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EMERGENCY COMMUNICATION SYSTEM «FINDME»

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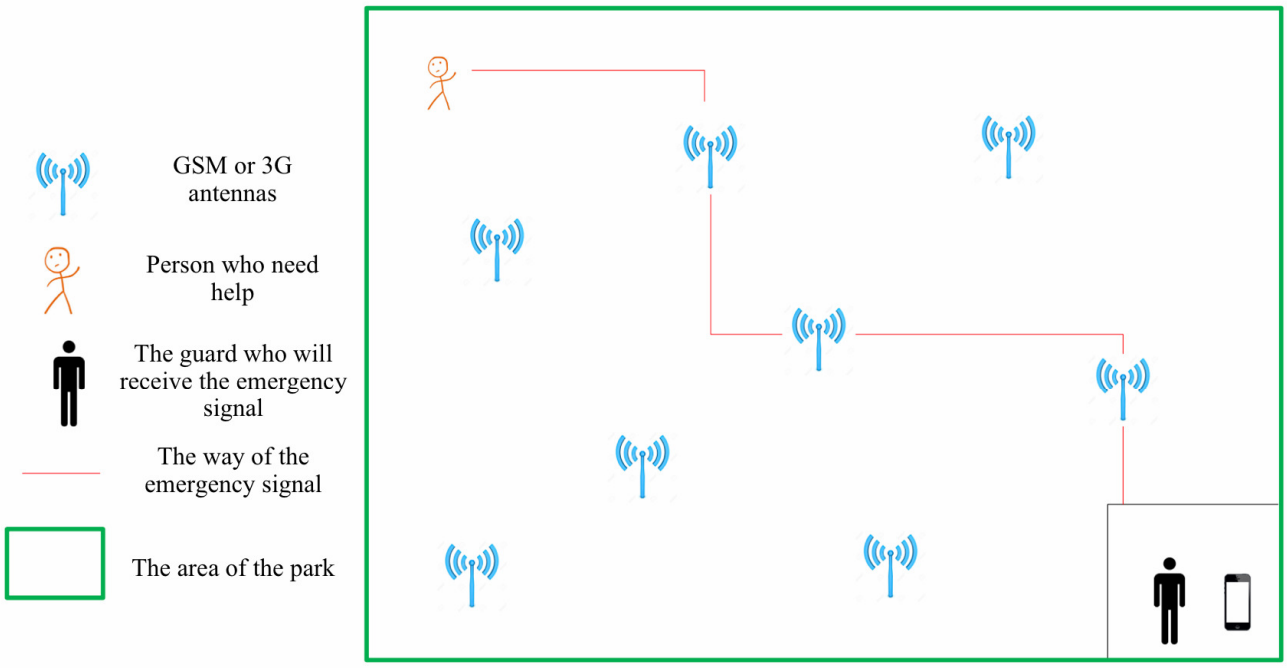
ANNOTATION. The task of the project is to create a system "FindMe", which includes a wrist bracelet that sends signals in case of emergency (in this case we are considering the problem of national parks related to the loss of people)

Introduction. Every year, millions of tourists around the world visit national parks and reserves with the desire to immerse themselves in the wild and explore it from the inside. The area of the national park can reach hundreds of thousands of kilometers. For example, the Northeast Greenland National Park occupies 972,000 km². Nature in national parks is ruthless even to trained tourists. Therefore, losing contact with the outside world is easy enough, and in emergency situations it can be difficult to navigate the terrain, and it is impossible to get help.

Objective. The purpose of the work is the development of the concept of the "FindMe" system and it's program part.



The guy who nees help will press the button, then an emergency signal with the position of the guy will be send by GSM or 3G.
The signal will go to the neariest antenna then to next neariest until arrive to the computer of the guard.
The position of the guy is set by the GPS antenna inside the bracelet.

pic. Emergency Assistance System

The proposed system will contain:
- bracelets for tourists with an emergency button, with GPS and GSM modules;
- standard protocols and GPS and GSM equipment;
- Coordinate display device for parks employees.

Such a system will make it possible to reduce the loss of people to a minimum.

The main part of the work. When entering the territory of the park together with the card, each visitor will receive an emergency communication bracelet, which will be activated automatically when crossing the park boundary. The bracelet will contain a GPS receiver and a GSM transmitter.

The GPS system covers about 99% of the surface of the globe, which makes it possible to track the location of the tracker almost anywhere on the planet. The data on the location and movements are transmitted to the employee of the park through the GSM channel.

The GSM system consists of a number of subsystems, but two of them are used for transmitting information over GPRS: a subsystem of base stations and a subsystem. GPRS-stations are arranged in such a way that their coverage covers cellular and control base stations.

The GPRS subsystem consists of a packet switch and a GPRS gateway. As soon as the tracker requests data exchange via GPRS, the GSM module sends a request to the base station, which in turn transmits information to the base station controller. The base station controller is connected to the packet switch. The packet switch performs functions of processing packet information and converting GSM frames into formats used by TCP / IP protocols of the global computer network Internet. After the conversion, it sends the data to the GPRS gateway. The gateway provides GPRS communication with packet data networks: Internet, Intranet, etc.

The bracelet uses the GPS module to determine the coordinates of its own location using radio signals from GPS satellites. Then the gsm module transmits the information in the form of digits to the monitoring service computer. The information is then transferred to a mobile device tied to virtual maps - Yandex maps or Google maps.

Each employee of the security system will have a device receiving wireless signals "SOS" and the location of the tourist. Upon receipt of such a signal, the nearest employee is sent to the received position of the provision to provide assistance.

The case of the bracelet will be waterproof and shockproof, the button will be under the protective panel to avoid accidental clicks.

Conclusion. The creation of such a system will greatly simplify the work of rescue services and save lives of many lost or difficult situations for visitors to national parks.

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