

Carestream

DR Smart Room

Efficient. Consistent. Intelligent.

Optimize Your Workflow with the Power of AI.

SMART IMAGING SOLUTIONS



Imaging Just Got a Whole Lot Smarter.

We are poised on the edge of a new era in Radiology.

The application of Artificial Intelligence has already begun to add great value across the entire imaging chain – from capture to diagnosis. It promises major gains in efficiency, which in turn may lead to a higher standard of care and better outcomes.

For example, Carestream's Eclipse, the power behind our Imaging Software, goes beyond image processing to deliver outstanding clinical value for image capture and workflow.

Our Smart Rooms offer improved features, for faster, more efficient exams and enhanced workflow. Automated positioning and exposure settings provide uniform protocols for similar exam types. This provides image consistency for improved diagnostic confidence.

Advantages at a Glance

- New features, for faster, more efficient exams and enhanced workflow.
- Automates positioning and exposure settings provide uniform protocols for similar exam types.
- Provides image consistency for improved diagnostic confidence.
- Optimizes workflow and reduces repeats through automated equipment positioning, patient and pose verification, and automated collimation field.
- Improves image consistency and optimizes radiation dose through automated technique selection based upon the patient's size.
- Promotes improved infection control by reducing the need for direct radiographer and patient contact.



Meet the Power Behind Our Smart DR Workflow.

Eclipse is the engine behind our innovative imaging software. It uses AI technology and proprietary algorithms to significantly increase the value of the entire imaging chain, from capture to diagnosis.

Our Advanced Smart Features automate tasks and workflow steps to streamline processes, improve radiographer productivity, save time and enhance patient care.

All our Smart Features that automate tasks also include a manual override, so that radiographers always maintain control and can change the system settings, as needed.

 **8.4**

Customers saw an average decrease of 8.4 seconds in time to first exposure which saves 140 min/1000 first exposures.*

Imaging Software Powered by

 Eclipse

*During customer site evaluations using Carestream DR Smart Room Assist features.



Patient-Position Monitoring

Radiographers can monitor their patients from the operator console through a live camera view and see if the patient has moved out of position.

Availability **SRAP** | **SRP**

The Power of Smart-Room Capabilities.

Smart DR Workflow uses AI to streamline common tasks.

For busy departments with limited resources, our Smart Room can help automate tasks for radiographers enabling faster exams, enhanced patient throughput, greater productivity, and improved patient care.



16%

Customers realized an average reject rate reduction of 16% from their current rates.*



Audio Assist

Bi-directional audio assist allows two-way communication between the radiographer and patient, utilizing customizable audio guidance presets and direct audio. With direct audio, radiographers can easily provide instructions to their patients in their native language – helping guide them through the procedure, for faster, smoother exams. Availability **SRAP** | **SRP**



Virtual Long-Length Imaging (LLI)

This feature allows the technologist to set and adjust the auto-LLI exposure region from the operator console on the live camera view – supporting faster LLI workflow, improved productivity, and a reduction in work intensity. It also delivers improved imaging consistency, while helping prevent anatomy clipping to reduce retakes.

Availability **SRAP** | **SRP**

*During customer site evaluations using Carestream DR Smart Room Assist features.



Patient Picture

Allows the radiographer, from the console, to capture photos of the patient concurrently with the diagnostic image or manually. These photos are delivered to the physician along with the patient record to show positioning and provide additional clinical context. Unwanted pictures can be easily deleted prior to delivery.

Availability **SRAP** | **SRP**



Virtual Collimation

To accelerate exam time, this feature enables the radiographer to adjust the collimation directly from the operator console using the live camera view. Faster collimator adjustment speeds workflow helps reduce work intensity and enhances imaging consistency. Virtual Collimation allows the radiographer to further adjust the collimation from the console to reduce radiation exposure to the patient and avoid clipping anatomy. You can also count on a reduction in anatomy clipping, for fewer retakes and lower dose. Availability **SRAP** | **SRP**

Positioning Overlay

Positioning the patient for optimal imaging can be a challenge. This feature displays the AEC cells and detector boundary on the live camera view at the operator console, so the radiographer can confirm that the patient is ideally positioned within the imaging field prior to the exposure.

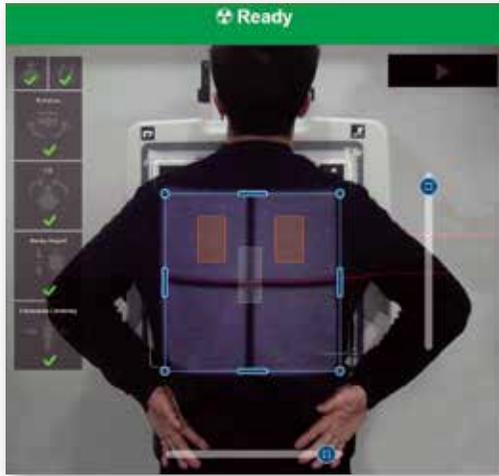
Availability **SRAP** | **SRP**

Align Assist

Align assist indicates the alignment between the tube head and detector and tube head angles for easy viewing by the radiographer. This helps speed optimal alignment and positioning when the detector is outside of the bucky. Highly beneficial for tabletop and stretcher imaging, as well as for exams of wheelchair patients, Align Assist supports consistency, reduced retakes, and faster workflow.

Availability **SRAP** | **SRP**





Smart Patient Positioning*

The live camera view is augmented with overlays for patient position correction/verification, pose verification, and detector boundary.

This allows for more accurate alignment and consistent image acquisition. It also reduces the need for physical contact between the radiographer and patients – a huge benefit when direct contact with potentially contagious patients needs to be minimized.

Availability **SRP**

Smart Auto-Position*

Input from the camera is used to assess a patient's height and size, and to ensure that the patient is standing out of the equipment's path. The wallstand and tubehead automatically move into the right position – vertically only, and at a slow speed, for safety.

Availability **SRP**



Smart Technique*

A recent study¹ published in the Journal of the American College of Radiology reports that, on average, 18% of imaging exams require retakes, with 15% of those retakes due to exposure issues. Carestream's Smart Technique automatically selects the appropriate acquisition technique based upon the patient's size and verifies technologists exposure settings.

This can eliminate up to 492 retakes every year. And because retakes require about three minutes each, this could save more than 24 hours each year – while it enables faster dose setting and reduces overexposures.

Availability **SRP**



Smart Collimation*

This feature automatically adjusts the collimation field based on the detector size and patient position to provide image consistency and help reduce anatomy clipping and retakes.

Availability **SRP**

Video Assist

This feature prompts patients with photos on a supplemental monitor to guide them on how to properly position themselves for the exam. This helps minimize close radiographer/patient interaction – especially critical to reduce the risk of infection when imaging contagious patients.

Availability **SRP**



Smart Image Orientation*

Carestream's Smart Image Orientation feature applies AI to automatically display chest images in the proper orientation. This is key, as a study² presented at the 2019 Conference on Machine Intelligence in Medical Imaging reported that 83% of all bedside chest X-rays require manual intervention to rotate images – requiring 19.59 hours of manual clicks over a period of one year.

According to this study, this feature has the potential to reduce those 19.59 hours to just seven minutes of clicks per year – a dramatic time savings to accelerate workflow for radiographers, reduce costs and allow images to be sent to PACS more quickly.

Smart Quality Control*

Contrast Noise Ratio (CNR) notifies users when the acquired image is outside the preset target contrast and lower limit range – allowing radiographers to make corrections as needed to ensure optimal image quality.

The Anatomy Clipping feature uses AI to outline areas of the chest anatomy that may have been collimated off the image. This allows radiographers to quickly determine whether a retake is needed, which minimizes recalls.

Our Deviation Index feature quantifies the deviation of the actual exposure index and notifies users if it's outside the preset target range – again, so that radiographers can make corrections that ensure the best possible image quality.

NO MATTER WHICH ROAD YOU'RE ON,
WE'LL GET YOU WHERE
YOU NEED TO GO.

SMART IMAGING SOLUTIONS



Feature Availability	SRAP	SRP
Smart Room Feature	Smart Room Assist Package	Smart Room Package
Patient-Position Monitoring	●	●
Audio Assist	●	●
Virtual Long-Length Imaging	●	●
Patient Picture	●	●
Virtual Collimation	●	●
Positioning Overlay	●	●
Align Assist	●	●
Smart Patient Positioning		●
Smart Auto-Positioning		●
Smart Technique		●
Smart Collimation		●
Video Assist		●

Ai Uses Artificial Intelligence technology.

* Feature available for chest PA only.

[1 Unified Database for Rejected Image Analysis Across Multiple Vendors in Radiography](#). Kevin J Little, Ingrid Reiser, Lili Liu, Tiffany Kinsey, Adrian A Sánchez, Kateland Haas, Florence Mallory, Carmen Froman, Zheng Feng Lu.

[2 Leveraging Deep Learning Artificial Intelligence in Detecting the Orientation of Chest X-ray Images](#). Khaled Younis, PhD, GE Healthcare; Ravi Soni, MS; Min Zhang, PhD; Najib Akram; German Vera; Katelyn Nye; Gireesha Rao; Gopal Avinash, PhD; John Sabol, PhD.

A Community of Service and Support.

For dependable service, look to our Customer Success Network. We work continuously to improve your imaging performance, help you to innovate as needs change, and make the most of your budget and resources. Carestream's Customer Success Network surrounds you with a dynamic team of experts, with a Single Point of Entry for easy, customized access to the right people in every situation. You and your patients will benefit from the expertise and best practices only Carestream can deliver.



Eclipse: Harness the Power of Decades of Innovation.

Carestream's Eclipse is the engine behind our innovative imaging software. It uses AI technology and proprietary algorithms to significantly increase the value of the entire imaging chain, from capture to diagnosis.

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"Rx only"

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