



Handover Algorithms for Femtocell Networks

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Abstract

The benefit of deploying femtocells within cellular networks is established considering the wide acceptance for these networks from several service providers. Spatial diversity achieved through small cell technology is known to alleviate the ill effects of channel fading in wireless channels and maximize overall spectrum efficiency of the network. But to exploit this phenomenon, smart decision making algorithms are needed to address the various challenges encountered. One such issue of particular interest is handovers, which needs to be studied extensively. The area covered by a femtocell is a few tens of meters and hence mobility and speed analysis are important in deciding a favorable femtocell base station (FBS) for handover.

In this seminar we list out some of the available parameters and algorithms for making efficient handover decisions. Two proposed models are introduced namely counter based and Stability based, to block temporary requests and to utilize service rate respectively as the method's main theme. The decisions are influenced by a combination factor resulting from Signal to Noise plus Interference Ratio (SINR). A detailed description of how these parameters are prioritized and the state model that decides a user's choice of BS's is presented. Finally we evaluate the performance of the methods.

Bio

Saketh Reddy is currently pursuing his Master's degree in Electrical and Computer Engineering, Auburn University, Auburn, AL; under the guidance of Dr. Prathima Agrawal. He received his Bachelor's degree in Electronics and Communications Engineering from Osmania University, Hyderabad, India in 2011. He recently held an internship with Sprint focusing on backhaul and authentication for small cells. His primary research interests include handover management in femtocells, small cell standards, algorithm development and testing.

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