ABSTRACT

The level of safety and surveillance of early childhood in Pre-primary school or Kindergarten is an aspect that must be considered by Pre-primary school or Kindergarten managers. Because at the age of early childhood they are still vulnerable to potential hazards when doing activities in the school environment or home environment. With a minimum level of security and supervision, the potential for children to disappear and kidnapping increases. Seeing the potential dangers and safety risks for early childhood is a problem that must be considered by Pre-primary school or Kindergarten managers and also parents

With several cases and data on potential dangers to children at school, the authors have developed IoT technology in the form of an integrated system to improve public safety and surveillance which will later be applied to this research to improve safety and supervision of children. GPS Child Tracker and Safety monitoring applications are able to track children's locations in real-time and accurately. The tool is designed with a size and weight that is adjusted to the size of early childhood.

GPS Child Tracker is able to make it easier for parents to supervise by knowing the location of the child. The features contained in the Safety application also support the level of child safety when out of reach of parents. The results of the Quality of Service test get 46 Kbps Throughput, 0% Packet Loss, and 44.657 ms Delay. The results of testing the accuracy of the Neo7m Ublox GPS module at the location (latitude, longitude) can be analyzed that the average difference is 6.8 m, with the largest difference of 15.62 m and the smallest difference of 1.31 m. For GPS Child Tracker using the Quectel L80-R GPS module, the average data difference is 4.5 m, the largest data is 10 m and the smallest data is 1.08 m. Implementation of this IoT-based GPS Child Tracker can be a solution to improve child safety and supervision.

Keywords: Security, IoT, GPS, Monitoring