

ABSTRACT

Improvement of cell coverage and network capacity are two major challenges for the evolving 4G cellular wireless communication networks such as LTE-Advanced. The use of femtocells is an efficient way to improve coverage and quality of service while on the other side the deployment cost for the service provider is kept at extremely low level. Long Term Evolution (LTE) systems with femtocell overlays aim to provide better indoor voice and data coverage and to increase network capacity.

Some of the key arguments in favor of femtocells are the key arguments in favor of femtocells are better coverage and capacity, Improved macrocell reliability, cost benefits, reduced subscriber turnover. But femtocell deployment faces two challenges is provisioning issues and interferences. This thesis will design new sub-band allocation based on the multi-tier cellular network on femtocell integration using distributed fractional frequency reuse model to avoid interference between macrocell and femtocell and improve throughput performance.