ABSTRACT

A LoRaWAN-based Fisherman Border Alert System is a safety-focused IoT solution designed to alert fishermen when they approach or cross maritime borders. By combining LoRaWAN (Long Range Wide Area Network) technology with GPS, this system ensures effective communication and location tracking over long distances, even in remote areas where cellular networks may be unreliable. GPS Module: Tracks the real-time location of the fishing boat. LoRa Module: Enables long-range communication between the fishing vessel and the shore station or a floating gateway. Microcontroller/Processor: Processes data and sends alerts when border limits are approached. Power Supply: Solar panels or battery systems for energy efficiency. GPS module for location tracking. Microcontroller (e.g., Arduino, ESP32, STM32) to process GPS data and trigger alerts. LoRa transceiver (e.g., SX1278 or RFM95) for communication. Alert mechanisms: Buzzers, LEDs, or an LCD screen. Receives data from the fishing boats and relays it to the cloud or shore station.