

ESP1853

A Real-Time Flood Alert System for Parking Lots

Floods are a constant threat throughout the year to the United States and its territories like Puerto Rico. Although there are various methods of alerts available; such as the Emergency Broadcast System or sirens, none of these can alert a user remotely in an efficient and timely manner. The design goal of this project is to provide a real time system able to monitor sudden floods in parking lots, addressing the concern of water damage to vehicles; creating a personal opt-in alert that could reach an end user through their mobile phone. In this case, the system defines two types of nodes: Sensing and Sink. Each sensing node uses a hydrostatic pressure sensor to monitor the water levels; it will then communicate with neighbouring nodes via XBee radios until the data reaches the sink node. The sink node is then responsible for sending the received data from the sensors to a remote server via mobile communications network (GSM). An up to date database of users and flood levels will then be processed and handled by the server, which will send users an email alert that will reach any mobile phone as a text message (SMS).