

ABSTRACT

Indonesia is a disaster prone country. The loss caused by the lack of PPDR system in Indonesia reaches \$ 125.569 billion or about 1,632 Trillion Rupiah. This loss rate is the largest compared to other countries in Asia. So an effort should be made to reduce this disaster losses with early detection system.

In this study early detection system is designed using Wireless Sensor Network (WSN), then the correlation between the number of sensor node to the cost will be analyzed using Nett Present Value (NPV) for implementation at certain area level.

The results showed that the location with the green alert level and yellow alert level (with minimum estimated loss) was not feasible for the implementation of the PPDR system due to negative NPV, whereas in yellow alert level (estimated maximum loss), orange alert level, and red alert level is feasible for implementing the PPDR system as it produces a positive NPV.

Keywords: PPDR, WSN, Disaster, Sensor, Techno-economy