Exp-8:- Handoff

Aim
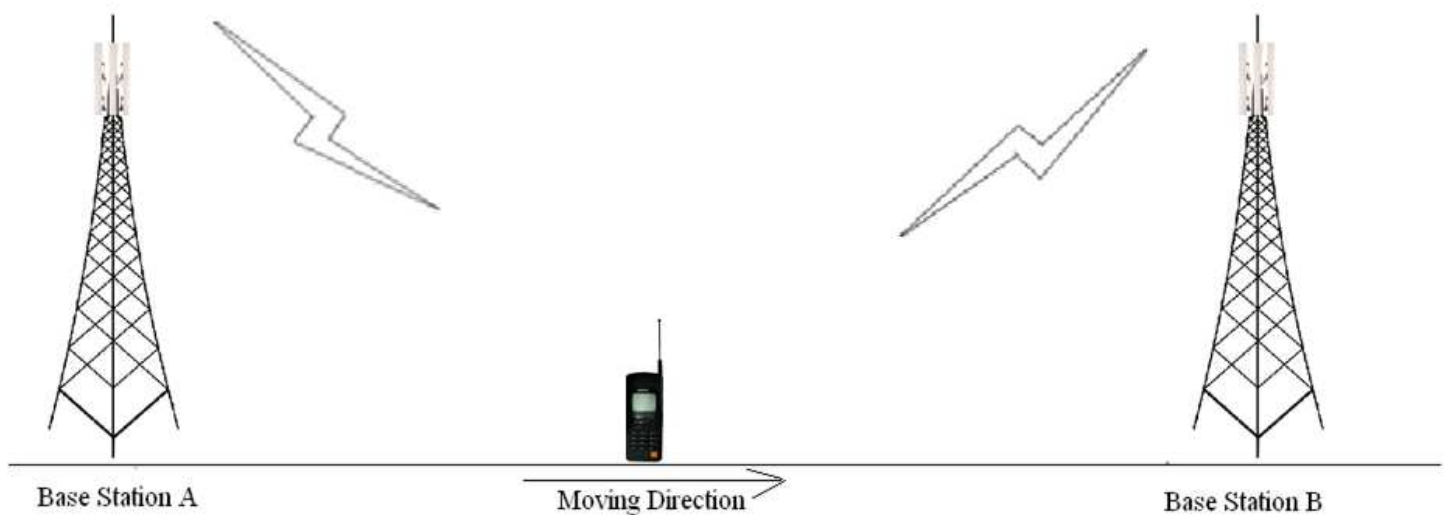To understand the handoff mechnism.

Objectives
To study the effect of handover thresold and margin on SINR and call drop probability and handoff probability.

1 Theory for Experiment 8:Handoff

consider the figure below Initially say the mobile M is quite close to the base stationA and hence

Base Station A   Moving Direction   Base Station B

receives signal strength from A $P_{r_x}^A > P_{r_x}^B$.As the mobile moves away from the base station. A and goes towards B then the signal strength from A keeps falling(pathloss increases).Let there be a minimum sensitibility level$P_{r_x}^0$ for the mobile,i.e. if the signal from the B.S.to which the mobile is connected falls below$P_{r_x}^0$ then the call drops.In order to prevent call drop the mobile monitors receivede signal strength from the neighboring 3-6B.S..These neighbouring 3-6 B.S.also monitor R_x signal strength from the M.S.

The mobile should get connected to B.S. which has the heighest signal strength. However if the M.S.continuouslyattaches itself to the B.S.with instantaneous height signal strength then the h/o rate may very high in server condition.

Thus some hysten'scondition is used for hø. If$P_{r_x}^T$ (T= target B.S.)>$P_{r_x}^h$ higher h/o thresold and $\overline{P_{r_x}^c}$(c=current B.S.)< $P_{r_x}^h$ minimum h/o thresold. then execute høto $B.S^T$ from $B.S.^c$.Thus itb is impesitive to study the in part of

$$\triangle_\gamma = P_{r_x}^h - P_{r_x}^l$$

on the handoff process.

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Asucessful handoff is one where the call gets from and continuous without brcall or in other words the høoccures before $P_{r_x}^c$ becomes $< P_{r_x}^0$ .If $P_{r_x}^c < P_{r_x}^0$ then call drop event occures.

One would like to minimize the no of handoff events as well as minimize call drop probability. The expriment providesw opportunity to study the inperent of these three parameter on hø.

Further the averaging window for calculating $P_{r_x}^T$ and $P_{r_x}^c$ also plays a role in the process.In the experiment small scale fading is not considerd and hence the averaging taken into account only shadowing.

The person conducting the experiment is expected to study the impact of these on h/0. He/She is encouraged to respect the experiment for several serts of valuees of these parameters. these draw conculusion.