

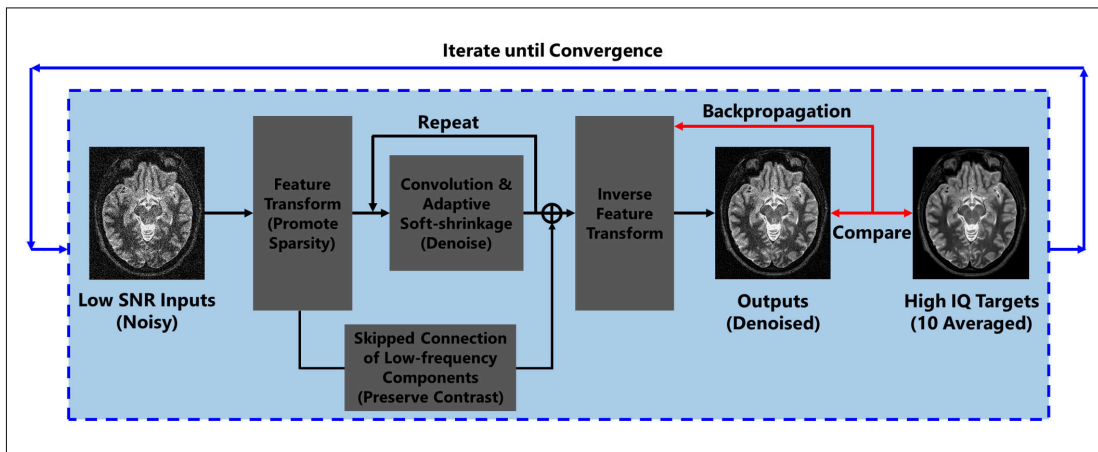
# Advanced intelligent Clear-IQ Engine (AiCE) Interpretable Model with Robust and Generalized Performance: Beyond Brain and Knee MRI

Hung P. Do, PhD  
Manager Medical Affairs – Clinical Scientist  
Canon Medical Systems USA, Inc.

Dawn Berkeley  
Manager Medical Affairs – Clinical Development  
Canon Medical Systems USA, Inc.

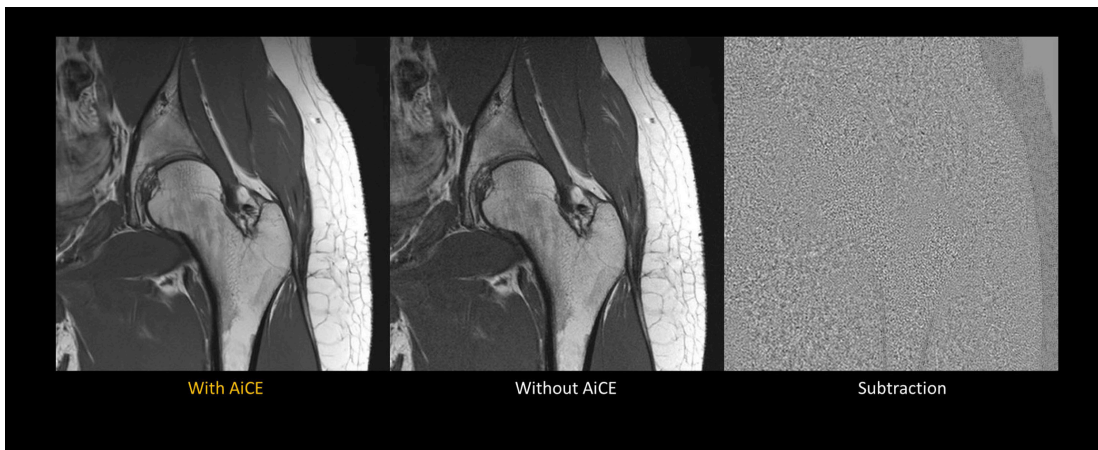
## Key Points

The AiCE network architecture was designed based on an innovative deep learning algorithm allowing the AiCE model to be applied to many different applications



**Figure 1**  
AiCE's interpretable network architecture.

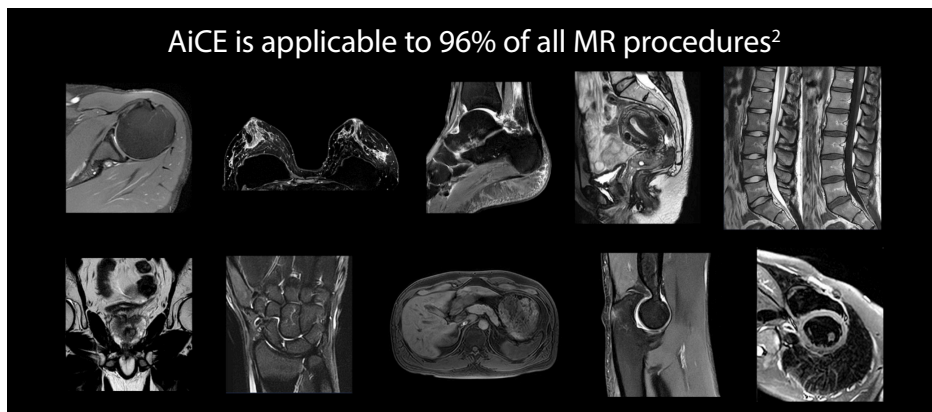
AiCE DLR intelligently removes noise while maintaining anatomical and pathological integrity that results in higher Signal-to-Noise Ratio (SNR)<sup>1</sup> reconstructed images.



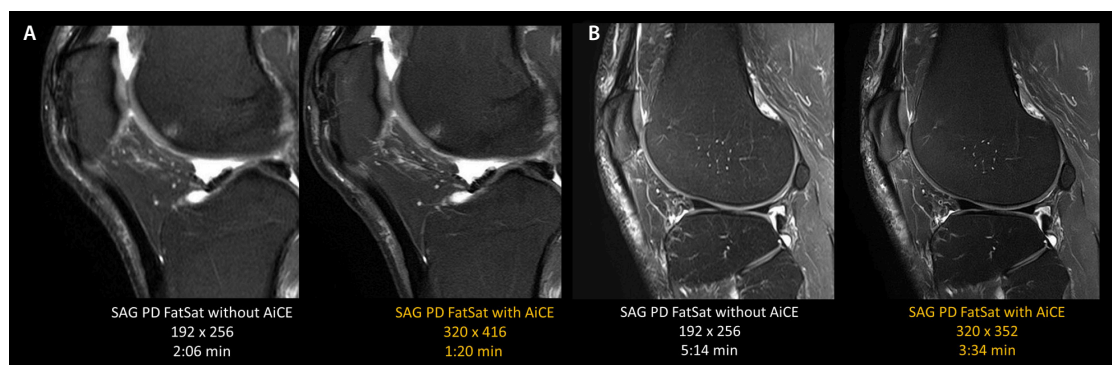
**Figure 2**  
Subtracted image contains only noise.

AiCE is FDA 510k-cleared at both 1.5T and 3T and applicable to 96% of all MRI procedures.<sup>2</sup>

**Figure 3**  
AiCE is applicable to 96% of all MR procedures at both 3T and 1.5T.<sup>2</sup>

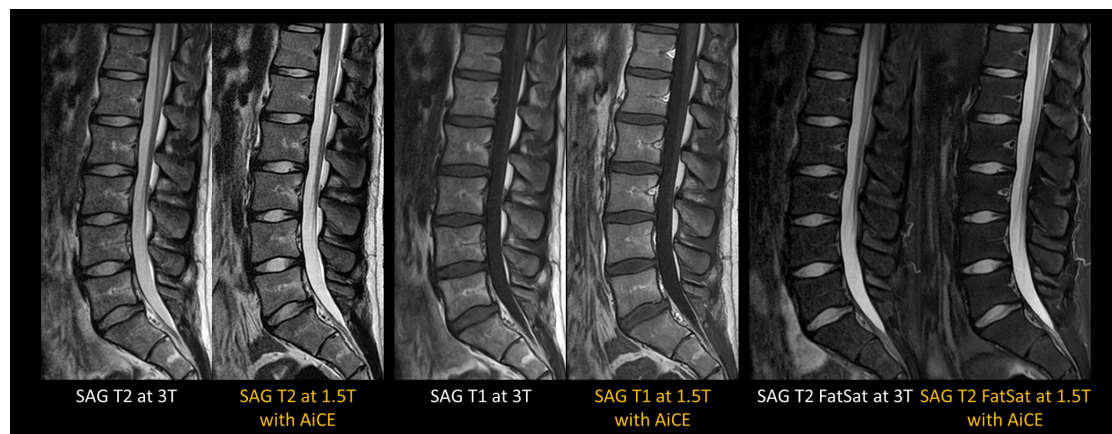


Canon Medical Systems introduces Advanced intelligent Clear-IQ Engine (AiCE), which helps you to alleviate the fundamental tradeoffs between SNR, scan time, and resolution.<sup>3</sup>



**Figure 4**  
Higher resolution and shorter scan time Knee with AiCE at 3.0T (A) and 1.5T (B).

Imaging at higher field strength often associates with the challenges such as (i) higher equipment and operation cost, (ii) higher specific absorption rate (SAR), and (iii) higher degree of image artifacts due to increased field inhomogeneities at higher field strength.



**Figure 5**  
3T images (left) vs. AiCE deep learning based reconstructed 1.5T images (right). The 3T and 1.5 images were acquired with the same resolution and similar scan time while other parameters were optimized for appropriate contrast at different field strength.

For more details, please refer to the AiCE White Paper MRWP13668US: <https://us.medical.canon/products/magnetic-resonance/experience/>

<sup>1</sup>AiCE provides higher SNR compared to typical low pass filters  
<sup>2</sup>Based on the IMV report on total MR procedure volume in 2019  
<sup>3</sup>Actual scan time reductions may vary by case

CANON MEDICAL SYSTEMS USA, INC.  
<https://us.medical.canon>

2441 Michelle Drive, Tustin, CA 92780 | 800.421.1968

©Canon Medical Systems, USA 2021. All rights reserved. Design and specifications are subject to change without notice.  
 Made for Life is a trademark of Canon Medical Systems Corporation.