

## ABSTRACT

Natural Disaster is a natural occurrence that can not be predicted when and where will happen, and the impact of natural disasters that can cause damage, loss, even death is very possible. Deaths that occur can be caused by the lack of handling victims of natural disasters quickly and accurately by the victims.

The pulse detector uses a wireless sensor network, the pulse detection process using the photoplethysmograph method with a pulse sensor that emits rays onto the skin of the fingertips when there is blood flowing from the heart to the fingertips. To calculate the pulse using the BPM formula, in the process of determining the BPM is done by looking at signals that have a trace that passes through the treshold. From the results that have been in the system can run well, and the test results of the pulse sensor has error 5.81% for sensor pulse 1 and for the sensor Pulse 2 has error 7.59%.

The data transmission process using a wireless sensor network can pass 20m at the time in the room but if outdoors or open space it can reach 55m distance, for delay in the room is 0.94 s and delay in the open 1.88 s

*Keywords: Natural Disaster, Pulse Sensor, BPM, heart rate, wireless sensor network, photoplethysmograph method.*