Designing a Reliable Child Seat Alarm

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Each year in America, an average of 38 children die as a result of heatstroke from being left in a hot car. Often times this is a result of the adult being distracted and forgetting about the child. The goal of this project was to design a system that notifies a parent or guardian if a child was left in a vehicle. It was determined that an Arduino Uno module with Sparkfun Bluetooth Silver Modules would provide the best method at a low cost. Using an Android app was discovered to be less reliable. The device will consist of a transmitter on the car seat and receiver with the adult. Added weight to the car seat will activate the transmitter and initiate broadcasting. The receiver will connect to the transmitter and notify the adult that it is monitoring. The transmitter will provide notification if either battery set gets low. If the child is removed the transmitter will remain powered by a capacitor and send a signal that the baby has been removed. No communication indicates that the child has been forgotten and will start alerting the adult. This project was successfully completed with a two module device that accomplishes all the functions specified. When the transmitting Arduino's power source was removed, it generated a sound specifying that the child has been removed. When the Bluetooth device was removed signifying loss of signal, an alarm sounded. Also, every few seconds, a sound was generated when the battery power was low.

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