



**AGFA**   
**RADIOLOGY**

# SmartXR<sup>®</sup>

## X-ray intelligence at work

Agfa's SmartXR<sup>®</sup> assistant offers you predictive workflow assistance, for improved productivity and consistent outcomes



**“If you have people with less training, technology can help them get the correct positioning or avoid retakes. It can support them to make sure that the image is consistent, with a good dose. Technology like SmartXR® can offer the solution for this.”**

**Prof. J. De Mey**  
Chair Radiology UZ Brussels



**SMARTXR**



Acquiring X-rays is both a science and an art. So many variables, so many options, ... all requiring decisions and actions that take up time and impact your workflow.

SmartXR® Assistant helps you by lightening your workload and providing image acquisition support. From aligning the panel, to positioning the patient, to setting the precise dose and beyond, SmartXR® gives you a helping hand that guides you to greater operational and clinical performance. All while keeping you in control, at every moment.

### A new kind of smart care

SmartXR® puts Agfa's proven expertise in imaging into play. It brings intelligence to your digital radiography equipment at the point of care: before the image is even made. Integrated sensors and cameras are combined with powerful AI software. 3D machine vision, deep learning and machine intelligence work together to make your equipment more aware of the environment, your patient and your needs.

### Reach for a helping hand, at the point of care

SmartXR® doesn't take over your imaging process. You are always in control, with SmartXR® acting as your 'Assistant' to support a first-time-right image acquisition. A blinking light informs you when a parameter, alignment or position can be improved, and the system presents you with a suggestion. Then you use your own expertise to make the call.

# Your toughest imaging challenges deserve smart answers

Smart systems to increase your operational efficiency

## Reduce retakes

In clinical practice, a significant portion of X-ray images are not usable for diagnosis and have to be repeated. A 20% retake rate is not uncommon<sup>1</sup> when including bedside imaging. But retakes increase the patient's total radiation dose, decrease patient throughput, put extra strain on busy workloads and equipment, and escalate overhead costs. It's a situation that every hospital and imaging department wants to avoid, and SmartXR<sup>®</sup> is your ally!

## A productivity boost for your imaging workflow

By providing assistance during the more challenging steps of the imaging workflow, SmartXR<sup>®</sup>-enabled systems offer improved comfort and ease-of-use. From positioning, through technique setting, to post-processing; SmartXR<sup>®</sup> provides a helping hand to achieve consistent and diagnostic results efficiently.

<sup>1</sup> Little, Kevin J., et al. 'Unified database for rejected image analysis across multiple vendors in radiography.' Journal of the American College of Radiology 14.2 (2017): 208-216.

## LiveVision

LiveVision provides a first-person camera view of the patient, allowing remote patient positioning. Within the SmartXR<sup>®</sup> portfolio, it provides key information on the patient to both the SmartPositioning and SmartDose tools. By supporting reduced patient dose, fewer retakes and faster positioning, LiveVision helps to enhance both operational efficiency and clinical performance.







**“SmartXR® has fine-tuned some of our examinations. When we leave the room to go behind the screen, we still can see the patient via the camera. If we see them move, we can correct this before we do the exposure, saving the patient a dose of radiation.”**

**Harrison Jenefer (RLN)**

Senior Radiographer, City Hospitals Sunderland

**AGFA**   
**RADIOLOGY**

<sup>2</sup> Testing with board-certified radiologists has determined that Cesium Bromide (CR) and Cesium Iodide (DR) Detectors, when used with MUSICA® image processing, can provide dose reductions between 50 to 60%, compared to traditional Barium Fluoro Bromide CR systems. Contact Agfa for more details.

# Intelligent tools that help you enhance clinical performance and patient care



## Patient-tailored dose

Reducing patient dose is everyone's business. SmartXR® can help you to get the best image with the least dose reasonably achievable, tailored to the patient and the exam. Not only with tools that determine the right exposure dose, but also by helping you to avoid retakes – reducing the total number of exposures for the patient.

## Consistency

Consistent images are critical for following up on the patient's health issue over time: whether for a broken bone, a lesion or tumor, etc. But different positioning, angulation or exposure settings can create subtle variations between current and prior images. Comparison and follow-up become difficult – even when the image quality is good. SmartXR® helps support more consistent images, no matter who is using the equipment, or under what circumstances.



## Confidence

With SmartXR® tools providing image acquisition support, you have the confidence of knowing that everything is correctly configured to assure a good image.

## MUSICA® and SmartXR®: Intelligent processing for intelligent machines

SmartXR® and MUSICA® go hand in hand for 'first-time-right' image acquisition with the lowest possible dose<sup>2</sup>. MUSICA® image processing software automatically optimizes your output images. Self-adapting, it gives you more consistent image quality, regardless of the exam and imaging system type, for soft tissue and bone, etc. You spend less time to get the image quality you need, and don't require window levelling to adjust contrast and brightness.

By enhancing image quality, simplifying your workflow and improving productivity, MUSICA® and SmartXR® are the perfect partners to support your operational and clinical performance.

# The SmartXR<sup>®</sup> portfolio

The SmartXR<sup>®</sup> portfolio can give both X-ray rooms and mobile imaging an intelligence boost. You can choose from a range of tools<sup>3</sup> that guide you: to fewer clicks, fewer rejects, greater image consistency and more.



- > Faster accurate alignment
- > Reduced retakes due to misalignment and positioning
- > More consistent projections
- > Increased diagnostic confidence



## SmartAlign

Accurately aligning the panel to the X-ray source reduces image deformation and avoids grid cutoff, resulting in better images. SmartAlign assists you to make consistent projections and avoid retakes because of misalignment.

SmartAlign uses advanced sensing to give live feedback on the accuracy of tube-to-panel alignment during bedside or out-of-bucky exams. Making alignment faster, easier and more precise.

## SmartPositioning QA

SmartPositioning QA effortlessly supports improvement of patient positioning — reducing retakes and boosting diagnostic confidence over time. It empowers you to achieve accurate patient positioning even for less-common projections. You can include alternative positionings and validate the positioning after exposure by comparing your X-ray with predefined quality points. Seamlessly integrated into your workflow, SmartPositioning QA's intuitive support continuously enhances diagnostic quality. Patient positioning gets easier and more reliable with every use.

<sup>3</sup> The SmartXR<sup>®</sup> tools are available for specific Agfa DR room and mobile solutions. For more information, contact your sales representative.

<sup>4</sup> Little, Kevin J., et al. 'Unified database for rejected image analysis across multiple vendors in radiography.' *Journal of the American College of Radiology* 14.2 (2017): 208-216.

<sup>5</sup> Kaplan, Summer L., et al. 'Female gonadal shielding with automatic exposure control increases radiation risks.' *Pediatric radiology* 48.2 (2018): 227-234.

<sup>6</sup> Little, Kevin J., et al. 'Unified database for rejected image analysis across multiple vendors in radiography.' *Journal of the American College of Radiology* 14.2 (2017): 208-216.



Automatically getting exposure parameters that are correct for the specific patient, ensures the radiologist can get the most information from the image, saving both the radiographer and the radiologist time.

Prof. Dr. med. univ. Thomas Lehnert

Chefarzt of RNS Gemeinschaftspraxis Radiologie, Wiesbaden

- > Faster positioning
- > Reduced retakes due to positioning
- > More consistent positioning
- > Continuous learning
- > Remote repositioning



## SmartPositioning

Accurately positioning the collimation area can be difficult, especially with obese patients or for lateral views. In fact, poor positioning accounts for 68%<sup>4,5</sup> of image rejections.

SmartPositioning augments the LiveVision camera stream with smart overlays to project the image area onto the patient's body. The resulting augmented reality image also shows the location of the system's active exposure control cells, to help you avoid retakes.

Does the patient's positioning need to be adjusted? An augmented live view of the patient guides you, remotely or at the patient's side.

### POTENTIAL GAINS



### How many retakes can SmartPositioning help avoid?

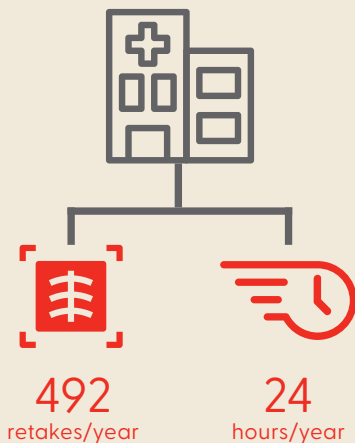
A case in point: a hospital imaging room sees 50 patients per day, 365 days<sup>6</sup> per year. On average, 18% of the X-rays have to be repeated and 68% of these retakes are due to problems with positioning. By eliminating positioning errors with SmartPositioning, the hospital can avoid 2233 retakes every year. As a retake takes on average about 3 minutes, this would save more than 111 hours per year.



- > Faster dose setting
- > Fewer retakes
- > Improved image consistency
- > Patient tailored dose



## POTENTIAL GAINS



## How many retakes can SmartDose help avoid?

A case in point: a hospital imaging room sees 50 patients per day, 365 days per year. On average, 18% of images result in retakes, and 15% of these retakes are due to exposure issues. By optimizing exposure with SmartDose, the hospital can avoid 492 retakes every year. As a retake takes on average about 3 minutes, this would save more than 24 hours per year<sup>9</sup>.

## SmartDose

When it comes to dose, one size does not fit all! When imaging a patient on a stretcher or a bed, for example, if you don't adjust the exposure parameters to the body type, you can easily end up with a dose that is six times higher than strictly necessary<sup>7,8</sup>. But it is not always easy to select the optimal dose, and adjusting the exposure parameters to the patient's size can be time-consuming.

SmartDose uses 3D machine vision to determine the thickness of the patient, and then tailors exposure parameters specifically for that patient's anatomy. It saves you time over manual adjustments, while avoiding the retakes that can result from incorrect exposure settings.

<sup>7</sup> Data on file

<sup>8</sup> Yanch, Jacquelyn C., et al. 'Increased radiation dose to overweight and obese patients from radiographic examinations.' *Radiology* 252.1 (2009): 128-139.

<sup>9</sup> Little, Kevin J., et al. 'Unified database for rejected image analysis across multiple vendors in radiography.' *Journal of the American College of Radiology* 14.2 (2017): 208-216. 10

- > Fewer post-processing actions
- > More consistent image presentation

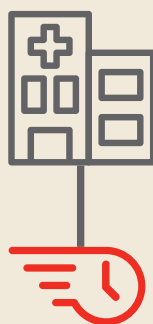


## SmartRotate

Not all images are taken in an X-ray room, with the detector in a bucky. Whether at the bedside or in the X-ray room, the detector can be upside down, oriented in portrait or landscape mode, etc. The resulting image then has to be adjusted to the correct orientation with an additional manual action.

SmartRotate always presents the image ready for viewing, automatically. It uses a Deep Neural Net to interpret the image contents, and then rotates the image accordingly. By reducing post-processing actions, the radiographer saves time and can focus on imaging, not rotating. This also ensures the images are consistently presented on the PACS, allowing better comparison with priors.

### POTENTIAL GAINS



**20 hours**

of bedside imaging workload/year

### How much time can SmartRotate save?

Recent data shows that 83% of all bedside chest X-rays require manual intervention to rotate images. Radiographers at medium and large hospitals do more than 70,000 manual clicks each year to rotate chest images on portable X-ray machines<sup>10</sup>. This works out to an average of nearly 20 hours, or almost three full working days annually. And that is just for chest X-rays. SmartRotate works on 15 other body parts as well.

<sup>10</sup> [http://newsroom.gehealthcare.com/positioning-head-heart-research-finds-ai-feasible-tool-saving-x-ray-techs/#\\_ftn1](http://newsroom.gehealthcare.com/positioning-head-heart-research-finds-ai-feasible-tool-saving-x-ray-techs/#_ftn1)



Follow us:



[agfaradiologysolutions.com](https://www.agfaradiologysolutions.com) » Septestraat 27 - 2640 Mortsel - Belgium

Agfa, the Agfa rhombus and MUSICA® are trademarks of Agfa-Gevaert NV, Belgium, or its affiliates. All rights reserved. All information contained herein is intended for guidance purposes only, and characteristics of the products and services described in this publication can be changed at any time without notice. Products and services may not be available for your local area. Please contact your local sales representative for availability information. Agfa-Gevaert NV diligently strives to provide as accurate information as possible, but shall not be responsible for any typographical error.

© 2026 Agfa NV - All rights reserved - Published by Agfa NV

GB 202603