**Docket #:** S14-388

# Method and Apparatus for Compressed Sensing

Stanford researchers have patented a new method for Compressed Sensing (CS) which reconstructs signals and images from significantly fewer measurements than current standards while maintaining high reconstruction accuracy. This method has been validated for Magnetic Resonance Imaging (MRI) which is an essential medical imaging tool with an inherently slow data acquisition process. Applying CS to MRI offers potentially significant scan time reductions, with benefits for patients and health care economics. This method can be broadly used for high quality reconstruction of a signal, image, spectrum, or other digital object of interest.

**Stage of Research:**
Demonstrated four applications where CS improves on current imaging techniques. The concepts and approaches discussed may potentially allow entirely new applications of MRI.

## Applications

- MRI
- Geology
- 3D printing
- Wireless communications – signal processing
- Spectroscopy

## Advantages

- Significantly fewer measurements required for image reconstruction than current standards
- Maintains high quality reconstruction

- Significantly reduces scan time thus benefiting patients and reducing costs

## Publications


- Donoho, David L. "Compressed sensing." Information Theory, IEEE Transactions on 52, no. 4 (2006): 1289-1306.


## Patents

- Published Application: 20100177972
- Published Application: 20060029279
- Published Application: 20120082344
- Published Application: 20150023608

## Innovators

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