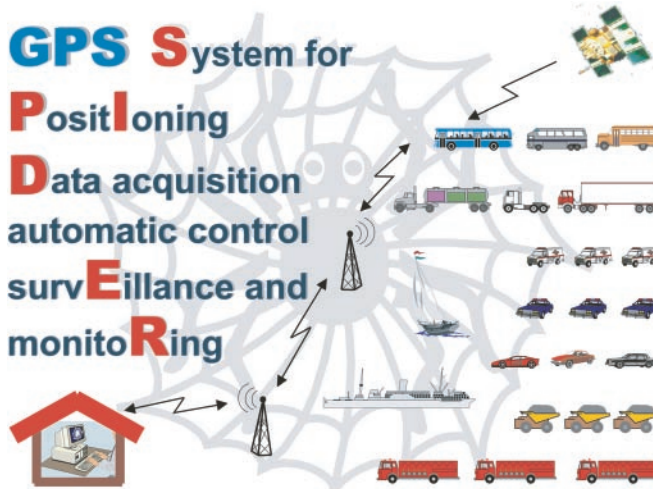


Spider

Automatic Vehicle Location

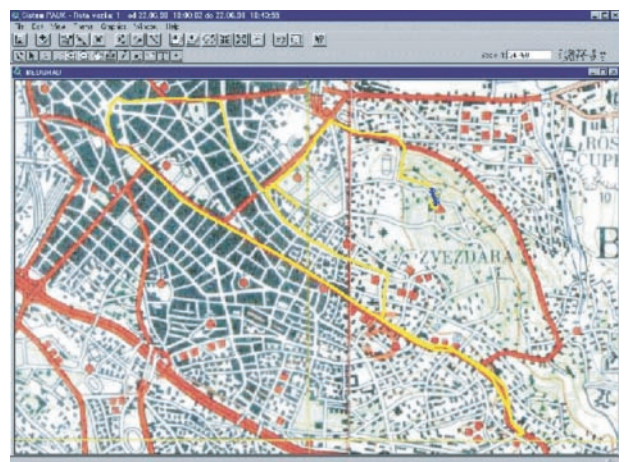


Functions

The main function of the system are as follows:

- Determination of the exact vehicle positions (geographic coordinates),
- Transmission of the position data to the Control Centre,
- Presentation of the position data to the dispatcher.

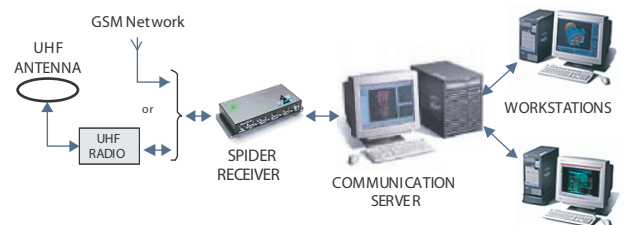
The **GPS SPIDER** System (System for Positioning, Data acquisition, surveillance and monitoring) has been designed and developed by Mihajlo Pupin Institute for companies that have their own vehicle fleet and want to have real-time information on movement of their vehicles. The Control Centre collects information about vehicle positions, and presents the data on a digitalized map of the monitored area, on dispatcher's monitor. Besides current vehicle position, other data can be presented to dispatchers, such as data about the vehicle load, the assigned destination point and the predicted time of arrival to the destination point, as well as data that are collected from sensors in the vehicle (e.g. alarm for unauthorized access, "panic" button, engine and gear working parameters, etc.).



The GPS SPIDER consists of: the Control Centre, mobile SPIDER units mounted in the vehicles, and communication network.

A mobile SPIDER unit receives satellite data, determines its position using the GPS receiver, collects data from various sensors installed in the vehicle, and communicates with the Control Centre.

The data collected by mobile SPIDER units in the vehicles are transferred to the Control Centre through the communication network. These data, together with data held in the database in the Centre, enable the dispatcher to see, on the monitor, on the digitalized map of the territory, the current position of each vehicle, together with all other available data about the vehicle. Particularly important feature of GPS SPIDER is continuous recording of vehicle and driver performance, making the basis for off-line analysis and various reports generation.



Spider Control Centre Equipment

According to customer needs, the mobile SPIDER unit can integrate other elements by which special functions of the system can be achieved. For example, the devices that can be installed in the vehicle and be integrated within the GPS SPIDER system are: the alarm system for unauthorized access, sensors that monitor engine performance, temperature in the refrigerator truck, level of fuel in the tanker, etc.).

An optional notebook PC is available in the vehicle, enabling the vehicle crew to see their location on the digitalized map of the terrain, and to exchange textual messages with the Control Centre.

The communication network can be realized in the GPS SPIDER in two ways: by using UHF radio units, or by using GSM modems and services of existing cellular network providers. Each of these solutions requires different equipment in the Control Centre and in vehicles. Therefore, two variants of the system are distinguished: SPIDER RADIO, and SPIDER GSM. However, according to customer needs, the system can be designed so as to provide for both ways of communication.

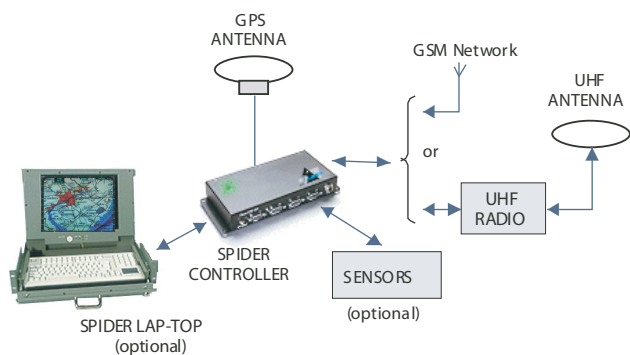


Spider Controller

The GPS SPIDER can be customized according to customer requests and needs, and it can be used in various companies that have their own vehicle fleets, as well as for other applications where exact locations of mobile objects are needed.

Possible Applications

- Transport companies,
- Public transport vehicles,
- Taxi vehicles,
- Rent-a-car vehicles,
- Health and fire emergency services,
- Police vehicles,
- Special delivery vehicles,
- Water traffic and transport,
- Assurance companies,
- Industrial complexes, open-pit mines truck dispatching, etc.
- Military vehicles and/or equipment



Spider Vehicle Equipment

The SPIDER system can be connected to existing databases in the company, so that the set of information available to the dispatcher can cover various data important for dispatcher's decision making. In special applications, such as the application of the SPIDER system for monitoring and control of public transport

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