Optimizing the Workflow of Radiologists
Meeting the Challenges of Today’s Reading Rooms

Radiology has long been at the epicenter of healthcare, with today’s reading rooms fast-becoming one of the busiest departments in the hospital network. The volume and complexity of images is continuously growing, creating an ever-increasing workload for radiologists. While recent advances in computer power and ergonomics are enabling physicians to better manage increased demand, Barco’s latest display innovations are particularly focused on solving the need to:

- View multiple images on a single screen
- Display high-res color and grayscale diagnostic images simultaneously
- Ensure consistent display illumination and image quality
- Reduce eye strain and reader fatigue

Optimizing Performance and Workflow with a Multi-Modality Display System

Barco offers a comprehensive medical imaging display system that sets a new bar for workflow efficiency and clinical performance in the reading room. The foundation of this solution is our flagship Coronis Fusion 6MP DL diagnostic display, supported by Barco’s MXRT-5450 - purpose-built for medical displays - along with the industry’s only online, fully automated Quality Assurance and calibration service for medical grade monitors, MediCal QAWeb.

The combination of these imaging tools creates a robust PACS display system, enabling you to rapidly interpret and process images thanks to high luminance, consistency and contrast for enhanced diagnostic precision. The result: a more productive, efficient and comfortable approach to managing your workload.
Improve Diagnostic Accuracy and Clinical Efficiency

The Coronis Fusion 6MP DL is the industry’s first 30-inch color LCD that can be used as two 3 megapixel heads or one seamless, wide-screen 6 megapixel display, offering you the freedom to organize your workspace any way you like. View chest X-rays or read multiple 2D and 3D CT, MR, cath and echocardiogram images. Or, display any combination of grayscale, color-enhanced and fused images – side-by-side on a single screen. The choice is yours.

The Coronis Fusion 6MP DL is part of an entire family of Fusion displays, including the new Coronis 4MP DL – offering either a seamless 4 megapixel screen or two 2 megapixel side-by-side heads – and the Coronis 10MP widescreen grayscale display for maximum imaging precision and flexibility.

“The Coronis 6MP DL is the only display on the market that meets the minimum matrix size of 2.5 line pairs/mm as stipulated by the American College of Radiology. This equates to higher resolution image viewing with less panning and zooming for a more effortless reading experience.”

“With all of the imaging modalities at my fingertips on one display, I don’t have to bounce around to different workstations for each type of study. You can’t believe how much time that saves in my day!”

George Ebert, MD, Vice Chair, Imaging Technology and Radiologist at Fletcher Allen Health Care; Associate Professor, University of Vermont College of Medicine.
Reduced Eye Strain

It comes as no surprise that numerous studies confirm that, by the end of their clinical reading day, radiologists are clearly visually fatigued, often experiencing eye strain that may impair visual acuity and reduce the ability to accurately interpret diagnostic images. The Coronis Fusion 6MP DL’s highly stable luminance reduces eye strain, while the display’s protective, non-reflective glass minimizes glare so it’s easy on the eyes, even during long periods of viewing. This is a significant benefit in maintaining precise diagnosis of patient images.

High Resolution Grayscale and Color

The Coronis Fusion 6MP DL also enables unparalleled grayscale clarity, even when viewed simultaneously with color images at their highest resolution. Combining images on a single display enables you to view multiple modalities without leaving your workstation, allowing you to work more efficiently and maintain focus. Best of all, the high accuracy of both grayscale and color images ensure a confident diagnosis.

“From a reading point of view, I knew we’d benefit from image enhancement with the color monitors, but the real surprise is reduced eye strain. It’s a significant advantage when you consider that many of us are reading ten or more hours a day... it makes a big difference!”
Val Phillips, MD, Managing Partner of North Metropolitan Radiology Associates, serving Gwinnett Medical Center.

“Early on, I was very critical of the concept of doing both on the same display because the grayscale images were not high quality. Then, Barco developed the 6MP – it’s the first display that I’ve felt confident could do both well. They’ve been a big success for us.”
Spencer Gay, MD, Professor of Radiology and Residency Program Director at University of Virginia Health System.

“In the past with CT/MR perfusion studies, we had to shift between grayscale PACS and a color-enhanced system to view the patient images, interrupting our workflow and slowing the review process. With the Coronis 6MP, we can read the entire study on one screen for greater efficiency.”
Miral Jhaveri, MD, Assistant Professor and Director of Informatics in the Neuroradiology department at Rush University Medical Center.
Consistency Across the Network

With increased focus on telemedicine and remote collaboration between radiologists, the importance of consistent illumination, color and contrast is critical for high-integrity image sharing. Barco displays are manufactured with a patented I-Guard sensor – the only active management sensor available on the market – assuring radiologists of 24/7 DICOM compliance and guaranteed image stability on every display across the network. Conversely, other medical displays offer only passive sensors, which require user intervention for manual adjustments. Consumer off-the-shelf (COTS) displays lack the high luminance needed for most medical imaging modalities and typically have less than half the lifespan of medical imaging displays.

High, Stable Luminance

Superior, stable luminance produces the highest dynamic contrast range, enabling radiologists to more easily detect the smallest abnormalities. Barco’s patented Uniform Luminance Technology provides consistent illumination across the entire screen, corner to corner, ensuring precise image clarity and accuracy. The Coronis’ ambient light compensation feature adjusts screen luminance based on your reading room lighting so you can view images with perfect illumination in any environment.

“Manufacturers of medical-grade displays have an entirely different mindset [than COTS display manufacturers]. They want to guarantee a diagnostic image of consistent quality that meets DICOM standards is always displayed.”
David Hirschorn, MD, Director of Radiology Informatics at Staten Island University Hospital and Researcher in Radiology Informatics at Massachusetts General Hospital.

“Matched monitors allow you to see everything consistently, with no worries that you’ll be fooled by variations in color. Barco’s Medical QAWeb auto-calibration capabilities are essential to maintaining this color accuracy.”
George Ebert, MD, Vice Chair, Imaging Technology and Radiologist at Fletcher Allen Health Care; Associate Professor, University of Vermont College of Medicine.

“Higher-luminance displays yield more efficient search performance. The true-negative dwell times and number of clusters are suggestive that lower-luminance levels prolong the search and recognition of normal, lesion-free areas compared with lesion-containing areas.”

Department of Radiology, University of Arizona, Tucson 85724, USA.
Enhance Display Speed, Control and Compatibility

The **MXRT 5450 high-performance graphics board** ensures ultra-fast, smooth loading, roaming and manipulation of images in every resolution. It not only improves application performance in multi-monitor scenarios, but also consumes less power, installs easily and results in reduced cost of ownership.

With the Barco MXRT 5450 display controller, you enjoy expanded capabilities and higher performance to improve workflow efficiency in the reading room and throughout your facility, including:

- Enhanced volume rendering
- Efficient GPU bandwidth usage
- Faster image download
- Improved screen-to-screen copies
- Ability to link images
- Creation of large data sets

Barco’s MXRT 5450 display controllers are up to 400% faster than gaming graphics boards for imaging applications, and are designed and built specifically to handle the unique demands of 2D and 3D medical imaging applications.

Validated for Guaranteed Performance

Unlike makers of commercial gaming boards, Barco is the only company that optimizes its display controllers specifically for use with our medical displays; and, combined with our innovative automated QA software, you benefit from an integrated medical imaging display solution.

- **Extensive validation with leading PACS companies**
  Barco collaborates directly with the engineering teams of workstation vendors to ensure compatibility across the desktop.

- **One vendor, one support for both displays and graphics boards**
  Using Barco as your single-source provider, you benefit from one dedicated support team for all of your medical display component needs.

- **400% faster than gaming graphics boards**
  Purpose-built for imaging applications, the MXRT 5450 is designed specifically to handle the unique demands of 2D and 3D medical imaging applications.
Ensure Peak Performance and Peace of Mind

MediCal QAWeb plays an integral role in optimizing Barco’s Coronis Fusion display system, providing the quality assurance to guarantee 100% image consistency and uptime via automated calibration and QA of our full line of medical grade displays.

Built on the application service provider (ASP) software service model, MediCal QAWeb is the only complete, online service for automated quality assurance of PACS displays, providing remote, secure management to ensure consistent display performance and image quality. Radiologists can enjoy absolute confidence in the equipment they use every day to make life-critical decisions, thanks to:

- Continuous, automated calibration, without the need for manual adjustments
- Consistent grayscale quality and color accuracy
- Remote, proactive interventions and problem-resolution maximize display uptime
- 24/7 guaranteed DICOM compliance
- Intervention-free operation – centralized management and control
- Improved procurement and budgeting with asset management capabilities

MediCal QAWeb facilitates fast issue identification, with automated corrective actions built into the system. While others may claim to offer comprehensive automated QA, only Barco provides a truly online, real-time QA solution that promotes maximum availability and uptime of a healthcare facility’s entire network of displays. Barco’s MediCal QAWeb application is current used by hundreds of healthcare facilities, managing thousands of medical displays to enable physicians to make confident clinical decisions the first and every time.

MediCal QAWeb Mobile also conveniently runs visual calibration and dynamic QA on today’s mobile devices. Using any mobile tablet, you can ensure DICOM-quality image representation and verification for all of your medical displays on the network. When used with an authorized* viewing application, QAWeb Mobile even allows diagnostic reading when a workstation is not available.

“MediCal QAWeb is a huge asset to us, reducing the manpower needed to keep our entire medical imaging display installed base running at an optimum level.”

Elizabeth Kleiner, PACS Systems Administrator at Riverside County Regional Medical Center

“We especially depend on the system alerts that QAWeb generates to inform us of a display issue, many of which can be resolved remotely without a PACS administrator having to visit the workstation. It’s also a great tool for notifications and for communicating among our enterprise.”

Scott Alloway, Senior PACS Administrator, Bon Secours Health System, Inc
Clinical Performance that Matters

Barco’s diagnostic display solution – featuring the Coronis Fusion 6MP DL, the MXRT 5450 display controller, and MediCal QAWeb service – boosts clinical performance in all the ways that matter: faster image processing, improved workflow efficiency, and increased diagnostic accuracy. Designed and built to offer you the flexibility and control you need, our multi-modality solutions enhance your productivity while ensuring a more comfortable viewing experience.

Contact Barco Today
See how Barco’s flagship medical imaging solution can make a positive difference in your reading environment. Contact Barco today for more information and to schedule a demonstration.

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* Third party application that has obtained all required registrations and certifications, such as FDA 510(k).