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# EDCO FORUM<sup>®</sup>

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## THE PENTAX EPK-i

*The First High-Definition+ Programmable Video Endoscopic System*

With this month's commercial launch, the **EPK-i Video Endoscopic System** will become the world's most intuitive and powerful video processor. Developed by **PENTAX Medical Company, a Division of PENTAX America, Inc.**, this ground-breaking, computer-controlled processor provides a spectacular image with an unrivaled resolution of 1.25 megapixels—which is approximately 50% higher than that from other endoscopic manufacturers—and offers the sharpest endoscopic image available. The EPK-i is the first digital processing system that allows users to make adjustments using a menu-driven touch screen, or by remote control, an option not offered by any other system. The user-friendly EPK-i has remarkable HD+ imaging, automatic physician customization, and on-demand benchmarking. The EPK-i is also capable of global networking and its Advanced Contrast Enhancements (ACE) uses sophisticated software to analyze and enhance the image area. This software, coupled with the EPK-i high-resolution capabilities, may help change the way physicians work by providing detailed imaging of mucosa topography and vascularity. And, although most image management systems are cumbersome, the EPK-i processing system has an uncomplicated setup, requiring no special hardware, and it integrates completely with the PENTAX **endoPRO**®.

A special advancement of the EPK-i software provides surface and contrast enhancements designed to bring out vascular patterns and texture of the mucosa with improved image quality that may help with diagnosis

or targeted pathology of diseases such as Barrett's esophagus or ulcerative colitis. Gottumukkala S. Raju, MD, Professor of Medicine at the University of Texas Medical Branch (Galveston, TX), says that if he had to sum up the EPK-i Processor in two words, he would say "beautiful resolution." Dr. Raju believes there are elements of the EPK-i that may allow him to better define potential abnormal findings that may not have been detectable with an earlier processor. "I think when you are looking at a lesion, you want to more clearly define it in terms of the surface architecture, whether it is smooth or has dots or grooves. The higher resolution of this processor makes it easier to do that. If you can see a lesion more clearly, it can make it easier for you to decide if you want to leave it or remove it and, if you choose to remove it, how best to do that. Furthermore, if you find a lesion that is a little more advanced in terms of the progression towards cancer, but is not yet cancer, the enhanced image might give the endoscopist a better chance of seeing it and identifying the margins."

The EPK-i was designed with many sophisticated processing capabilities. Alex Vidas, Product Manager with PENTAX, explains that a key requirement during the design of the EPK-i platform was to add functionality outside the traditional boundaries of a video endoscopy system. "It had to be more than just an instrument with phenomenal imaging. It had to become a real tool for the entire endoscopy lab. At the same time, we had to make it easier and more intuitive to use. These are generally opposing forces, but by making the EPK-i a networked, computer-

controlled system, we have been able to accomplish that goal.”

These processing functions operate in seamless coordination. PENTAX **i-Doc**, the programming feature, automatically recognizes each physician’s profile. By communicating with the management system over the network, PENTAX **i-Doc** can direct *any* local EPK-i processor to select and configure individual physician setting preferences, such as brightness, airflow, color balance, or contrast, prior to the start of any procedure, or it can adjust previously formatted settings. Other processing systems require manual input of individual information onto each processor. PENTAX **i-Doc** will save time by allowing physician consistency throughout the system. Furthermore, the EPK-i can detect which instruments have been plugged in, enabling the management system to verify that the correct instrument was selected for a procedure, or it can alert the user to a potential error. PENTAX **i-Trac** and the processor’s data repository can provide individual reports for physicians that denote, among other things, dates, room numbers, and projected and actual duration of procedures and scope usage, while providing automatic time-stamping of all procedure details. This benchmarking tool allows the user to easily take control of lab efficiencies and make smarter business decisions. PENTAX **i-Star**, along with Internet

access, provides on-demand remote service capability. If a lab encounters technical or other difficulties, assistance is just a phone call away. A PENTAX technician can directly access any data or images stored within the EPK-i, allowing rapid diagnosis and restoration of operation.

In addition to the EPK-i, the PENTAX **i-Flex** platform is the culmination of sophisticated and innovative research focused on instrument design. Alex Vidas points out, “recognizing that the handling characteristics of an insertion tube are based on more than ‘stiffness,’ PENTAX engineers took a variety of factors into account when designing the 90 series of endoscopes, including illumination capabilities, air/water channel and nozzle design, the ability to pump a higher volume of air into the body on demand, graduated insertion tube stiffness, and control of body ergonomics. When combined with other essential elements, these design components create instruments that will facilitate an endoscopist’s reaching the cecum 25% faster than with prior scopes, while at the same time achieving a more thorough examination more efficiently.”

“High-definition endoscopy brings a much welcome tool to our practice,” contends Roy Soetikno, MD, of Veterans Affairs Palo Alto Medical Center (Palo Alto, CA). “We will be able to see more

details of the surface architecture, and this will give us a better understanding of what is stored beneath the surface of the lining of the gastrointestinal tract.” Dr. Soetikno goes on to say that in using this technology, physicians will be able to detect more diseases earlier on, especially the precursors of cancer or early cancers. “We will be able to diagnosis abnormal findings while looking at the disease at the time of the examination. In many cases, physicians depend on the pathologist to look at the biopsy findings, but with the new detailed visualization, we should be able to make diagnoses right then and there.” This will also extend to the physician’s ability to treat the disease more quickly. “By understanding what the disease is, we can make better decisions at that time of the examination, such as deciding whether or not to remove a tumor. With the new high definition imaging, our endoscopic therapy will be more efficient and more effective.”

For more information concerning the PENTAX EPK-i Video Endoscopic System or PENTAX Medical Company, please call 1-800-431-5880; or visit the company’s Web site at [www.pentaxmedical.com](http://www.pentaxmedical.com).