

**OPTIMIZING PLACEMENT OF UNIFI HOTSPOT WIRELESS
DEVICE IN UNIVERSITI TEKNOLOGI MARA KUALA
TERENGGANU**

NUR AMALIN NAJWA BINTI MOHD KHAIDI

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DECLARATION BY CANDIDATE

I hereby declare that the thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universiti Teknologi MARA or other institutions.

NUR AMALIN NAJWA BINTI MOHD KHAIDI

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ABSTRACT

Recently, a concept of wireless sensor networks has attracted much attention due to its wide range of potential applications. Outdoor wireless sensor networks also pose a number of challenging optimization problems. Hence, optimization is used to reallocate the outdoor wireless hotspot device in UiTM Kuala Terengganu to ensure that the device installed were able to coverage all the areas. This research is carried out to optimize the location of the wireless hotspot device at the best place. Using the binary integer programming and the simplex method, this paper explores the way by finding the best location to install and place devices that will provide stronger internet coverage in order to achieving the desired objectives. The binary integer programming used only the binary number for getting the data. Then, the combination of binary integer programming and simplex method is used to solve the optimization. The problem is solved based on the boundary nodes and the coverage nodes in the UiTM KT layout. The data is solved by using the matrix form. MATLAB software is used to solve the matrix. Finally, it shows that the location of the wireless hotspot device is significant to define the coverage areas.

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