ABSTRACT

Methode which used in determine position are Time of Arrival (ToA) methode which analyze time of signal arrival from Mobile Station (MS) to Base Tranceiver Station (BTS) or Angle of Arrival (AoA) which analyze Received Signal Strength (RSS). Determine position use ToA or AoA need three BTS, but determine position use Hybrid ToA-AoA just need two BTS with 120^o sectoral antenna.

In ToA-AoA position's determining there are several important parameters such as signal time, frequency and RSS. An experiment is done by using those three parameters in order to acknowledge position determining algorithm's performance.

From analysis and simulation, time signal from BTS to mobile station increase every 1 μs cause ToA error about 0,0555 km, frequency decrease every 25 MHz cause ToA-AoA error about 0,07 km an RSS decrease every 1 dB cause ToA-AoA error about 0,01 to 0,3 km.

Keyword : Time of Arrival (ToA), Angle of Arrival (AoA), antena sektoral 120^o, Received Signal Strength (RSS), signal time, frequency