

A photograph of four medical professionals in a hospital setting. On the left, a large monitor displays a blue-tinted axial CT scan of a human head. In the center, a woman with short dark hair is looking down at a tablet. To her right, a man in white scrubs is also looking at the tablet. On the far right, another man in a white lab coat is looking towards the group. The background shows a clinical environment with a large white medical machine, possibly a CT scanner, and some cabinets.

GOETHE UNIVERSITY HOSPITAL  
LONG-TERM SECURITY  
FOR PATIENT DATA

FLEXIBILITY, INDEPENDENCE AND FUTURE  
RELIABILITY AS STRATEGIC DRIVERS OF THE IT  
INFRASTRUCTURE

*"iCAS has convinced us in practical use over the past ten years and has developed from a PACS archive to a central pillar of our IT infrastructure thanks to its versatility."*

Robert Hasenstab, Head of IT at the hospital KGU



# KGU FRANKFURT

## GOETHE UNIVERSITY HOSPITAL FRANKFURT (KGU)

### Industry:

Healthcare

### Background:

Need for a flexible, compliant and cost-efficient storage solution for the implementation of electronic patient records.

### Challenges:

At the beginning of the project, the introduction of electronic patient records was the driving force to adapt the IT landscape of the KGU. This included legally compliant long-term archiving. In order to keep pace with the development of hardware and applications, the flexibility and independence of the archive was paramount.

### Solution:

iTernity iCAS in combination with HPE standard servers and storage

*The University Hospital Frankfurt is the clinical centre of the Johann Wolfgang Goethe University Frankfurt am Main.*

## THE SUCCESS AT A GLANCE:



With the installation of iCAS, the University Hospital was able to set up the basis for a cross-departmental central archive



Standardized interfaces allow the connection of different business applications (PACS, ECM, administration, etc.)



Compliance with strict legal requirements in the healthcare sector



Hardware independence and scalability allow maximum flexibility

## LONG-TERM SECURITY FOR PATIENT DATA

Safely storing, keeping available, and managing patient data in the long term is an enormous challenge for the Goethe University Hospital in Frankfurt (KGU). The University Hospital employs around 4,600 people and is one of the largest medical centers in Hesse (Germany) with about 1,500 beds. The connection of patient care, research and teaching at a university hospital results in highly complex processes for the IT department of the KGU.

In the medical environment, large data volumes need to be stored and kept available for long periods of time. Additionally, hospitals have to comply with strict legal requirements. The implementation of a future-proof and flexible solution for the storage of digital patient files, x-rays and findings, but also for invoices, e-mails and documents should simplify this challenge. So the KGU was looking for an archive solution that ensures optimal integration with the ECM system and the PACS.



## ON THE WAY TO THE ELECTRONIC PATIENT RECORD

Patient records often contain several hundred pages per person. In paper form, this can not only be confusing and time consuming to work with, it also takes up a lot of costly physical storage space. Therefore in 2008, the KGU started the creation of digital patient records. For this purpose, all existing documents were first scanned and stored digitally.

One of the biggest challenges of longterm archiving is to store the data in a legally compliant and future-proof manner. Both the legal framework and the storage/application infrastructure may change over the prescribed retention period. Central to the success of the electronic patient record is thus not only the reliability, but also the flexibility of the longterm archive.

## CENTRAL ARCHIVE WITH ECM AND PACS CONNECTION

In order to secure X-ray images, PACS data and other privacy-related patient data over the long term, the KGU opted for the Software-Defined Archiving solution iCAS. iCAS provides direct integration with the existing ECM platform (OS|ECM) and the storage infrastructure. For the University Hospital, the smooth integration of existing applications - ECM, PACS and other future systems - was a major argument for the use of iCAS.

In a first project, an audit-proof imaging archive was set up by connecting the PACS to iCAS. Around 30 TB of inventory data were stored in the iCAS archive with retention set for 30 years in an audit-proof manner. More than 12 TB of data are added to these annually, with a strong upward trend. Robert Hasenstab, Head of IT at the hospital, describes this structure of an audit-proof image archive as "a main pillar of the IT infrastructure of the KGU."

## INTERACTION OF SEVERAL COMPONENTS AND SYSTEMS

*"The overall solution with iCAS stood out among other solutions due to its hardware independence and could be integrated into our existing infrastructure such as the storage network and the virtualization solution," explains Robert Hasenstab. "By combining the ECM and the archive backend, we have laid the foundation for a hospital-wide data management and audit-proof archive and we can flexibly and easily extend this basis."*

Following the successful implementation of iCAS, further steps were taken to transfer the findings and medical reports from the existing information systems to the audit-proof archive: data from the hospital information system AGFA Orbis, from the laboratory information system Roche Swisslab, from the radiology information system GE Centricity and from the radiation therapy system Mosaicq OIS. In total, there are over 80 applications/ modalities of different providers in the radiology and cardiology department of the KGU.

However, the iCAS infrastructure will not only be used in this area, but also be available to the entire hospital as a central archive.



## VISIONARY AND FUTURE-PROOF PROJECT

The initial requirements of the hospital for hardware independence, compatibility and flexibility were directly put to the test by the follow-up projects.

*"It was particularly important for us that all existing and future applications and departments can access and work with the central archive," explains Robert Hasenstab. "iCAS has convinced us in practical use over the past ten years and has developed from a PACS archive to a central pillar of our IT infrastructure thanks to its versatility."*

The topic of long-term archiving is not only important for the KGU from a legal point of view. The oncological focus of the clinic requires frequent access to older data if, for example, a radiation therapy treatment has to be performed again after a few years. That way, patients and hospital staff also benefit from the central long-term archive. In addition to the imaging techniques, iCAS is now established in other departments of the KGU and secures important SAP data, e-mails and other administrative data. In future, videos will increasingly be archived with the solution, as they are gaining more and more relevance in everyday clinical work, such as in teaching or in the production of evidence for operations.

## BONUS POINT: COST EFFICIENCY

The implementation of iCAS has also resulted in changes in the overall cost (TCO) of the IT infrastructure. In addition to the low licensing costs, the KGU was able to further reduce IT costs by using additional functionality of the software solution.

*"Today, iCAS mirrors data across two sites and verifies data integrity with automatic self-healing. As a result, iCAS takes over additional functions and we are saving costs for additional tools,"*

explains Robert Hasenstab. The resolution of all media disruptions ensures easier migration processes in the long term and an enormous longevity of the solution. An expansion of the iCAS archive is easily possible at any time so that the hospital can look forward to further data growth without worries. With the iCAS archive architecture, the KGU works with an application-neutral and vendor-independent platform for long-term archiving.

*"Scalability, revision protection and simple integration speak in favor of the solution and also make our facility a modern medical service provider in the IT sector," sums up Robert Hasenstab, Head of IT at the University Hospital.*

## LONG-TERM OBJECTIVE: STANDARDIZATION AND HARMONIZATION

The future strategic direction of the KGU goes clearly in the direction of an IHE archive, in which iCAS is to play a central role. IHE stands for Integrating the Healthcare Enterprise and is an initiative of users and manufacturers to standardize data exchange between healthcare IT systems. Robert Hasenstab has no doubt that the hospital is on the right track with its Software-Defined Archiving approach:

*"Long-term partnerships are extremely important to us and with iTernity we have found a reliable partner. Equally important, however, is the independence of certain systems and manufacturers. This is the reason why we clearly rely on the open software solution iCAS in our development towards an IHE archive."*

## DATA ARCHIVING MADE SIMPLE

iCAS is a flexible middleware for retention management & WORM storage. The solution integrates perfectly into heterogeneous infrastructure landscapes. While you take care of your core business, iCAS reliably protects the integrity and availability of your data in the background.



### HARDWARE INDEPENDENT

The archive intelligence is tied to the software-layer, not to the hardware



### COMPLIANT

iCAS assures regulatory and compliance requirements



### FLEXIBLE

Middleware between your business application and the storage infrastructure



### TAMPER-PROOF

iCAS provides WORM storage, encryption and retention management

## THE CENTRAL PLATFORM FOR YOUR DATA MANAGEMENT



iCAS protects data integrity and availability, even if the underlying storage technology and hardware changes in the future. As a software-defined solution, iCAS lays the foundation for audit-proof data archiving and protects your investments in hardware, software and services.

iCAS adapts to your IT infrastructure and adds compliance, data integrity protection and WORM storage (Write Once Read Many) to your existing systems.



iTernity

WE TAKE YOUR  
DATA SECURELY  
INTO THE FUTURE

We protect your business-critical data. The trust you place in us is our motivation and an investment in the future. The result: more security, less effort, no worries.

Our DNA is archiving, our mission the long-term availability and integrity of all types of corporate data. Our focus is on your challenges, whether data protection, cost pressure, data growth, cyber attacks, lack of time, or complexity – we take your data securely into the future.



## CONTACT OUR EXPERTS

Heinrich-von-Stephan-Straße 21 | 79100 Freiburg | Germany  
info@iTernity.com | +49 761 590 34 810 | www.iTernity.com