

UNIVERSITI TEKNOLOGI MARA

**THE DEVELOPMENT OF SIMULATION MODEL AND
LOCATION ACCURACY FOR OBSERVED TIME
DIFFERENCE OF ARRIVAL IN WCDMA AND LTE
SYSTEM**

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ABSTRACT

Obtaining and delivering user location in Long term Evolution (LTE) technology are various methods that help Communication Service Providers (CSPs) monetize and optimize their networks. It is very important in case of user makes an emergency call and service provider need to locate the geographical position of the user. In this paper, the goal with this work is to analyse the Location Determination Technique (LDT) based on Observed Time Difference of Arrival (OTDOA) in positioning technique in WCDMA and LTE system. This kind of positioning method were chosen as the user equipment (UEs) need to “hear” the signal from the nearest three base stations (Bs). Data from the driven test of Received Signal Code Power (RSCP) Node Bs will be used to simulate by using the OTDOA simulation model with fixed input parameters. Drive test has been made in urban areas in Kuala Lumpur and Shah Alam as the LTE system is in trial version in Malaysia when this paper is written. Then we proceed with analyse the data to gain the accuracy of the location by using OTDOA method. The accuracy will be evaluated by the standard of accepted location approximation error that has been state in WDCMA and LTE network in many studies. The analysis shows that the location errors in WCDMA and LTE system by using OTDOA method were least and have the most accuracy.

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