Abstract

This seminar will provide background on the various types of smart antenna systems in use or proposed today and will discuss the benefits and challenges for each type of system. The rapid growth of wireless LAN systems will be discussed (with the most common type of system also known as "WiFi"), and it will be shown that almost all of the factors limiting further adoption are addressed by smart antennas. Key areas of research on smart antennas will be examined, with discussion about the current activity in academia and industry on each area of research. The work being carried out by the speaker's research group at Santa Clara University will be discussed, including the Smart Wireless LAN Consortium to build an experimental testbed at Santa Clara University.

Biography of Speaker

Dr. Garret Okamoto is an Assistant Professor in the Electrical Engineering Department at Santa Clara University. He received a Ph.D. degree in Electrical and Computer Engineering from the University of Texas at Austin, an M.S. in Electrical Engineering from Stanford University, and a B.S. in Electrical and Computer Engineering from the University of Texas at Austin. He worked in the Communications Research Division of the Jet Propulsion Laboratory as a Member of Technical Staff, Contractor, and Cooperative Engineer from 1987 until 1998, working on such projects as the Mars Pathfinder and the Galileo Optical Experiment. He is in charge of the graduate Communications curriculum in the Electrical Engineering Department at SCU, and teaches graduate courses on Wireless Communication, Wireless Local-Area-Networks, and Smart Antenna Systems for Wireless Communications, among others. His research is focused on adapting smart antenna systems for 802.11-compatible wireless LAN systems, including beamforming, dynamic slot assignment, channel modeling, and computational complexity issues.