

Metal Artifact Reduction Techniques — *mART* & *mART+*

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Key Points

- MRI scans are very sensitive to the presence of metal objects in the area of imaging.
- The metal objects and implants introduce significant metal artifact that appear as signal loss and pile-up, which complicate image interpretation.
- Canon Medical Systems has introduced a family of metal Artifact Reduction Techniques (*mART*) to reduce the in-plane metal artifact while keeping the scan time clinically reasonable.

Knee implant scanned on 3T Galan scanner

mART (Metal Artifact Reduction Technique): Increase bandwidth, Acquire thinner slices, Increase readout matrix, Avoid the use of SPEEDER, Decrease echo spacing.

mART+ (Metal Artifact Reduction Technique Plus): *mART* technique in combination with **VAT (View Angle Tilting)**.

VAT technique applies an extra slice direction gradient during readout to cancel the readout direction shift. It reduces metal-related artifact caused by high off-resonance frequency.



Route FSE

mART

mART+

Patient with cervical surgical hardware



Route FSE

mART

mART+

*For more details, please refer to the *mART* White Paper MRWP13467US:
<https://us.medical.canon/products/magnetic-resonance/experience/>

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MRWP13894US

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