[SED = a system for remote monitoring of industrial equipment through the GSM mobile phone network.]

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Basic Structure of the System

SED is based on a module provided with a microprocessor that manages the GSM modem resources. This module is called "gsm_manager" and has its own working algorithm (the source code) and communications protocol with the GSM modem and the PLC (automatically programable microprocessor-based) module. Between the "gsm_manager" module and the application (PLC) module there is a parallel communication system, called a parallel data bus. On this data bus, the order and the importance of the monitored events are assigned. If needed, to the "gsm_manager" module, an audio/video module can also be connected.

General Features

The information (digital/analogue signal) is processed by one or more modules provided with microprocessor, by means of electronic devices (optocouplers, infrared passive sensors, thermo-resistors, capacitive microphones, galvanic transformators, etc.). The radio module (GSM/GPRS/PCS) transforms the communication protocols in radio waves of 900/1800/1900 Mhz, and, at the other end, at the reception point, decoding and converting the signals in a database compatible with the PC system take place.

SED may be supplied from multiple ordinary electric power supplies (220V AC / 380V AC / 24V DC / 12V DC / 5V DC), the main power supply being the accumulator battery, which allows a continous operation (limited to the capacity of the battery) of the system.

Software and Application Interface

SED is compatible through standard communication using RS232/ USB / TCP/IP protocols with Windows (XP, 7-10) or Android operation systems, at both data transmission and data reception.

The communication programme allows a direct connection with the radio modules, for the setting of reception/transmission parameters, required for the quality of the data interchange. On reception of the monitored results, there is a "gsm_dispatcher" electronic block.

This module communicates with the PC through one of its ports. The information received by the PC may be stored in a database (server).
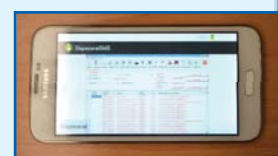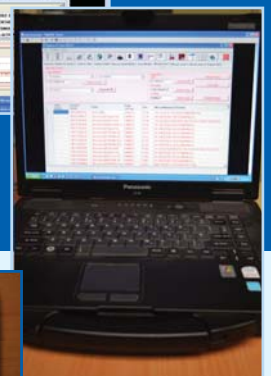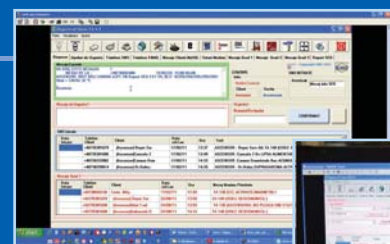
Monitored Systems

Passenger and Goods Lifts

The basic application for monitoring consists in the possiblity to accomplish a vocal connection between the person trapped în the lift cab (as a result of a technical failure) and de service personnel. By means of this system, the service team receives online or through text messaging, information regarding the nature of the failure.
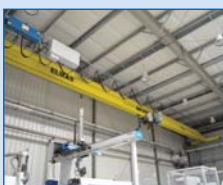
Electric Control Panels for Industrial Installations

The system may also be mounted on industrial installations, such as: industrial cranes, escalators, forklift trucks (provided they move in the GSM provider coverage area), automated storage and parking systems.

Alarm and Monitoring Systems of Real Estate Properties

Provides transmission of visual information (images) and notifications about any illegally trespassed areas. Information form cameras and/or motion sensors can be trasnmitted online or by text messaging.

Access to the Internet

The system can send or receive information in PEER (pair) or Point to Point system, by email, Ethernet, LAN-Internet, etc

Lift Monitoring

The basic function of the SED system f or this application is to provide a vocal connection between the person or persons trapped in the lift car and the dispatch call centre, in the event of a failure, due to the lift operation or to other external factors. For this situation, SED is equipped with an audio module and a card reader.

The reader is required to monitor the maintenance and repair interventions on the monitored lift. The existing installation (intercom/alarm) remains in the lift configuration. The SED device will be linked to this, and the alarm button in the lift cab will have a double function: it will act as an ordinaty alarm and as a dialling alarm of a phone number or numbers of the lift service company. These phone numbers will link to a dispatch type call centre, with a permanent programme.

Main Advantages of SED

▸ right perception upon the nature of the defaults appeared at the equipment

▸ high reliability in operation for the industrial equipments

▸ safety in application because of the equipment's monitoring

▸ a reduced intervention time for service team

▸ reduced service costs for industrial equipments equipped with SED device.