

ABSTRACT

The rapid development of technology today has changed various aspects of life, one of which is transportation. Transportation is a daily need for society. However, increasing levels of community density also affect the amount of transportation. So, increasing the amount of transportation will certainly affect the condition of the roads traversed. Damaged road conditions will slow down and limit activities, thereby causing traffic jams.

To provide solutions to the problems that occur, Capstone Design presents a new innovation, namely Obstac Map, which is a form of development of an internet of things-based detection and mapping system. This system aims for efficiency and safety when driving on the highway. This system combines sensors with a microcontroller so that it can detect road anomalies and map the location of damaged roads. Obstac Map is also supported by a mobile application and camera that users can use while driving to obtain information regarding the road they are traveling on in the form of coordinates and images.

Based on the tests that have been carried out, Obstac Map works satisfied with the accuracy of the data obtained 90%. Obstac Map is able to display the location of damaged roads with data classes that adjust the level of road damage. So Obstac Map successfully passed the specified tests, showing optimal performance and meeting user expectations. However, there are problems with location mapping performance because it sometimes detects the location of the nearest building.

Keywords: Obstac Map, Pothole Road Mapping, Internet of Things, Mobile Application, User Experience.