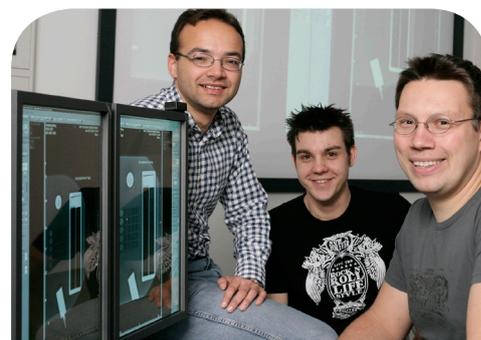
Enterprise-wide rollout with caution

An initial implementation of JiveX for testing purposes was carried out in April 2004. "Subsequent to very positive experiences with the system made by radiologists, the PACS was finally implemented in December within three weeks. Around the turn of the year 2004/2005, the system was integrated into an existing HIS/RIS, and the worklist management was set up", remembers medical engineer Tobias Schröer as he looks back with satisfaction.

After a convergence phase carried out with caution, the radiology department now works digitally since July 2005. During a transition phase, image distribution was done in parallel. "In order to allow the project to start smoothly for our clinical colleagues, and to enable processes to establish themselves, we distributed, in addition to soft copies, X-ray films, or paper prints. We gave ourselves two



Torsten Emmerich, Director of communications technology



Torsten Emmerich with his team

months of time for enterprise-wide rollout with the aim of ensuring a smooth and trouble-free workflow."

Since 1 October 2005, the St.-Johannes-Hospital operates filmlessly with JiveX; enterprise-wide image distribution has been realized including the OR. The Marien Hospital, too, sports an implementation of JiveX; both care providers exchange images via a 10 MB fixed line. All images and reports are stored centrally at the JoHo. Image transfer to referrers is typically done by CD-ROM.

PACS „stands the test“ after HIS/RIS replacement

Two years after the enterprise-wide roll-out of the PACS, another challenge presented itself: the existing installation of a HIS/RIS solution of a vendor from Dortmund no longer met the requirements which had become increasingly demanding. The system was replaced by ORBIS from Agfa HealthCare. "During this process, the question came up automatically whether to replace also JiveX by the Agfa PACS in order to create an end-to-end solution with no interfaces", explains Prof. Schürmann. "However, eventually we – radiologists as well as clinicians and the IT team – deliberately decided against that move. There was not really any reason to carry out such a change because the system had laid testimony to the fact that it integrates seamlessly into various environments. In that respect, we therefore did not expect any problems to turn up – which has held true until today."

The high level of acceptance of JiveX is based on several aspects, describes Senior Physician Dr. Jens C. Arlinghaus: „The basic precondition is that the PACS runs in a robust manner. It is fast, which means that even large studies are retrieved within seconds. Enterprise-wide image distribution also functions without a problem. Generally, all users quickly experienced the benefits of the system in their daily routine, and they have come to appreciate them. Today, they very much like to profit from them."



Prof. Dr. Karl Schürmann, Director of radiology

The smooth radiology workflow is safeguarded by a deep integration of JiveX into the HIS/RIS solution from Agfa. In the wards, the exam orders are entered into the HIS, transferred to the RIS, and communicated via the RIS with an order number as a DICOM Worklist to the modalities. Immediately after the exam, the radiologist receives the images to be read in his worklist. Upon retrieval, the image data as well as previous images are loaded automatically via respective hanging protocols, and visualized in an optimal way for the respective reading process. The physicians in the wards access images and reports of their patients by the patient name in the digital patient record.

Amortization after three and a half years

“In our economic appraisal, we calculated an amortization period for the PACS of three and a half years – which has turned out to be realistic as of today. Each year we save a minimum of EUR 200,000 annually just by eliminating the cost of film. Savings also include expenses for purchasing and discarding film development chemicals as well as for the maintenance of equipment”, is how Administrative Director Oberhag describes the financial aspects.

However, radiologists too experience measurable benefits from the rollout of the PACS, explains Prof. Schürmann: “Today, the images are available to us anytime and anywhere. This helps speed up reading; the reporting process takes significantly less time. The immediate availability of previous studies and the options of digital image processing help improve the precision and quality of the diagnosis.” In addition, the PACS eliminates the need for technologists to search and fetch images from the archive, and it precludes any loss of images.

Dr. Arlinghaus, too, sees nothing but benefits resulting from the PACS for his daily routine: “It is in particular large series of images, e.g. from CT, which can be read significantly faster, more conveniently, and more effectively than before. I put together clinical demonstrations ‘in passing’ during the reading process, which helps save any extra time and effort. The demos are much more effective



**Dr. Jens C.
Arlinghaus**
Senior resident
radiologist

today because every participant sees the images, and because even previous images or other image material can be retrieved live on demand.”

“Investing in, and holding on to, JiveX has paid off in every respect. We enjoy working with the system”, is the final conclusion Prof. Schürmann draws.

Further expansion with JiveX

The next project planned is the rollout of PACS in the St.-Elisabeth-Krankenhaus in Kurl, the third care provider held by the responsible body. In addition, the JoHo plans to implement digital communication with GPs via the new web client in JiveX, and teleradiology communication with specialized clinics.

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