

# Smart Intelligent Tracking System for School Students Using GSM and GPS

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## ABSTRACT

This project aims at illustrating the advantages of the tracking systems that are used and developing the designing of the tracking system devices of following up the children in order to face this phenomenon to fir huge number of children with different contexts, traditions and financial possibilities. The new method helps in following up the kidnapped child for long time as the used system is connected with the parents via sending messages to their mobile phones when the child changes the defined location as it defines the location more accurately. The implement of School Children Monitoring System via rf transmitter & receiver will help to overcome and reduce worried among parents. This project is combination the latest technology using ZIGBEE transmitter & receiver, SMS system. When the student enters the school bus, they must pass the tag that given to the ZIGBEE receiver antenna, and the ZIGBEE receiver reader will read the student ID. Then, information about the student such as time in and time out from school will be recorded to system and the SMS system automatically sends to their parent's mobile to inform that the children arrived at school safely.

**Keyword:** Transmitter, Receiver SMS, ZIGBEE

## I. INTRODUCTION

Consequently, this security disorders leads to the spreading of the phenomenon of Children abduction in order to force their parents to pay the ransom as those who commit such crime know very well that their parents are able to do whatever they want in order not to liable not any harms. Therefore, many gangs are formed in order to kidnap and rob the children who are the most precious thing for their parents. Thus, in Egypt it turns to be "the terrible nightmare" for both fathers and mothers especially after the increasing number of the incidents of Children abduction within the Egyptian community and editing many minutes since the beginning of the revolution till now against the absence of many children from their homes, thus the parents become more worried and terrifying. This phenomenon turns to be a means to earn the living for the members of the gangs that are specializing in such crimes under the shadow of this secure chaos and the inability of the Police to arrest the criminals or following them especially after the escalation of Violence and barbarism practices. Therefore, the research is concerned with finding out a suitable means to protect the children against this phenomenon as well as searching for the best systems

that can be used to follow up the children during their residence outside homes and developing the systems that are used in the other communities that are previously used and prove their effectiveness in the field of following up the children and decreasing the incidents of children kidnapping. As well as the research is concerned with securing the children to decrease the psychological crises from which some children suffer as result of spreading the process of their kidnapping by the means of media that are took place lastly as well as the suffering of the parents of psychological pressures as result of their hopelessness in their children's return due to not peZigbeeorming the necessary precautions before the crises.

## II. METHODS AND MATERIAL

### 2.1 Children Node

In this project children are tracked using GPS and GSM. Here ZIGBEE are used as transceiver. Body moisture sense the temperature of chiildren and it helps to know that the kit is with the children or not. GPS is used to access the network of based on latitude and longitude position.

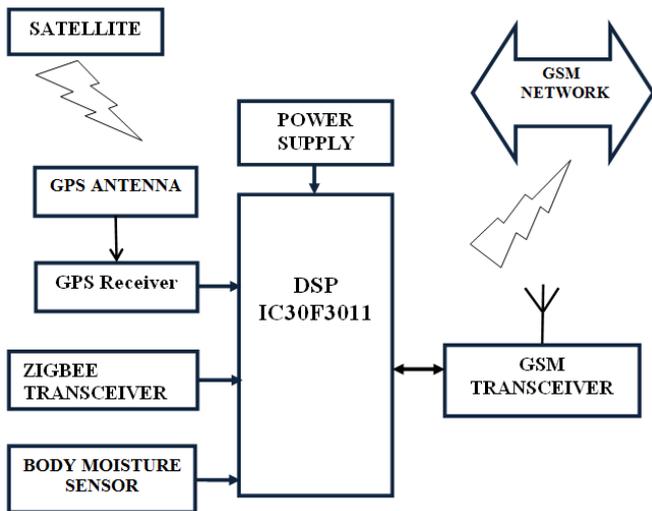


Figure 1. Block diagram of Children

### 2.2 School Van Monitoring



Figure 2. Block diagram of School Van Monitoring Node

Van monitoring through mobile is processed by antenna and ZIGBEE transceiver. Encoder provides security and speed. Medium is used between the parents and children

### 2.3 Parents Monitoring

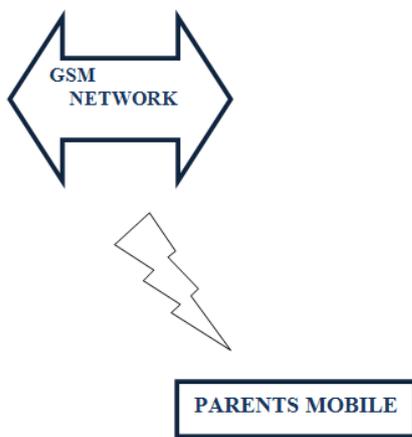


Figure 3. Block diagram of Parents Monitoring Unit

Parents monitoring through mobile is processed by GSM network. Parents mobile shows the location of children based on latitude and longitude position

### 2.4 Circuit Diagram Children Node

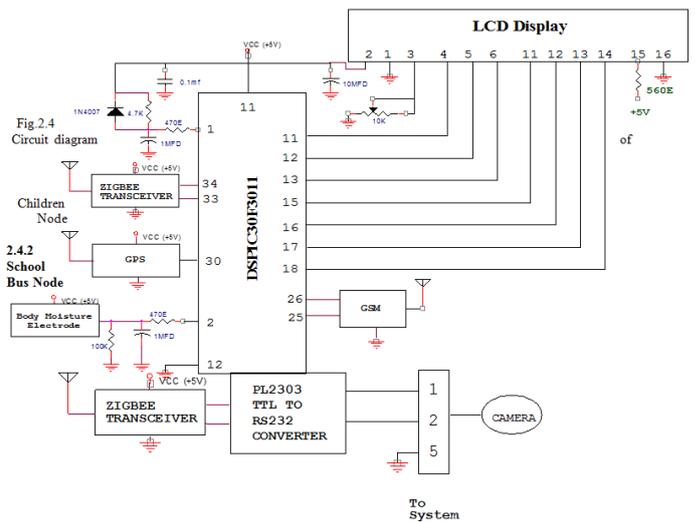


Figure 4. Block diagram of School Bus Node

In the school bus node ZIGBEE is operated as transceiver. Camera used to detect the face of children in process to system

## III. RESULTS AND DISCUSSION



Figure 5. Overall Project Kit



Figure 6. Present Position of School Van

#### IV. CONCLUSION

The researcher conducts a questionnaire of the idea of securing the children by using the GPS tracking systems accompanied the children especially the proposed design, he notes that: The concern with the idea especially as many of them have no experience concerning the systems connected to the child requirements (shoes, wristwatch, school bags...etc). The parents show their feeling of security by approximately 80% when using the following-up systems connected to the tools of the children and their supplies.

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