DESIGN AND BUILD FLOOD EARLY DETECTION WITH SOLAR PANEL POWERED ANDROID APPLICATION MONITORING BASED ON NODEMCU ESP8266

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ABSTRACT

Flood is one of the most familiar natural disasters in society. Almost all parts of the world must have experienced floods. Especially in Indonesia, as a tropical country in almost every rainy season, several areas in Indonesia are often flooded every year, so that it can cause huge losses to the government and local residents. Naturally, flooding is a normal natural process and is an important part of the mechanism of land formation on our earth. Natural disasters such as floods often occur in several areas in Indonesia which can cause losses, environmental damage and even death or casualties to residents and the government. Based on these conditions, an idea emerged to design and build a prototype of early flood detection by monitoring the Android application based on the NodeMCU ESP8266 powered by solar panels where this technology will real-time observe the water level in the river through a floating sensor, where when the water level crosses the safe level of the face height water that has the potential to cause flooding the system will send a notification on the android-based monitoring application under the potential for flooding to occur. In addition, this system has also adopted an independent power source based on solar panels so that it can be implemented directly in the field, and the level of accuracy and precision of the sensor in the system in reading the water level value (cm) reaches an accuracy rate of 99.17% and a precision of 99. 59% besides the success rate of the tool in providing information on river water conditions through the android application reaches 90%.

Keywords*: Flood detection, NodeMCU ESP8266, Application.*