

WHAT IS MIMO?

"MIMO wireless refers to the use of multiple antennas at both ends of a radio link, and is emerging as an important technology to enhance wireless performance. MIMO has evolved (and is still evolving), since its early beginning in 1993, with contributions from hundreds of researchers around the world. Some aspects of MIMO have already entered wireless standards, and many more standards efforts are ongoing.

The multiple antennas at each end of a MIMO link can be used in different modes such as transmit-receive diversity, beamforming, antenna subset selection and spatial multiplexing. Each of these modes further has several internal options. Which mode or option actually maximizes performance depends on the channel condition, SNR and QoS requirements, among other factors. For example spatial multiplexing can perform poorer than transmit-receive diversity under certain scenarios. Different aspects of MIMO will find their unique niches in the plethora of products now entering the market."

Dr. A. Paulraj

Professor at Stanford University, Supervisor of the Stanford Smart Antenna Research Group since 1993 and a renowned pioneer in MIMO technologies.

"MIMO refers to any technology that uses multiple antennas on both sides of the link. There are a variety of different transmission and reception methods that make use of multiple transmit and receive antennas - all are considered MIMO techniques."

Dr. Robert W. Heath Jr.

Assistant Professor at University of Texas at Austin and head of its Wireless Systems Innovations Laboratory (WSIL) conducting active research program in all aspects of MIMO communication including antenna design, signal processing algorithms, channel feedback, and prototyping.