

CMCU Digital Radiography to Showcase Technical White Paper on Intelligent Noise Reduction

Irvine, CA – Nov. 21, 2023 – Canon Medical Components USA (CMCU) - Digital Radiography (DR) (<https://mcu.canon>), global leaders in advanced flat panel detectors (FPDs), X-ray components, X-ray tubes, and innovative imaging software, announces the white paper titled, *Intelligent Noise Reduction: Seeing Through the Noise with Deep Learning Image Processing*, by Josh Johnson.

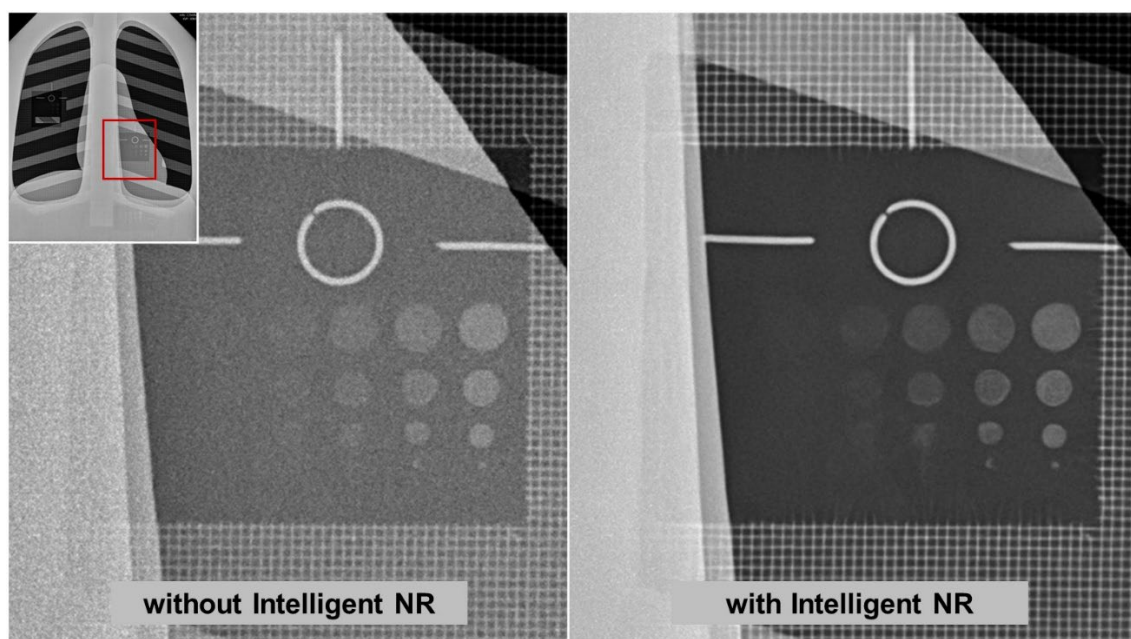
According to the white paper, Canon DR has developed a convolution neural network (CNN)-based image processing procedure for projection radiography that produces high quality images with reduced patient radiation dose. The technical paper discusses the challenges of conventional noise reduction techniques in radiographic imaging and the development of machine learning techniques, such as Canon's **Intelligent Noise Reduction (Intelligent NR)**, to reduce noise in digital radiography.

In this study, images of the "Duke" 07-646 Quality Control Phantom were used to quantify noise reduction, under varying exposure settings. Three regions of interest of a chest radiograph were selected for noise evaluation: the heart, the lung and the diaphragm. The white paper explores the performance of intelligent noise reduction in limiting image noise and compares identical exposures (see included imagery) *with* Canon's Intelligent NR software and *without* Canon's Intelligent NR.

The technical study includes Appendices with graphs showing Noise vs. mAs and graphs showing SNR vs. mAs. They show significantly reduced noise in the images. The author concludes that Canon's Intelligent NR effectively improves the image quality by reducing the overall noise in the image. This should also allow images to be acquired with lower doses and still maintain the image quality needed for diagnostic tasks. For more information and to download the white paper, please go to:

https://mcu.canon/downloads_canon_com/cmcu/pdfs/Intelligent_NR_Technical_Whit

[e Paper.pdf](#).



The Canon Medical Components U.S.A., Digital Radiography Group's technical paper will be highlighted at the upcoming [Radiological Society of North America Annual Meeting 2023 \(RSNA\)](#), McCormick Place Convention Center, Chicago, IL Nov. 26 –29, 2023 in North Hall, Level 3. Please stop by Canon's booth #7913 to learn more.

Canon DR's innovative Intelligent NR technology is compatible with Canon's newly released **CXDI-Elite** flat panel detector (FPD) series, producing exceptional images with lower noise content at a lower dose and without loss of image quality, as demonstrated in the white paper. The following CXDI FPD models can be paired with the Intelligent NR software: CXDI-710C Wireless, 810C Wireless, 410C Wireless, 720C Wireless, 820C Wireless, 420C Wireless, and 420C Fixed. For additional information about the proprietary Intelligent NR software, please download the brochure here:

https://mcu.canon/downloads/canon_com/cmdu/pdfs/DRB-048REV.A_2nd_Intelligent_NR_brochure.pdf.

ABOUT THE COMPANY:

Canon Medical Components U.S.A., Inc., <https://mcu.canon> – CMCU-Digital Radiography (DR), provides advanced components for X-ray systems including Flat Panel Detectors (FPDs), X-ray tubes, proprietary software, system components, and innovative video camera technologies used in surgical imaging, microscopy, inspection, and many other applications. A global leader in high image quality and digital radiography (DR) technology, CMCU provides a broad range of solutions, from wired / mounted detectors to wireless detector systems that meet the demanding requirements of radiology labs, medical imaging departments, and hospitals. The company, headquartered in Irvine, California, is celebrating its 25th year, having pioneered digital radiography technology by introducing the world's first DR detector in 1998.