ABSTRACT

Some positioning sistem methode have been developed in any country. Providers have to developing this service well. This aplication will be useful for subscriber. Hyperbolic position lication system or Time Difference of Arrival (TDOA) is a technology that can give positioning information acuratlly using eksisting selluler infrastructure without adding hardware/software implementation at Mobile Station (MS) Headset.

This paper will observe the performance or Moble Station positioning using TDOA with simulated by Matlab 7. Taylor-series algorithm is used to get position estimation. This algorithm offers position estimation accuratly and aplicative in any different measurement.

The result shows that minimum noise level (Eb/No) is 16 dB to resulting minimum error at position location. for Eb/No up to 16 dB, RMS error value is stabil. Mobile station position is also influence to succesing position location. Generally, simulation shows that RMS error is larger if the MS distance to referension BTS is shorter. It caused by the distance of MS to other BTS is longer and TDOA of its signal is longer. Because cross corelation proses is not signal selective, so RMS error will be higher. This position location system will not corectly at rayleigh fading, so that it is requered the technics to solve fading effect. More active user per cell will higher RMS error value.