

# Integration Is the Key to Success

The expression HIS/RIS/PACS integration at first sounds a little daunting, as if it were pretty complex. But this impression is not correct. On the contrary, hospitals that choose to forego the integration of HIS, RIS and PACS run into incredibly complex problems.

*By Dr. Thomas Kauer, University Hospital of Erlangen, Germany*

The abbreviations HIS, RIS and PACS have long become commonplace for most physicians, nurses and administrators: HIS stands for Hospital Information System, RIS stands for Radiology Information System, and PACS is the abbreviation for Picture Archiving and Communication System. PACS archives images and films from radiological imaging systems, RIS supports the communication of the radiology department with other clinical departments, while HIS is the information and data processing system that constitutes the central IT instance within the overall network structure of a hospital.

## Assembling the Parts to Create a Whole System

While the 1990s marked the beginning of the individual introduction of HIS, RIS and PACS in most clinics, the focus of IT efforts today is on integrating these networking systems. If the phrase were not already so well known from a different context, one could almost say: "What belongs together

will now grow together." – But, just what does that mean?

Originally, RIS and PACS were implemented as isolated systems in radiology departments, primarily for organizational reasons and to facilitate internal work processes. Both RIS and PACS contribute to measurable efficiency improvements: they simplify the communication between the various departments, the radiology department saves film materials, digitally archived image material can be found considerably quicker than by searching through a conventional image archive for hours – and these are just some of the three more obvious advantages. However, radiology departments are not isolated departments. Rather, they constitute "only" one of many service points in the overall structure of a clinic. Since radiology imaging data and reports simply are not sufficient for diagnostics and therapy, the voices asking for an integration of RIS and PACS into the entire information system of a hospital, i.e. HIS, have grown louder. This brings us back



**HIS/RIS/PACS INTEGRATION** is a term that has become increasingly popular in healthcare. If intelligently executed, it enables the seamless data exchange between the different departments of a hospital.

to HIS/RIS/PACS integration, or letting systems that belong together grow together.

### No Zapping Between Programs

Clinics increasingly are asking for fast and secure access to all information from the various systems, without manual intervention and multiple data entry (e.g. patient

data). “Getting all relevant information from one program with one database” could be the motto for HIS/RIS/PACS integration at a hospital: no system breaks, no bothersome back and forth between various applications, no modality- or system-proprietary windows on PC screens that make it difficult to directly compare information. One vital prerequisite for letting the various programs communi-



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cate consists of a unified standard for data exchange. Such a common language was created with DICOM and HL7. All Siemens systems for HIS, RIS and PACS applications understand this language.

The integration of partial radiological information systems into the superordinate hospital information system has numerous advantages. Here are three examples from the clinical practice.

### Marienkrankenhaus, Hamburg, Germany

Ever since the Marienkrankenhaus in Hamburg has integrated its RIS and PACS into the HIS (*medico//s*), all relevant information can be called up online at any location in the hospital: Laboratory results, OR reports, pathology reports, medical documentation, supplemented now by radiology imaging and text reports. Pascal Haag, who is responsible for the system integration of PACS at the Marienkrankenhaus, is full of enthusiasm for the solution he helped develop: "No paper or film material is required anymore, from admission to all medical findings, including imaging. Everything is electronic." From his perspective, the solution has an outstanding integration depth.

### Integration: A Short Definition

Integration has become one of the most frequently used expressions in healthcare over the past years. In the context of integrated healthcare, the term refers to information technology that networks various healthcare providers, such as clinics, practicing physicians, rehabilitation clinics, etc. HIS/RIS/PACS integration refers to internal clinical workflow as well as to workflow with these external partners.



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Far-reaching advances in hospital networking IT also have been made in other places.

### Alegent Health Lakeside Hospital, Omaha, Nebraska

At the Alegent Health Lakeside Hospital in Omaha, Nebraska, physicians, nurses and business administrators can access all required information on their monitors – with only a few mouse clicks. As the hospital's CEO Wayne Sensor puts it, Lakeside represents the "hospital of the 21st century". The hospital, which opened its doors in August 2004, features an IT integration depth that can justifiably be called state of the art. Instead of a conventional HIS, the Lakeside Hospital uses the workflow management system Soarian® by Siemens.

This integrates the clinic's imaging systems such as X-ray units, computed and magnetic resonance tomography, ultrasound and mammography. The completely digitalized workflow significantly contributes to the greatest possible cost efficiency for the

newly established hospital and at the same time offers the highest medical quality.

### St. Michael's Hospital, Toronto, Canada

St. Michael's Hospital in Toronto is the first institution in Canada to manage its workflow via Soarian; HIS and PACS were integrated in June of 2004. John King, the Executive Vice President of Hospital Services, sees this new IT concept as a "revolutionary IT solution". More than 4500 authorized hospital employees have the ability to call up patient information, images and laboratory data from a single source. Naturally, not all users have access to all information. Access to the system is protected by security measures (e.g. user privileges) so that users can only see the portion of patient data that is relevant for their specific scope of work.

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