

US Pat. No.: 7,653,155 & 8,009,772

Technology Readiness Level: 5

Key components have been demonstrated in a relevant environment

Many communication systems employ multi-channels that transmit and receive a common signal. In these systems, the common signal is combined at the receiver to achieve maximum channel capacity. During the combining of such signals the delay and phase parameters are estimated based on a convolution decoding operation and are removed from the signal. At low signal to noise ratios these parameters become difficult to estimate and impractical to implement.

The combination of these two Sandia technological advances introduce a new method whereby the channel parameters are estimated and removed simultaneously using a convolutional decoding operation, while being combined by the receiver. This new method allows for the signal combining to occur at low signal to noise ratios which improves the overall channel capacity without losing functionality.

TECHNICAL BENEFITS

- Improvement of overall channel capacity
- Improved signal to noise ratio
- Simplification of signal receiving method

INDUSTRIES & APPLICATIONS

- Satellite communication systems
- Cellular communication systems
- GPS

