

User Report

Televisionaries

The largest national teleradiology network!

Torsten Möller, MD

Reif & Möller Diagnostic Network AG

It was just the year 2000 when private practice radiologists Doctor Emil Reif and Doctor Torsten Möller offered hospitals their diagnostic services. Today, both are managing Diagnostic Network AG, a company with a mission to provide superior, area-wide, round-the-clock, cross-sectional diagnostic imaging by means of teleradiology. Within a space of only five years they have built up an easily accessible computer centre in Dillingen on Saar which is linked to about 50 hospitals and 50 diagnostic centres. Their main focus is on hospitals that lack their own radiology units and welcome this endeavour by two teleradiology visionaries.

The two men still refer back with pleasure to the beginnings of teleradiology in Dillingen. It all began when they included a guarantee to provide night-time emergency radiology cover as part of a service contract with a local hospital. The success of this solution was quickly picked up by other hospitals and before very long Doctors Reif and Möller had reached the limits of their work capacity. Driving from one hospital to another – one emergency situation to another – used up most of their time. It was no surprise that they began to ask themselves: does the radiologist always have to go to the patient? The radiologist is not directly involved in treatment. And anaesthesiologists and internists are rather unwilling to leave the management of contrast medium reactions and anaphylactic shock to a radiologist.

Modern data communications methods now allow patient images to be transmitted within minutes to the teleradiology console of the radiologist on duty at the Diagnostic Network AG. This teleradiology network is a pioneer enterprise and provides a model



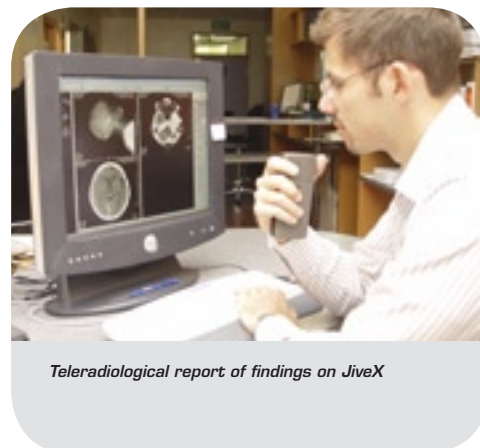
Diagnostic Network AG
Torsten Möller, MD

The office of Doctor Torsten Möller in Dillingen on Saar is also the headquarters of Diagnostic Network AG. From here, he and Doctor Emil Reif operate their national teleradiology network

for structure and efficient operation. The doctors have brought the system up to a very high standard over the years, eliminating the initial rough edges and implementing operating procedures to meet routine needs. The entire network, now with 100 participants, has been equipped since September 2005 with the professional teleradiology application JiveX from VISUS.

All clients and diagnostic centres have computers of similar specifications and a uniform JiveX user interface. „A night-time emergency is not the time to start wondering about which key to press to forward images to the teleradiologist,” says Doctor Möller. Image transmission therefore follows a set routine. The JiveX system recognizes the exact schedule of the teleradiologists, controls the forwarding of all images, and still remains flexible enough to react to changes in staff situations – such as when a member has a day off or is ill. Once the scan is complete, the teleradiology router immediately begins transmission of the image data. The radiological technician does not have to worry about the connection setup, but simply checks for correct transmission progress. Technical support from VISUS is available 24-7 should problems occur.

It takes less than a minute for the compressed data set to show up on the teleradiologist's screen. The complete DICOM (Data Imaging and Communication in Medicine) data reach him in less than five minutes. He immediately recognizes whether the case involves an infarct or a haemorrhage – two diagnoses requiring different treatment approaches. The teleradiologist then telephones the attending physician with a summary report, enabling the appropriate response to be started immediately. He follows this up with a detailed written report to the examination site within 15 minutes where it is automatically printed out over the teleradiology system. A copy is sent to the main centre at Dillingen. Prefilled boxes on the screen provide the diagnostician with all relevant data – he does not have to worry about from where the images came or where the findings are to be sent. Everything is organised so well that a teleradiologist awakened in the middle of the night is not faced with the challenges of a complicated technology.



Teleradiological report of findings on JiveX

The hospital receives the written report from the teleradiologist Doctor Volker Schmitt within less than 15 minutes. Critical information is communicated by telephone to the attending physician.

Doctor Möller sees hospitals in which radiology is performed by surgeons or internists as the main target group for his modern service. That means almost half of all German hospitals. The teleradiology service offered by Diagnostic Network AG pays off if at least 300 CT scans per year are needed. The service contract covers preparation of the CT and MRI systems, including all planning procedures required for the installation. The result is that emergency radiological services are made available to patients who would otherwise have to be transported 30 km to the nearest radiologist. Even if the transport distance is not very far, the transport itself as well as the time factor might constitute an elevated risk for a severely injured person. Hospitals can successfully treat neurological emergencies such as a stroke only if they have CT capabilities.

Doctors Emil Reif and Torsten Möller began to develop their own teleradiology software in the year 2000, working with a computer scientist. Growth in the number of clients increased the demands on their software. After five years, the team knew exactly what specifications were needed and were glad to find in VISUS a partner that could transfer the entire know-how of the radiologists to its teleradiology application JiveX. As Doctor Möller put it, „Flexible adaptation to our needs was one of the primary conditions we laid on all suppliers competing for the project.“ For nine months he travelled the country and evaluated the teleradiology solutions of nearly every supplier. The system had to be flexible, focussed, and lean. He had no use for unmodifiable stock items. VISUS impressed him from the very start with its technical expertise and its readiness to incorporate his experience, and he liked their team support in word and deed.

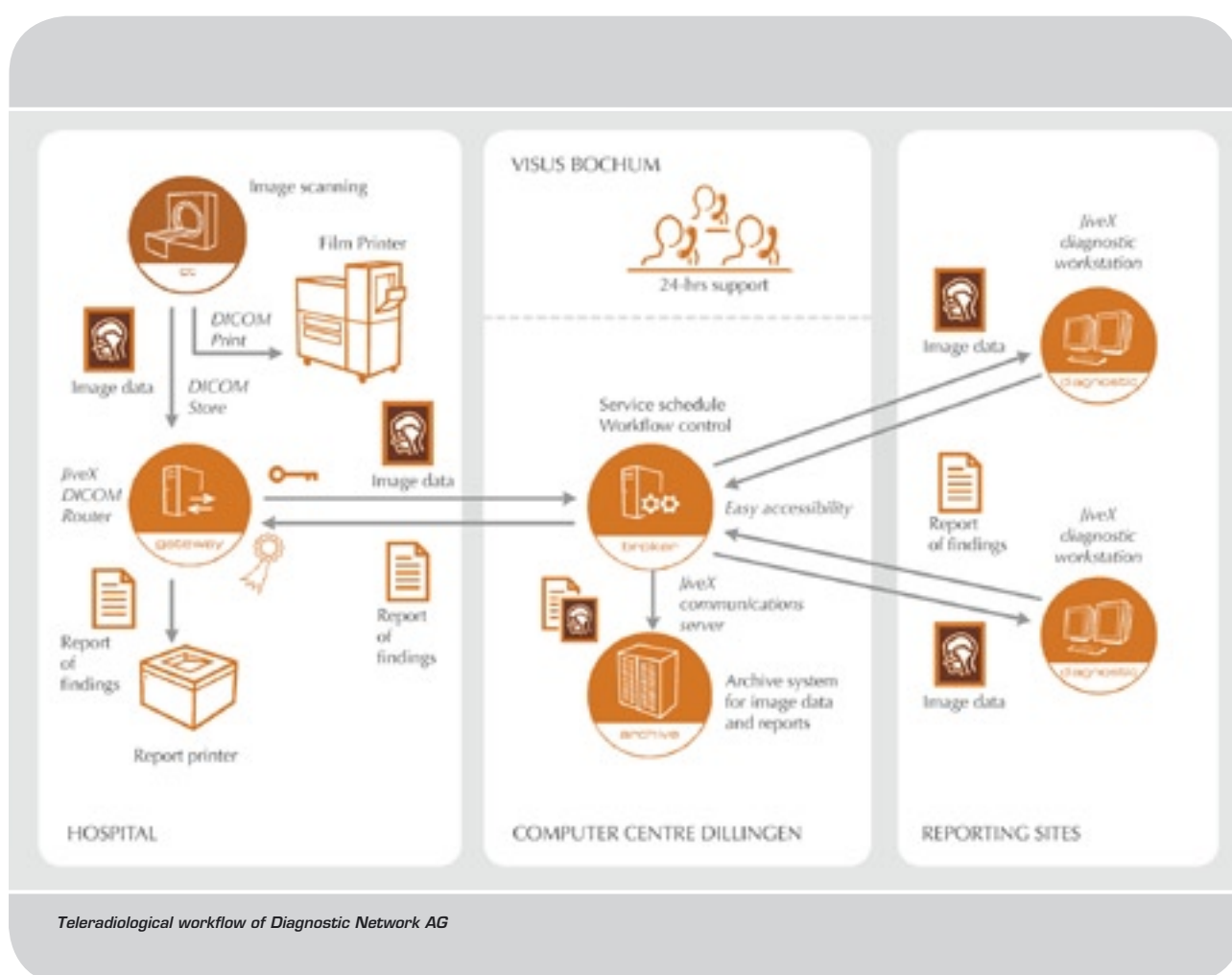
After three months of planning, a network of 100 sites – 50 hospitals and 50 diagnostic centres – was activated within a space of two weeks in May 2005. The system set-up remained right on schedule despite having to deal with a multiplicity of equipment types and models at hospital sites. Overall, about 600 users within the network began working with the VISUS software JiveX, proving it to be extremely user-friendly. Training needs were minimal: a preparatory session was conducted as part of a regular meeting of users of the teleradiology network that lasted only a single afternoon.

Hidden behind the plain façade of the Dillingen Caritas hospital is the modern teleradiology service centre of Diagnostic Network AG.



Jörg Holstein, the VISUS business manager explains, „In developing our application software, we placed great emphasis on managing the program. Anyone who knows how to double-click can use our system.”

Doctor Torsten Möller invested his entire know-how in the JiveX teleradiology solution from VISUS. A carefully thought-out concept ensures trouble-free operation of the whole network.



► User Report – Michael Schreiber, MD

In the eyes of Doctor Michael Schreiber, Medical Director at the Surgical and Internal Medical Hospital, Munich, teleradiology offers an attractive option for expanding the diagnostic range of his 165-bed hospital. His patients benefit particularly from the superior quality of the diagnostics. This head physician can initiate care quickly and without problems; patients do not have to be first transported to a radiologist. Doctor Schreiber uses the Reif-Möller teleradiology network for both hospitalised patients and emergency cases. He receives high-quality reports of findings for a predictable monthly fee. Even CT scans come to him from Diagnostic Network AG ready for use and he does not have to give it his attention. The teleradiology router begins to transmit images to the „teleradiologist“ immediately the scan is complete.

Michael Schreiber, MD:

„We receive a high-quality report of findings from the radiologist on duty within a few minutes after the CT examination. For economic reasons my hospital cannot operate its own CT scanner.“



Michael Schreiber, Medical Director at the Surgical and Internal Medical Hospital, Munich

The Diagnostic Network AG benefits from having a large group of competent radiologists as partners with Doctor Möller, enabling it to provide its clients with an appropriate radiologist on demand. Specialists include pulmonary experts as well as radiologists with a specialisation in cardiology. A pulmonary hospital therefore is assigned a thoracic specialist and a cardiology clinic a cardiac specialist.

The business concept is simple to summarise: we offer hospitals and radiologists the option to purchase diagnostic services. Thus the two doctors developed their company as a competence centre for radiology services. The weekly schedule ensures that only one teleradiologist is on night duty while a second teleradiologist is on call for back-up. The system itself even detects if the radiologist on duty is assigned too many cases; the maximum is set at 25 examinations per night. If the number of requests exceeds this, then the system automatically summons the teleradiologist on call. Weekends require two radiologists to be on the duty roster.

A JiveX server in the company computer centre in Dillingen controls the transmission of images among the teleradiology partners. Here all images are stored also on the JiveX ASP. A back-up server in a separate building enhances security, minimizing the possibility of both systems going down simultaneously due to fire or flood. If the worst comes to the worst, an emergency plan provides for printing images in a conventional manner with a laser printer and taking them by taxi to the closest hospital with available services. The patient is the one who benefits most from the teleradiology network. Reif and Möller and their colleagues provide a modern, cost-effective, national and regional service. Their vision is to provide prompt care for every patient through superior diagnostics. Too many hospitals are still without computerised tomography. Patients should no longer be unlucky enough to find themselves in a medically underserved area. Doctors Emil Reif and Torsten Möller in Dillingen are convinced of the benefits of teleradiology. A constantly growing clientele validates the concept conceived by these visionaries.

Guido Gebhardt

► **Torsten Möller, MD**
Radiologist

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