Abstract

Future-generation cellular wireless systems, transporting high bit rates in non-ideal radio propagation environments, must be robust to severe frequency selective multipath. Further requirements include moderate terminal and base station hardware costs, high spectral efficiency, and scalability of the cost of terminals with respect to their maximum bit rate capabilities. Reconfigurable air interfaces, based on frequency domain transmission and reception methods, best meet these requirements, by adaptively selecting the uplink and downlink modulation and multiple access scheme that is most appropriate for the channel, interference, traffic and cost constraints. This approach also leads to a general unified framework for possible air interfaces.

Reference


[FCC03] FCC web site on cognitive radio: www.fcc.gov/oet/cognitiveradio/


[FDM+03] D. Falconer, R. Dinis, T. Matsumoto, M. Ran, A. Springer and P. Zhu,


Index Terms

Computer Science

Communication Systems

Key words

BROADBAND FREQUENCY

4G CELLULAR WIRELESS SYSTEMS

high spectral efficiency