The Principle of OFDM and Use in 4G Radio Cellular Systems

International Journal of Computer Applications
Foundation of Computer Science (FCS), NY, USA

Volume 182 - Number 27

Year of Publication: 2018

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10.5120/ijca2018918127 {bibtex}2018918127.bib{/bibtex}

Abstract

The 4G (fourth generation) radio cellular communication systems are projected to overcome deficiencies of 3G (third generation) systems and to enhance variety of new services, such as spectral efficiency, high data rates transfer, multimedia, mobile TV, high network capacity, digital video broadcasting (DVB), quality of service and other services that utilize bandwidth. The Orthogonal Frequency Division Multiple (OFDM) access schemes have been adapted as suitable technique for 4th generation cellular radio systems due to its immunity to the multipath frequency selective fading and effective spectrum utilization. This paper will present the basic principles of OFDM and why is it suited for 4th generation radio cellular systems. The technical history of cellular radio system was first presented followed by the basic principles and fundamentals of OFDM. The effect of insertion of cyclic prefix for OFDM was also briefly discussed.

References

**Index Terms**

Computer Science

Signal Processing

**Keywords**

Orthogonal Frequency Division Multiple (OFDM, Code Division Multiple Access (CDMA) and Time Division Multiple Access (TDMA)