

Abstract

Mobile positioning has been developed from methods before it such as Cell Based ID until GPS which have advantages and disadvantages themselves. In cellular apparatus that function could be used for another function, one of them is finding help in emergency situation. Not like fixed phone where its position is already known beforehand, MS position changes with user mobility. To know its position we need calculation with such method and parameter.

This final task studies MS positioning method at an BS coverage. Method that will be tested in this final task is Angle of Arrival. 3 BS which service MS will be used to determine MS relative position to one of the BS which will be reference point. Fundamentally with determining signal AOA from BS to MS it's enough with 2 BS. AOA itself is determined with using MUSIC algorithm. Maximal usage of 3 BS in this final task is to increase accuracy of MS determining position. First we conduct measurement signal AoA based to BS 1 and BS 2 and triangulate, we also do so to BS 1 and BS 3, and BS 2 and BS 3. then we have to find mean from 3 measurements to get more accurate position from MS.

Testing will be executed with simulation program using software Matlab 7.6. result which we hoped from this simulation we will know relationship between accuracy and amount of node(BS), and influence amount of user in coverage area with position determination accuracy. This result will be compared with TOA method which has been done in other final task.

Keyword: Angle of Arrival, MUSIC algorithm