

Antitheft and Multifunctional smart suitcase with real-time tracking system

Prof.Siddhesh Khanvilkar,Mr. Sahil Bhurke, Mr. Shubham Anbhule, Mr. Shravan Chilka

Department of Information Technology
Pillai HOC College of Engineering and Technology
Panvel, Maharashtra, India

skhanvilkar@mes.ac.in, sahilbhurke@gmail.com, shubhamanbhule00@gmail.com, shravanchilka16@gmail.com

Abstract – The main idea of the Smart Luggage System IoT Project is to develop an easily usable bag carrying machine. This is not just an automation but its beyond that. Bags carry a vital role in our travelling regardless it be a hiking bag or a polythene bag or a travelling bag. Pulling it all over has been done since time immemorial. Visualizing of a bag that conveys its weight, traces its position, which automatically follows the user, by touching the current technology in the old carriers may reveal its true potential. This has always encouraged the project to be easy to use.

Keywords - Smart Luggage, GPS tracking, Human following.

I. INTRODUCTION

Bags have always been an important part of a traveling life. Each carrier has its own value and carries different functions and resources. Dragging everywhere has been done since time immemorial. Considering the bag that follows its location, which automatically follows the user, by understanding the current technology in the old carrier, this has prompted us to do research on a regular basis to make it easier to use, more environmentally friendly and user-friendly.

According to our research, we have developed and designed a carrier, to be reliable while transporting or at any time when we use carriers. While providing convenience to carriers, the prototype also demonstrates antitheft protection. Wherever people go they carry luggage especially at airports they all pull their heavy luggage. Maybe carrying a bag is a very difficult task for adults. If the bag follows the passengers through the concept of human tracking, the whole problem disappears. The following method is performed using data taken from two ultrasonic sensors. Ultrasonic sensors constantly measure the distance between the bag and the person by sending and collecting the waves shown when they hit an obstacle.

The forward, right and left of the bag are based on the signal strength received at each receiver segment. The algorithm compares the reading of three sensors and determines whether to turn left, right or forward. The movement of the bag is done by motions with the system codes. To make the bag following an individual, the distance from the ultrasonic sensor is compared to the specified distance previously stated in the system. The microcontroller constantly monitors conditions and when a person is far away or near a specified distance, the bag

stops. Continuous distance is provided to avoid disruption of the object between the person and the bag. The anti-steal tracking feature is another important feature built in. A bag can contain important and inexpensive items so there is a good chance of theft. GPS and GSM are used to use to track the luggage. Whenever a bag is lost, the user can access the SMS by sending a message to the bag. After receiving this message GPS is activated and approximately the current location of the bag is sent back to the same number via GSM.

II. EXISTING SYSTEM

This consists of a, IR sensors, GSM module a luggage which could move automatically just by sensing the owner's legs movements the main component for input and output devices. Its set up with Arduino board and gps and buzzer, when the luggage is lost or goes outside from a particular range, it gives specific coordinates of the luggage and starts alarming. In this an electronic porter that follows the operator around wherever he/she goes. It is a hands-free load carrying propulsion system that maintains a safe following distance behind the user. Location of the system can be tracked using GPS and GSM.

III. PROPOSED METHOD

The Proposed System consists of an Arduino UNO as a microcontroller which controls all input and output devices. It comes with GPS which helps us to triangulate its location and it doesn't require third-party software. The bag would consist of wheels, its fully automated, it has GPS when we send a message "TRACK", It would give the coordinates of the bags. When the microcontroller embedded within the baggage receives instruction from the user it acts consequently. This will either be for

tracing bags location or to follow the user in direction it goes.

IV. METHODOLOGY

We have provided a mobile SMS system to operate the bag. The communication between the mobile SMS app and the bag is done using GPS and gsm. The bag will follow the user automatically if it gets stolen, it would send an SMS to phone. The IR sensor(middle) and the two IR sensors (one at the right end and other at the left end) that are fixed on the side of the carrier that is faced towards the user are used to detect obstacles and the distance between the user or the obstacle and the carrier. When an obstacle is found the module checks for the position of the obstacle and the carrier moves accordingly to the left or right side. The 3 IR sensors attached to the right and left corners and one in front of the carrier help in doing so. If the IR sensor at the right detects an obstacle and there is no obstacle on the left side then the carrier turns right and this procedure is repeated until the user reaches his destination. The user can check the location of the carrier in the mobile anytime by sending an SMS, hence in case where the luggage carrier is lost, the user can find it easily.

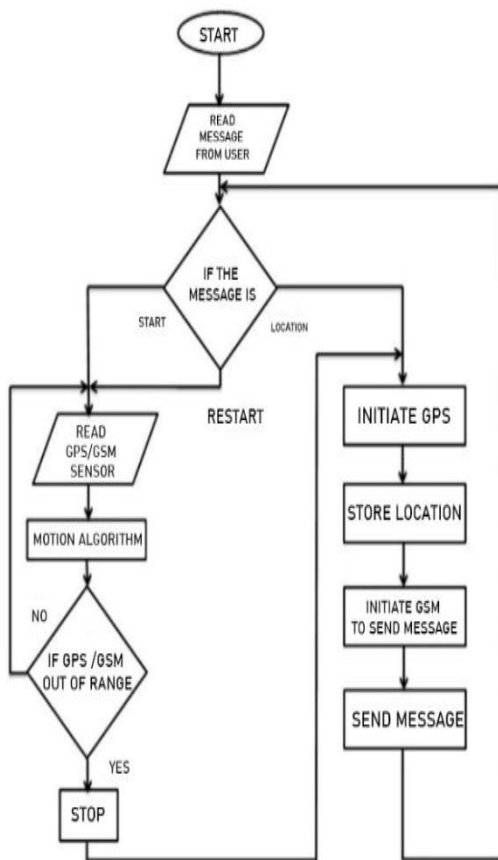


Fig.1 Flow Diagram.

V.RESULT



Fig.2 Output

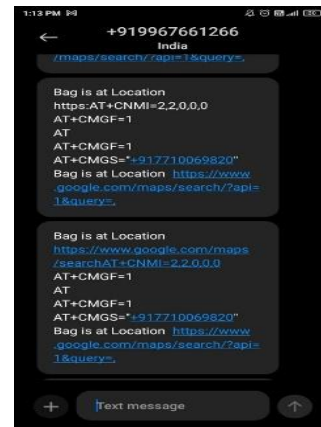


Fig.3 Luggage Location Via SMS

VI.CONCLUSION

The limitations of the traditional luggage will overcome with Smart Luggage. The market is still new and has potential to accept the new face of luggage. Move the luggage easily automatically. The smart luggage will ensure its safety and builds security for its user.

ACKNOWLEDGEMENT

Authors thanks Prof. SiddheshKhanvilkar, Associate professor at University of Mumbai and Head of Department, Dr. Divya Chirayil at Pillai HOC College of Engineering and Technology, Rasayani, Panvel.

REFERENCES

- [1]. Smart Luggage Carrier by Bhanu Prakash Tiwari, Anchal Gupta; Yash Garg, Priyanshu Pandey (IEEE 2018)
- [2]. Smart Luggage Carrier system with Theft Prevention and Real Time Tracking Using Nano Arduino

- structure by P.L.Santhana Krishnan; R. Valli; R. Priya; V. Pravinkumar (IEEE 2020)
- [3]. Near Real-Time Tracking of IoT Device Users; Jinseong Kim; Jae J. Jang Im Y. Jung(IEEE 2016)