“I-Guard”

Prepared by

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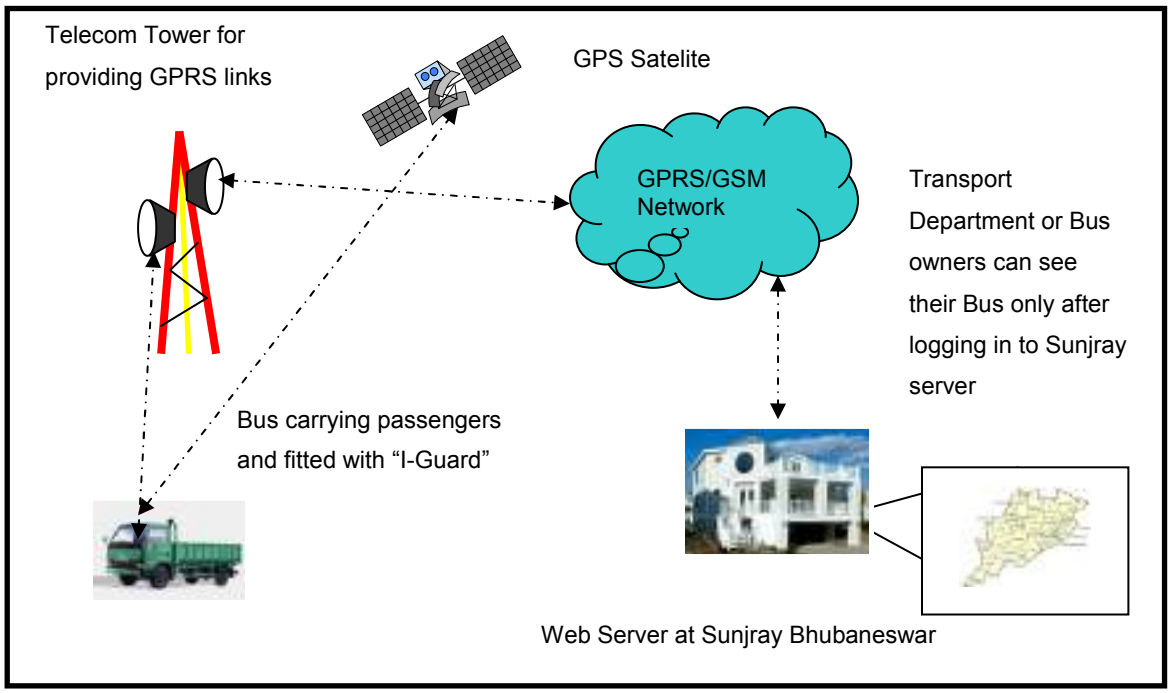
1.0 Introduction

This scope specifies the functionalities of “I-Guard” (GPS/GPRS Product of Sunjray) that can be helpful to all bus owners and transport department to conduct a smooth business without any interruption.

This system consists of two technologies such as Global Positioning Satellites (GPS) and General Packet Radio Service (GPRS). Global Positioning Satellites (GPS) can track all kinds of mobile objects with respect to their real time positions. The location can (latitude/longitude information of the mobile asset at a specific point of time) be captured by a satellite and provided the data to the main server by GPRS. The information (Message and voice) can be transmitted to any trucks using the GPRS link. The following picture shows the overall diagram of the system.



The above picture shows both GPS and GPRS technology used to track a truck/vehicle.

2.0 Modules

2.1 Tracking the bus speed

“I-Guard” consists of a tracking device, which will be installed in the bus that is to be tracked and can be controlled remotely. This device will transmit data related to the speed of the bus,

2.2 Tracking the bus location

I-Guard can locate the bus location (latitude and longitude) with respect to the road network of Orissa.

2.3 Tracking the bus direction

“I-Guard” can also provide the feedback about the direction of the bus moving towards.

Al the above points such as speed, direction and locations can be tracked in every 16 seconds by the satellite available above India. These data are provided to the Sunjray’s Web server through GPRS link for further calculation and reporting.

2.4 Communication with Driver

The driver can be communicated with the bus owner through GPRS link. The bus owner operator can send message to a specific driver after knowing the location or communicate with the driver through voice. At the same time, the driver can also send message to the bus owner or call the owner in any critical condition. All these communication can be saved in a Operational Data Source for future use.

2.5 Controlling the Bus

“I-Guard” is already integrated with controlling facilities to control the movement of the bus. For clarity sake, if the truck owner wants to stop the bus while going towards a dangerous area or beyond geo fencing areas, the bus owner can send a signal through GPRS to de-activate the fuel supply or stop the engine of the truck.

2.6 Viewing the passengers inside the bus

“I-Guard” has a camera attached to it. It captures the picture of each seats and sends the picture to the server periodically. This might help the bus owner to find out the number of seats occupied in the bus.

2.7 Counting number of passengers

“I-Guard” can count the number of passengers entering into the bus also if it is connected with a RFID device. It can count exactly the number of passengers getting into the bus at a certain time or place. This will help to count the number of passengers and the travel time and distance.

3.0 "I-Guard" System

The software is running in Sunjray's office at Bhubaneswar in a high end web server. The application has a user module. The truck owners are the administrator of their trucks only. They can see all the information related to their trucks, communicate with their trucks and control their trucks only through the web browser. Sunjray host the application and provide supports to each truck owners.

4.0 Features

"I-Guard" has the following features.

1. Visualize all the bus with high versatile precision maps in any web browser.
2. Visualize the speed, direction and location easily.
3. Visualize the bus detail and the device ID detail
4. Show the Route History of each bus
5. Play back the route history whenever required.
6. Bus owner can set a boundary (Geo Fencing) for limiting the region of the bus movements.
7. Generate Vehicle/trackers Report (daily, monthly and yearly reports)
8. Online control of vehicles (Engine Power ON/OFF or Fuel ON/OFF)
9. Route Trace and Scheduling the Route
10. Provide the number of seats occupied
11. Count the number of passengers from each stop.

5.0 Benefits

Using "I-Guard" has following benefits

1. Location, speed and direction can be found out easily
2. Number of passengers can be found out easily
3. Controlling the bus can be achieved

6.0 Price

There are two (2) parts while considering the price

1. Initial investment
2. recurring service fees

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6.1 Initial Investment

The GPS/GPRS with camera, relay, speaker, display and antenna will cost 25,000 Rupees (Twenty Fine Thousand Rupees) per bus.

6.2 Recurring Service Fees

1. GPRS SIM Card

GPRS SIM Card fees will be paid by the bus owner every month. Sunjray is in liaison with BSNL and Airtel to get SIM cards with an affordable price. This monthly fees can vary from 100 to 200 rupees per month. This amount has to be paid to Sunjray monthly to pay to the GPRS service providers such as BSNL or Airtel to get the GPRS facilities for message communication with the bus driver and also for controlling facilities.

2. Hosting the “I-Guard” System

Sunjray will host the “I-Guard” System in their Bhubaneswar office. The system will have an user module which will provide the security factors to each bus owners. Bus owners can only view their own buses and control them.

Sunjray will maintain the server, generate reports daily, weekly, monthly, yearly, and provide all these reports to bus owners.

Sunjray will add new buses, change the passwords and allow certain privilege to bus owners for their operation.

Sunjray will charge a minimum fee to host the system and provide the service to all the bus owners. For these types of services, Sunjray will charge minimum 100 Rupees per bus per month. This amount has to be paid monthly to Sunjray.