UNIVERSITI TEKNOLOGI MARA

A PROTOTYPE OF TRAFFIC MANAGEMENT SYSTEM USING LORA SHIELD IN RURAL AREA

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DATA COMMUNICATION AND NETWORKING

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Final year project proposal submitted in fulfilment of the requirements for

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SUPERVISOR'S APPROVAL

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This thesis was prepared under the supervision of the project supervisor Madam Rafiza Binti Ruslan and co supervisor Miss Alifah Binti Rosaidi. It was submitted to the Faculty of Computer and Mathematical Sciences and was accepted in partial fulfillment of the requirements for the degree of Bachelor of Programme's Name.

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JULY 15,2022

STUDENT DECLARATION

I certify that this thesis and the project to which it refers is the product of my own work and that any idea or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

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ABSTRACT

An efficient traffic management system will definitely reduce the percentage of accidents. Lora technology is one of the effective methods in implementing traffic management system in any area due to the long range and low power capability. Many accidents happen in narrow roads such as the vehicles fall into the river to give-way to other vehicles. This project built a prototype of a traffic management system in rural area routes where many vehicles pass-by using lora shield for the client and the server. The client is attached with the mini pir motion sensor and the traffic light while server is attached with traffic light only. This project will be implemented and tested at the narrow road in rural area to avoid traffic and to evaluate the performance of LoRa network perform in term of signal strength at distance between at residential area and an open space. There is one scenario that applied here, by using one client and one server. Client attached with mini pir motion sensor while server attached with breadboard, jumper wires and LEDs (green, yellow, red) to indicate traffic light. The percentage different between residential area and open space when at 300 m were 199.596% and 2.15054%. For future works, use gateway as main controller to control the traffic light management.