TECOM LLC

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The main areas of activity of LLC “TECOM” include soft- and hardware development for distributed management systems (communications, transport, energy), supply of communication equipment and system integration. The company is a partner of the “TECOM GROUP” corporation (Melbourne, USA) and represents “TECOM GROUP Inc.” in Russia.

For its Russian clients “TECOM” offers latest complex solutions in communications area, appropriate for any level of tasks faced by an enterprise: from delivery and assembling of telecommunication equipment up to its integration with the operating management systems.

“TECOM” is a reliable company and stands for high-quality performance in implementation of engineering projects. This, alongside with wide scope of services on development of hardware and software for different purposes, makes “TECOM” an attractive international partner.

Key benefits of “TECOM” offshore IT outsourcing services:

- US presence
- High quality software development
- Expertise in various technologies and methodologies
- Close cooperation of your company and “TECOM” staff

“TECOM” implements projects in the following fields:

- design, engineering and maintenance of hardware and embedded software for telecommunication equipment: PABX, microwave radio systems, HF/VHF radios, TV broadcasting transmitters, heterogeneous network management systems, etc.;

- design, engineering and maintenance of distributed software-hardware management systems and operation support systems (OSS);

- telecommunication equipment delivery, assembling and maintenance;

- system integration using management systems of leading producers (HARRIS, Hewlett Packard, etc);

- training of the customer’s staff.

At present more than 80 engineering projects have been successfully completed.

Professional theoretical and practical knowledge of IT and communications and good insight into Russian IT-environment help the company quickly find advanced and most efficient solutions.

The “TECOM” team is fully capable to provide our clients with smart software solutions. We are always open for cooperation and happy to offer you high-quality services in software design, development and testing.

SMS -- SMART MONITORING SYSTEM
Multifunction System for Monitoring Communications Networks

Today the telecommunications providers build their networks on equipment that represents a mixture of devices from various vendors, united into a distributed infrastructure. The urge to increase the business performance and the rapid growth of services number and their complication call for improvement of principles and mechanisms of control over equipment operation, response to emergency situations and strategic planning of a company's activity, based on comprehensive study and analysis of equipment operation indices.

Applications

Operators of large, distributed networks must observe a number of parameters to assure that the system status is known at all times. The **Smart Monitoring System (SMS)** has been developed to provide a multipurpose sensor system that can be used to monitor a wide variety of conditions, promptly report data and out of tolerance conditions to the system operator, and activate external equipment.

The SMS can be used to monitor a variety of conditions:

- Physical integrity
- Flooding
- Temperature
- Humidity
- Hazards (Gas contamination of manholes and access areas)

Flexible Architecture

The SMS system consists of small data acquisition devices (Smart Sensors), data-processing units (Master Units), modems and specialized software. A set of Smart Sensors and Master Units can be easily configured and integrated into the network control system.

Smart Sensor software allows a universal, programmable interface to various physical objects. The SS microprocessor can be embedded in a larger unit or located as an external device.

Smart Sensors may be used to measure different types of parameters: temperature, humidity, gas contamination, access/admission. Primary detectors can be selected from third party sources according to the project technical requirements. Smart Sensor uses the reliable industry interface RS-485 for transmission of information to the Master Unit.

The Master Unit segment controller combines up to 240 Smart Sensors and allows:

- Measure of the controlled parameters from the sensors
- Display data (a built-in LCD display, an external terminal program, or a CIT application through RS-232 or Ethernet10TBase interfaces)
- Generate alarm messages when controlled parameters overrun the permissible limits

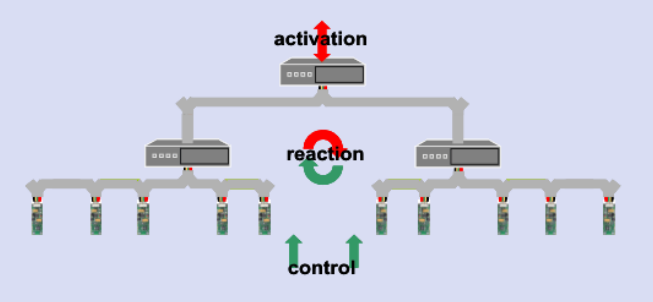
The Master Unit can send alarm messages to different external destinations such as the operator's cell phone, an e-mail recipient, databases or external applications. This ability allows activating complex multi-stage business processes for problem resolution.

Data exchange is performed according to RS-485, RS-232, or Ethernet 10TBase standards through the data channel. The Master Unit can be easily programmed for an automatic reaction in a case of physical quantities changing. The reaction includes several operations, which include activating external equipment. Examples of these operations are the switching on a siren or a signal lamp, or activating a cooling system.

Low Cost

Modular architecture of the SMS system assures its prompt design and installation matching specific customer's requirements. SMS also allows easy reconfiguration or expansion directly by the customer including changes in the Smart Sensors network structure or altering the set of controlled parameters. Total cost of ownership for the SMS system is low because of the ease of integration and minimal operational expenses.

The SMS system is self-sufficient to accomplish the base functions, because the configuration and control tasks do not require additional PCs and software. It is equipped with a LCD display and provides for a menu-driven user interface with the VT100 terminal protocol.



SMS Specifications Highlights

The SMS data channel includes:

- Data acquisition device (Smart Sensor) with the digital output at RS-485 interface
- Data processing device (Master Unit) with RS-485, RS-232, Ethernet 10TBase interfaces
- Operator's control panel (IBM compatible computer)
- Modem for dial-up lines with v.22 commun-ications protocol (Similar to Ancom 1842+ or Zyxel 56K OMNI).

The SMS is offered in two versions:

SMS 1-1 including

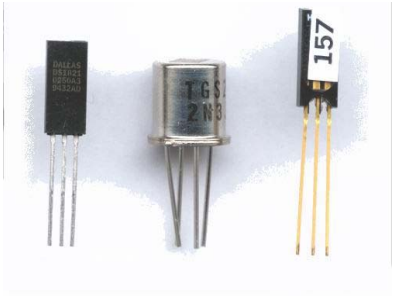
- Smart Sensors
- Master Unit type 1 (segment controller) for Smart Sensor network management

SMS 1-2 including

- Smart Sensors
- Master Units type 1 (segment controllers) for Smart Sensor network management
- Master Units type 2 (master controllers) for the Smart Sensor networks connection.

Smart Sensor Electronics

Sensing Elements
Temperature Gas Humidity



UNIT Specifications

Smart Sensor

Supply voltage 7 to 60 VDC
Current (depends on the type of sensors) 20 to 200 mA
Internal protection from a short circuit
Max length of a segment: up to 1500 m

Indoor applications

- Overall dimensions (LxWxH), 80x60x40 mm
- Temperature range -20° C to +85° C
- Humidity 100%
- Continuous (7x24) operation
- Interface RS 485

Outdoor applications (for manholes and boxes)

- Overall dimensions (LxWxH), 30x10x6 mm
- Temperature range -40° C to +85° C
- Humidity 100%
- Full immersion is possible
- Continuous (7x24) operating mode
- Interface RS 485.

Master Unit

Supply voltage ~220 VAC
Electrical power (depends on type of sensors) 40 to 80 W
Internal protection from a short circuit
Overall dimensions (LxWxH), 240x120x60 mm (variants are possible)
Temperature range 0°C to +65° C
Humidity 30% to 80%
Operating mode is continuous
Interface RS 485, RS 232, Ethernet 10

Other Units (modems, operator's control panel)

Temperature range -20° C to +65° C
Humidity 30% to 80%;
Atm.pressure : 84…106.7 kPa.

“Sosed”— domestic appliances remote management system

Your comfort is its care

“Sosed/Neighbor” is an electronic device aimed to maintain the presence effect in suburban residencies which are not inhabited for longer periods of time.

While making arrangements to visit such house in cold seasons, the first thing that owners shall need to fix up will be to restore a comfortable climate inside the building. The indoor temperatures lower considerably when the owners are on leave, the process of preliminary heating therefore taking much time. This might prevent from visiting a suburban house in cold weather. Now however, the owners can easily reestablish an appropriate temperature inside the house without full heating, simply by turning up the converter a few hours before the arrival.

LLC “TECOM” offers to install “Sosed” in the house to manage and to operate the converter via common telephone distantly from city, car or commuter train. The system will also inform the customer on the actual inside and outside temperature and humidity.

The proposed solution has several basic distinctions from the majority of remote security and control devices operating through mobile telephone that you can find in the market. Other solutions are based on SMS-exchange to send commands and receive information, but the messages may often be delayed or not delivered to the recipient. Besides, many systems are meant for operation only in heated premises.

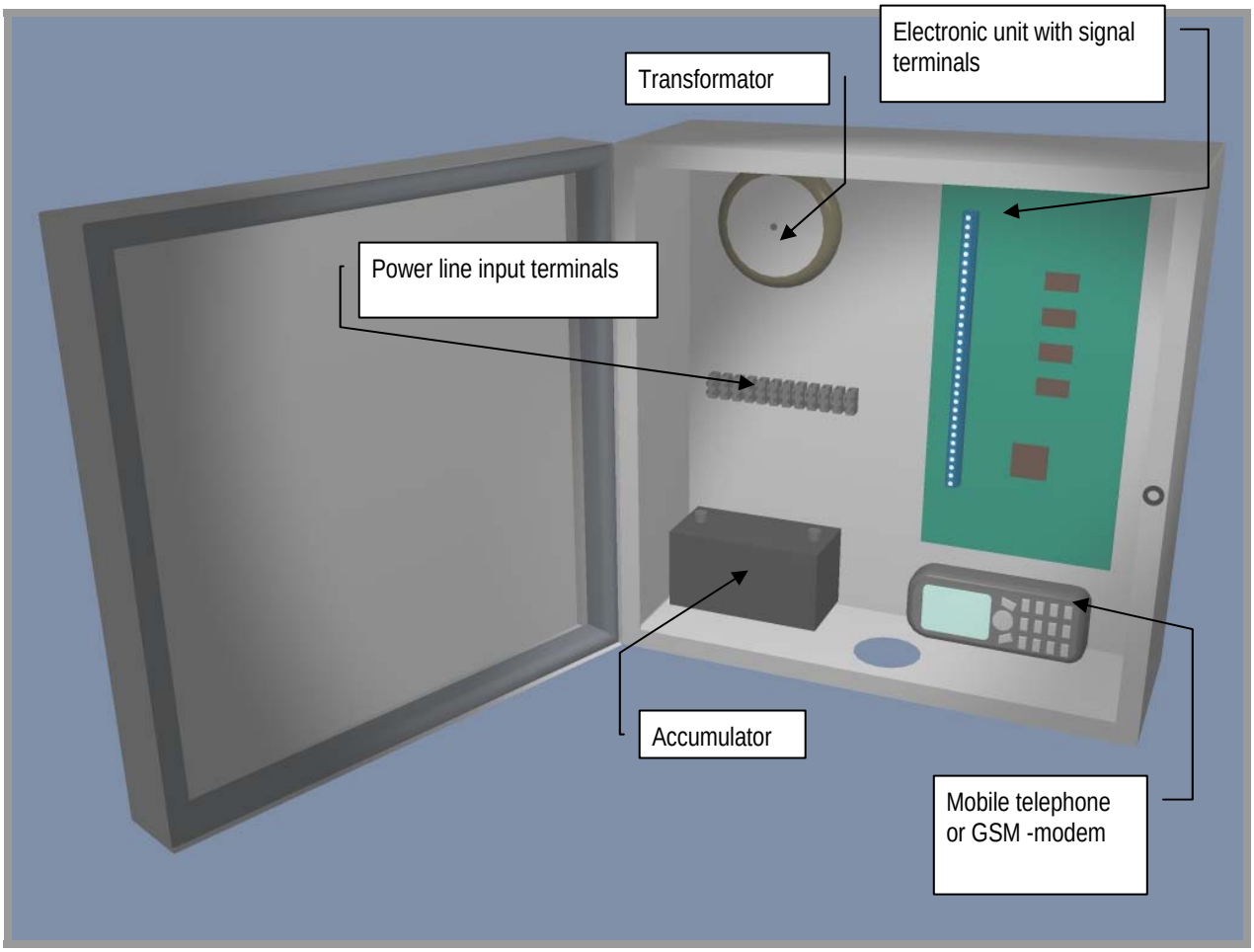
The reasonable price and “filling” based on cutting edge micro-electronic technologies award “Sosed” a few exclusive advantages. “Sosed”:

- manages and controls electric devices through common telephone connection;
- makes possible operation through mobile or fixed telephone;
- provides voice information on the state of the managed objects;
- supports voice menu for device turn on/off;
- ensures autonomous operation in non-heated premises;
- provides for round-the-clock inside/outside temperature and humidity control;
- ensures automated device turn on/off following the preliminary set rules;
- is open for scalable functionality upgrade during operation (new management modes, possibility to add new devices to the system and increase the number and type of sensors, etc.).

“Sosed” can be distantly activated through several easy steps:

1. dial the “Sosed”s telephone number;
2. listen to voice hello-message;
3. dial the access code;
4. listen to voice menu (one - turn up, two – turn off, etc.);
5. dial the necessary command;
6. listen to voice confirmation (device switched on/off, etc)

“Sosed” *draft system design*



The “TECOM” qualified engineers will help assemble and install the system. We are also ready to carry out any individual project and make “Sosed” manage sensors and devices required by the customer (lawn sprinklers, greenhouses, saunas).

Enterprise mobile software system SVS (Store-View-Sync)

A number of American companies use the Russian software, known as SVS (Store-View-Sync), for handheld computers. SVS provides simplified wireless data transfer to the consolidated database.

The software is a joint product of “Tecom” and the US company Pangaea Systems. SVS is based on inexpensive handheld computers, which are linked to central database using standard wireless communications systems. SVS employs Sybase products for database management and data synchronization. The SVS operates under OS Windows Mobile. The software development and customization are done entirely in Russia.

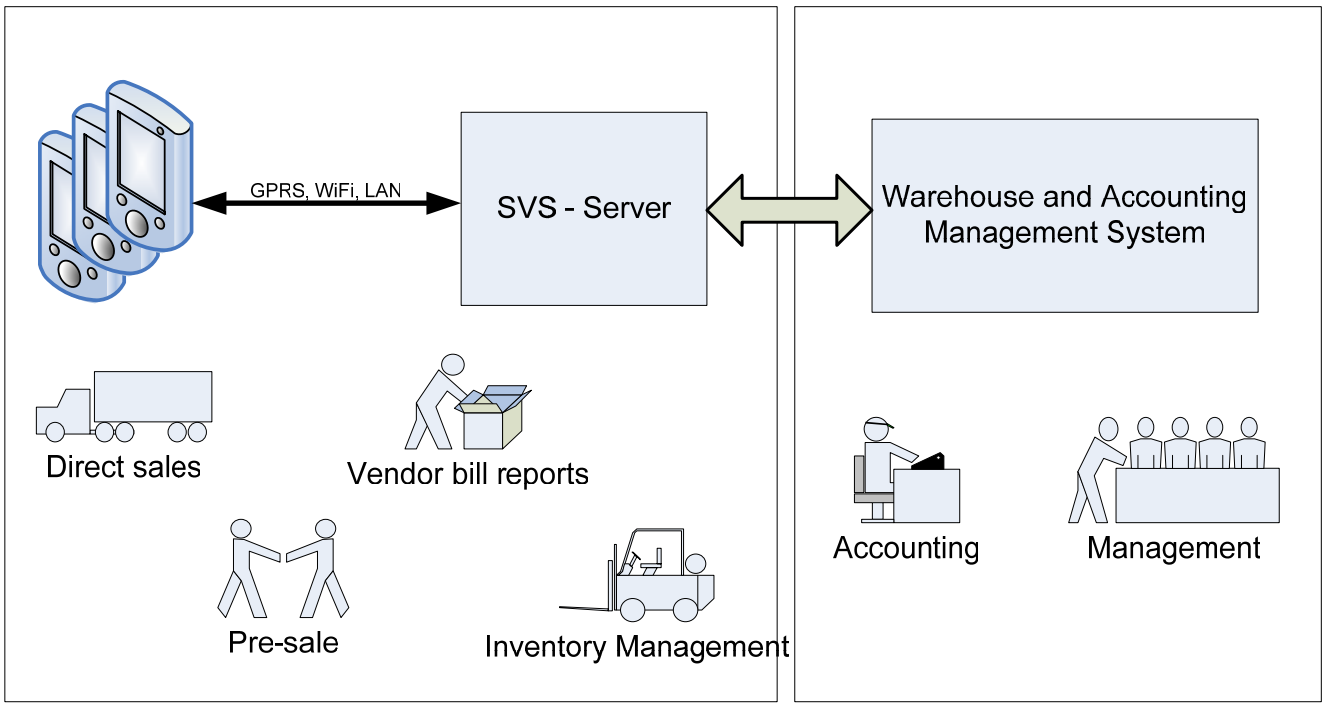
The product’s primary target audience encompasses sales agents of large trade and producing companies, distributors and wholesale enterprises that serve greater areas, as well as any trade firms with extensive product list and client base. The enterprise mobile software system SVS puts fast data display of customer demands in the hands of the sales and delivery force.

The Store-View-Sync system is a software for handheld computers that enables users to:

- fully automate sales force and save invoice preparation time;
- track the availability of goods in stock and at other locations;
- collect pre-order data and timely send it to the warehouse.

The company management can thereby:

- avoid manual input of sales reports into the database;
- timely monitor sales volume changes;
- efficiently manage goods flow and inventory.



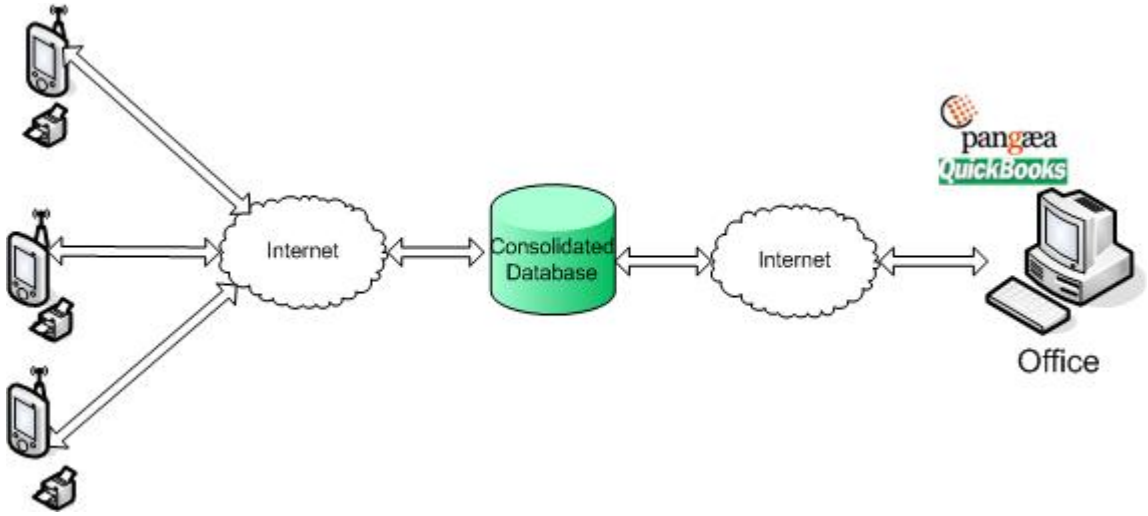
SVS major features:

- check inventory at multiple locations;
- retail trade;
- accept orders from customers;
- transfer inventory between locations;
- order and accept goods from vendor;
- view and edit customer contact information, track balance of payments and personal discounts;
- prepare and print out invoices and other reports.

SVS system benefits:

- full compatibility with Pangaea Enterprise application;
- able to interact with various accounting systems: “1C: Enterprise”, “Best”, “Parus”, “Galaktika” and many other, including clients’ proprietary developments;
- employs handhelds or smartphones on the basis of Microsoft Windows Mobile as mobile terminals;
- data exchange between handhelds and server via TCP/IP protocol using wire connection, as well as wireless (Bluetooth, GPRS, WiFi) communications systems;
- can be customized for individual client needs.

System architecture



Each user has a SVS handheld computer and (optional) wireless printer. The information relevant for everyday operations is stored in the handheld’s database.

The consolidated database stores data for all locations. Periodically the sales agents synchronize their local databases with the central database located in a company’s office via LAN or wireless network connection (GPRS, CDMA, WiFi).

This architecture provides for fast data exchange between users and permits to create a reserve data storage.

Managers can monitor the data from any location through the Pangaea Enterprise system or other office accounting system which works directly with the consilodated database. Also managers are able to run different types of reports (analythical and synthetical) for any period of time, thus allowing for improvement of sales strategy and tactics, and profit maximization. Pangaea Enterprise also makes possible integration of sales data with the QuickBooks accounting system.