

# Outsourcing Of Web-based PACS

## Total Cost of Ownership Can Be Minimised

Advancing healthcare technologies such as CT and MRI are generating greater numbers of images per procedure and patient at an increasingly rapid pace. This poses a tremendous challenge in terms of the display and management of medical imaging data. The key challenge is to maintain a high availability throughout the whole workflow, from acquisition and reconstruction, to visualization and diagnosis, down to management and archiving of this data throughout the hospital enterprise.



Web-based PACS (left monitor) in conjunction with tightly integrated 3D thin client technology (right monitor) satisfy all the needs in modern hospitals for high-performance 2D and 3D visualization and navigation.

Hospital IT infrastructure must be set up to allow short loading and transfer times and consistent access to all relevant imaging data (original and processed diagnostic images) throughout the hospital facility.

### Expanding Hospital Data Volumes Demand Optimized IT Structures

To do this, hospital infrastructure has to meet certain prerequisite requirements if it is to provide medical imaging data in the necessary quality. A web-based PACS enables multiple users to simultaneously access the data throughout the entire hospital facility. The integration of advanced 3D capabilities allows clinicians and radiologists to access advanced 3D viewing, navigation, and measurement functions for diagnosis directly within the PACS workflow. 2D and 3D data are

available in real time for diagnosis across all hospital departments, thus optimizing the efficiency of the diagnostic workflow and reducing treatment time for patients.

In order to meet these challenges, hospitals should develop an enterprise image management strategy. An important criterion for an overall strategy of image management is the total cost of ownership. Outsourcing providers and imaging centres can host complete web-based healthcare IT applications, including Internet-based PACS, and retrieve medical imaging data for interpretation at any time, and can also archive image data in the data centre. An outsourcing model enables hospitals, clinics and physicians to profit from precisely these functionalities.

In cooperation with 7 Medical Systems, Acuo Technologies and Mercury have deployed Acuo Technologies' software "Powered by Acuo" enabling a complete hosted

solution for healthcare IT, including diagnostic image information and other management systems. Under this partnership, hospitals, clinics, imaging centres and physicians are able to access software from Mercury's web-based PACS locally via Acuo's peer-aware architecture, or centrally via datacentre-hosted solutions, creating a powerful and redundant grid-computing environment. Radiologists and clinicians can access the PACS solution at any time via the Internet and retrieve medical imaging data for interpretation as well as archive image data in the data centre. The hosted healthcare IT solution offers comprehensive workflow optimisation and natively supports industry standards such as DICOM, IHE and HL7. Furthermore, the hosted IT infrastructure comprises 7 Medical System's 7i Suite that provides solutions for virtual storage management, backup and disaster recovery, brokering transactions between clinical and diagnos-



Imaging centres are hosting completely integrated healthcare solutions, thus optimizing the efficiency of the diagnostic workflow and reducing treatment time for patients. (Courtesy of Acuo Technologies)

tic applications, and gateway solutions for image distribution, compression and encryption.

### Outsourcing Model Reduces Costs Significant

An Application Service Providing (ASP) model reduces upfront capital expenditures and total cost of ownership, as users only have to pay a usage fee, for example per study or month. At present, 7 Medical Systems 7i Suite can lead to savings upwards of 83% versus traditional in-house PACS deployments. Additional investments for IT infrastructure and software licensing are not needed, because the necessary infrastructure is available at the data processing centre. The outsourcing provider undertakes all maintenance of

hardware and software, which dramatically reduces expenditure of time and costs by the user. The highest degree of data protection is ensured because data is redundantly stored across multiple data centres and is accessed via Virtual Private Network (VPN) technologies.

In this way, clinics and healthcare organisations can take advantage of an outsourcing model. They are able to profit from the expertise and resources of a hosting provider and so reduce the total cost of ownership. At the same time, clinics can improve the quality of their diagnostic workflows and reduce the time needed for treatment of patients. 10 imaging centres and clinics in the United States have already signed up for ASP services.

### Authors:

Stefan Kachel,  
*Head of Product Management, Life Sciences, Mercury Computer Systems, Nuremberg, Germany*

Shannon Werb,  
*Chief Technical Officer & Chief Operating Officer, Acuo Technologies, St. Paul, USA*

Jason Studsrud,  
*CEO, 7 Medical Systems, Minneapolis, USA*

### Contact:

Gabriele Strasser  
Mercury Computer Systems GmbH,  
Fuerth, Germany  
Commercial Imaging and Visualization  
Tel.: +49 911 97341 205  
Fax: +49 911 97341 10  
gabriele.strasser@mc.com  
[www.mc.com](http://www.mc.com)