Abstract

As the mobile telecommunication systems are growing tremendously all over the world, the numbers of handheld and base stations are also rapidly growing and it became very popular to see these base stations distributed everywhere in the neighborhood and on roof tops which has caused a considerable amount of panic to the public in Palestine concerning whether the radiated electromagnetic fields from these base stations may cause any health effect or hazard. Recently UP High Court in India ordered for removal of BTS towers from residential area, it has created panic among cellular communication network designers too. Hybrid cellular networks could be a solution for the above problem. This paper deals with hybrid cellular networks with the help of multi-layer overlaid hierarchical structure (macro / micro / pico / femto cells). Macrocell for area coverage, micro for pedestrian and a slow moving traffic while pico for indoor use and femto for individual high capacity users. Hybrid cellular network could be the answer of the problem of energy conservation and enhancement of spectral density as well as reduction of RF pollution. Proposed network will optimize all available resources in existing cellular network through application of remote technologies.
References

- Martin Cooper, Marc Goldberg, "Intelligent Antennas: Spatial Division Multiple Access"; Annual Review of Communications, 1996.

Index Terms

Computer Science Wireless Communications

Keywords

Smart / Adaptive Antenna Picocell Femtocell Remote RF Hierarchical Structure