ABSTRACT

Down syndrome, also known as trisomy 21, is a condition caused by the presence of an extra 21st chromosome. This disorder can lead to delays in physical and mental development, and even disabilities. In Indonesia, there is a community that fosters relationships among individuals with Down syndrome called the Association of Parents of Children with Down Syndrome (POTADS). According to a scientific journal titled “Down Syndrome” published in 2020, children with Down syndrome experience neurodevelopmental delays, including intellectual disability, developmental delay, and language disorders [32]. This concern about their children being unsupervised and potentially getting lost causes significant worry for parents.

To alleviate parents concerns about their children with Down syndrome going missing, this Capstone Design introduces an innovative GPS tracker integrated with a mobile application using the MQTT data communication protocol. MQTT (Message Queuing Telemetry Transport) enables efficient data communication between the GPS tracker and the mobile application, ensuring real-time and accurate location data transmission. This allows parents of children with Down syndrome to monitor their children's whereabouts without worry, enabling the children to explore their surroundings safely.

Keyword : Down Syndrome, GPS tracker, Mobile Application, MQTT, Cloud Computing