

Artificial Intelligence to Boost MR Imaging Quality and Productivity

The power of AI is brought to routine MR imaging by Canon Medical's Deep Learning Reconstruction (DLR) technology: Advanced intelligent Clear-IQ Engine (AiCE). AiCE is the world's first fully integrated DLR technology for MRI.

One of the main challenges in MRI is finding the optimal balance between the signal-to-noise ratio (SNR) and image resolution. A higher spatial resolution

could improve visualization of structures, but when spatial resolution is increased, SNR drops. To regain SNR, typically scan times need to be increased, reducing patient comfort and decreasing throughput.

signal-to-noise MR images to detect noise and remove it from the MR images. By removing noise, AiCE enables spatial resolution to be increased or acquisition time to be reduced.

“AiCE changes the way we think about MRI.”

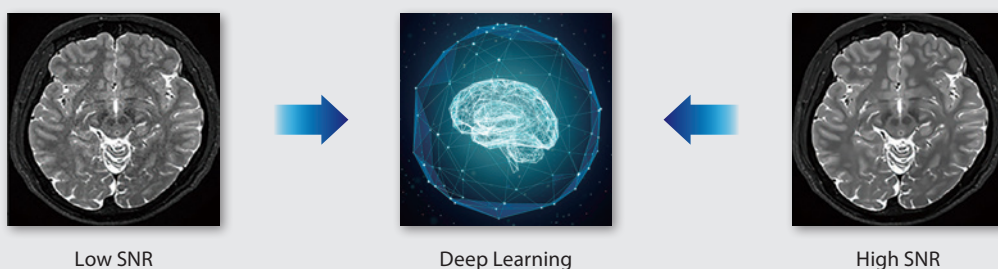
Prof. Garry E. Gold.

Canon Medical found a solution in artificial intelligence: AiCE. AiCE is a deep-learning based solution trained on vast amounts of low and high

AiCE expands diagnostic capabilities, enriches radiologist's confidence and reduces examination times and thus improves patient comfort. With AiCE we enter a new era in MRI. //

Training Phase

Using high SNR images, Advanced intelligent Clear-IQ Engine (AiCE) learns to differentiate between signal and noise in low SNR images.



Operational Phase

Using the intelligence from the Training Phase, AiCE removes noise from images which results in high SNR.





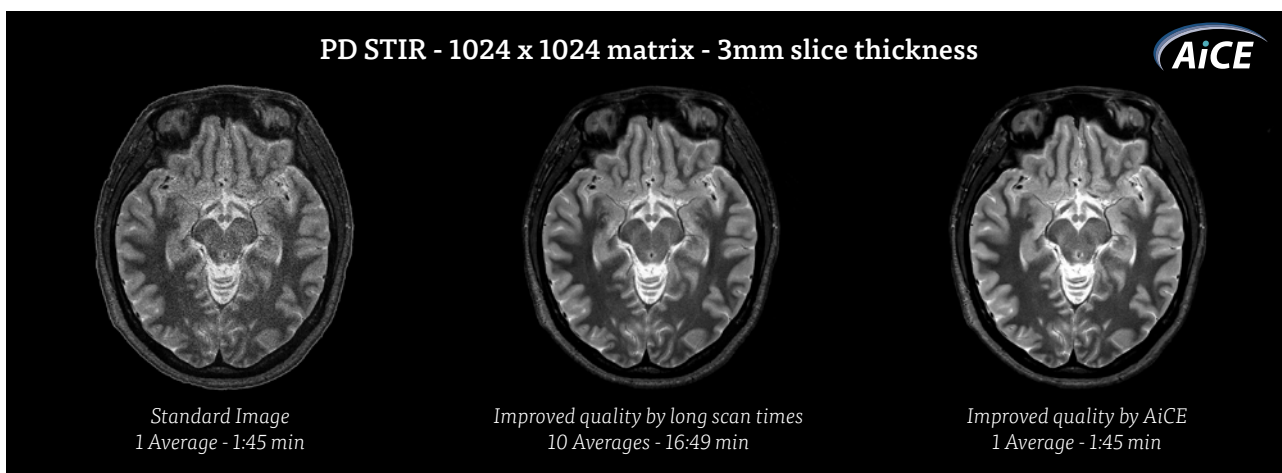
“With DLR we can achieve both high resolution images without losing time or signal and reduce the image acquisition time.”

Prof. Vincent Dousset,
Head of the diagnostic and therapeutic
Neuro Radiology department at
Bordeaux University Hospital.

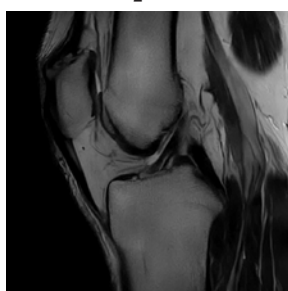


“I’m impressed by the ease-of-use, how it maintains image contrast and structural detail, while at the same time eliminating noise.”

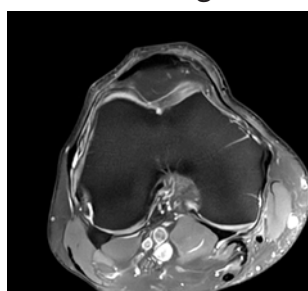
Prof. Garry E. Gold,
Clinical radiologist and researcher, Past
president of the International Society for
Magnetic Resonance in Medicine (ISMRM)
and the Society of Computed Body Tomography
and Magnetic Resonance (SCBT/MR)



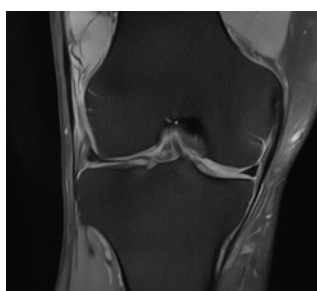
Fast knee protocol with AiCE on Vantage Orian 1.5T



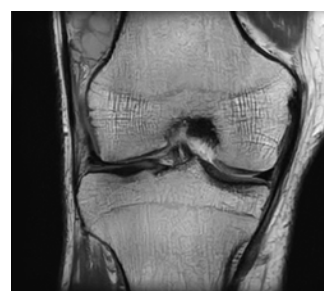
Sag T2 - 0.5 x 0.5 min - 0:56 min



Ax PD FatSat - 0.6 x 0.6 mm - 1:30 min



Cor PD FatSat - 0.6 x 0.6 mm - 1:15 min



Cor PD - 0.5 x 0.5 mm - 0:58 min