



**SCOPE AND FUNCTIONALITY OF
“GAS TELEMETRY V 2.1” –
A HEAD-END SMART METERING SYSTEM**

A wide-angle photograph of a large industrial facility, likely a refinery or chemical plant, at night. The facility is illuminated by numerous bright lights, creating a complex network of glowing structures, pipes, and storage tanks. The sky is dark, and the overall scene conveys a sense of industrial activity and scale.

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Benefits for the Utility Company

- Optimization of the processes of consumed gas quantity reporting and reduction of overall operational costs while avoiding the influence of the subjective factor (human error);
- Consumption monitoring and of historical database maintenance for consumption/ demand analysis and planning;
- Network diagnostics and possibility for due time localization of network losses, which direct impacts on network security improvement;
- Minimization of practical possibility of manipulating the equipment data and the related records;
- Facilitation of check ups and records and reports;
- Saving the inviolability of the industrial consumer's property ; possibility of rapid reporting for whole groups of devices/clients, practically incomparable with the time for their /manual checking;
- Possibility of flexible pricing policy and creation of new innovative products

General Characteristics of Gas Telemetry – version 2.1

- Application server optimized for remote operation via web-based interface;
- No need for installation of additional software on client's workstations;
- Optimization for mobile devices (phones and tablets) for the field work teams through "responsive" interface;
- Possibility of installation and configuration on different software server platforms (Windows, Linux, etc.);
- Fast response;
- Scalability and opportunity for horizontal and vertical extension;
- Increased security;
- No need for purchasing additional software and licenses for database, web server, etc.;
- Support of simultaneous operation of a large number of devices and simultaneous work from an unlimited number of customer's service centers as the only limit is the network interface speed at the server;
- Possibility for operation both in Client's private network (APN or VPN) and via Internet (by Client's choice)

Basic Functionality of the System

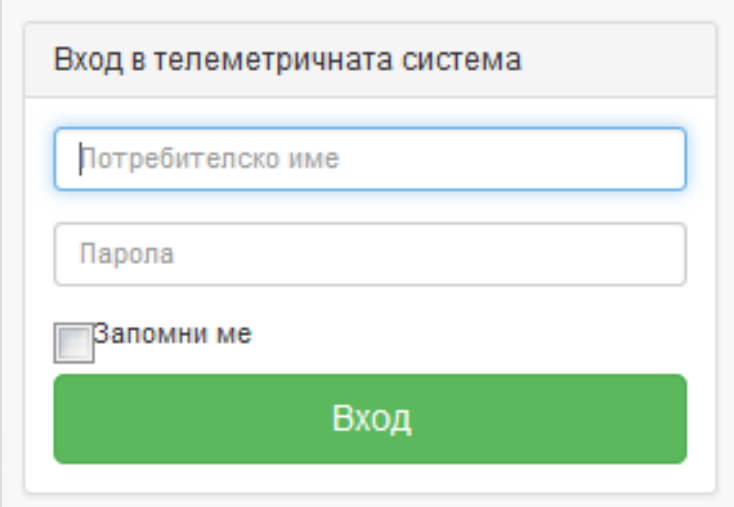
- Remote database collection and filling according to Customer's needs/requirements with:
 - Moment values;
 - Daily records/ archives/ backups;
 - Archives by Client's request (data archives, binary, status, billing and other archives);
- Access control and management of users and rights;
- Panel for easy navigation through menus;
- Searching function by device name or serial number;
- Possibility for creation of virtual points/nodes for consumption monitoring of groups of objects for gas balance control;
- Real-time operation with the available database information;
- The period of the database filling depends on the settings of the end/terminal devices and the modes/regimes of data reading/transmission (from sampling period up to 1 hour for battery devices and data reading once a day to information transmission every 60 seconds for devices with external or solar power);
- Database integrity and possibility of periodic synchronization with secondary database for data redundancy

Hierarchical System for Access Control

Authentication with username and password and levels of access

User Types:

- Administrator:
 - add, delete and change the parameters of existing users
 - add, delete and change the parameters of existing service centers
 - add, delete and change the parameters of virtual points
- General manager – access to all devices, service centers and virtual points
- Service technician – read-only access to all devices in the service center
- Direct access/log in with user name and password
- Automatic log out (session expired)



Вход в телеметричната система

Потребителско име

Парола

☐ Запомни ме

Вход

Home screen of the Telemetry System

Телеметрична система



Търсене...

Начало

Администрация

Потребители

Сервизни центрове

Виртуални точки

Устройства

Данни от устройства

Моят профил

Информация

Изход

Начало

6
Устройства

6
Аларми

Billing
Модул

Профил
Настройки

Към устройствата

Аларми

Към модула

Към модула

Стойности по устройства

Сервизен център	Устройство	Energy Flow Q (E)	Primary Volume (VM)	D Primary Volume (VM)	Base Volume (VM)	D Base Volume (VM)	Аларми
Бургас	Устройство 1	Няма данни за това устройство!					
Бургас	Устройство 2	Няма данни за това устройство!					
Русе	Устройство 3	1625	86189	714	446614.25	5262	1 Аларми
Русе	Устройство 4	Няма данни за това устройство!					
София	Устройство 5	Няма данни за това устройство!					
София	Устройство 6	Няма данни за това устройство!					

Notifications Panel

Брой устройства с аларми

Брой устройства с предупреждения

Дисбаланс при виртуални точки

Последен вход

6

6

10:57 AM

преди 0 мин.

Исход

1

Бургас

Устройство 2

Няма данни за това устройство!

София

Устройство 3

1625

86189

714

446614.25

5262

1 Аларми

1 Предупреждения

Русе

Устройство 4

Няма данни за това устройство!

София

Устройство 5

Няма данни за това устройство!

София

Устройство 6

Няма данни за това устройство!

Дисбаланс при виртуални точки

10:57 AM

Последен вход

преди 0 мин.

Карта на устройствата

Карта

Сателит

Брезник

Радуй

Клисура

Баня

Иваняне

София

Кривина

Казичене

Горни Богров

Столици

Яна

с. Желява

Осоница

Негушево

Саранци

Горна Малина

Долна Малина

Белополци

Огняново

Гол Рак

Селянин

Вакарел

Крушовица

Нови хан

Елин Пелин

Лесново

Доганово

село Лозен

Панчарево

с. Кокаляне

Бистрица

Торфено бранище

Бистришко бранище

Кладница

Рударци

Драгичево

Владая

Големо Бучино

Люлин

Дивотино

Мещица

Велковци

Солища

Новици

Слаковци

Брезовица

Батановци

Богданов дол

Николаево

Перник

Гурмазово

Карта

Сателит

Google

Картографски данни ©2015 Google

Условия за ползване

Показване на сигнал за грешка в картата

GIS (Geographic Information System) - Positioning and Visualization of the Devices on the Map (2)

Телеметрична система

Gallus SOFTWARE SOLUTIONS

Търсене...

Начало

Администрация

Данни от устройства

Моят профил

Информация

Изход

Администрация на устройства

Редакция на устройство

Тип на устройство
AMR3

Сервизен център
София

Име на устройство
Устройство 3

Допълнителна информация

Сериен номер

IP адрес
10.10.0.3

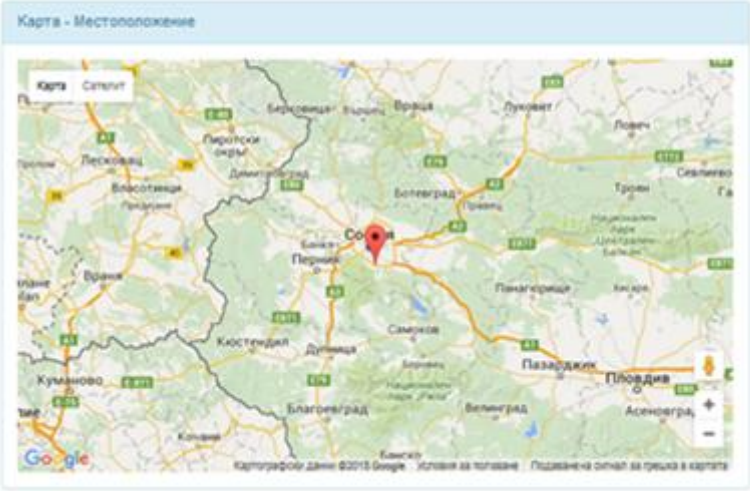
Порт
8090

ModBus адрес
3

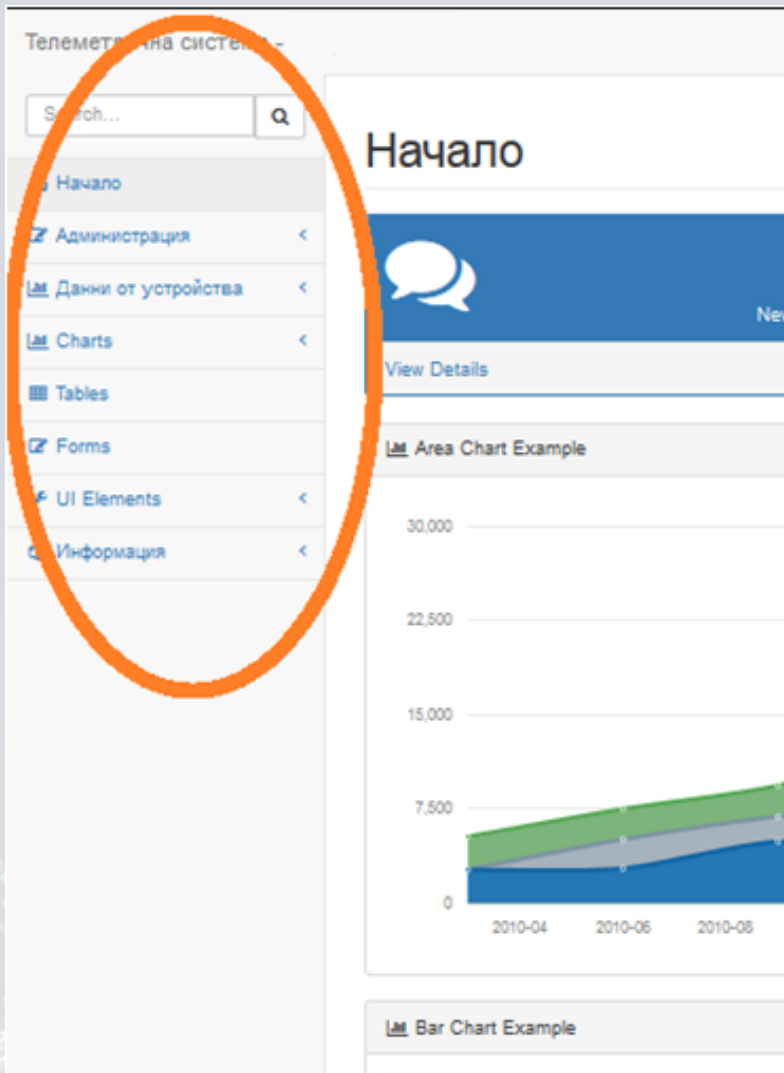
Geo Latitude
42.623815

Geo Longitude
23.354032

Карта - Местоположение



Panel "Main Menu"



The main menu is intuitive and fixed in the desktop left corner for easy navigation between the desktops and provides quick access to the telemetry's basic functions. It contains:

- Company's name and logo
- Search function for a particular device
- "Home" button for return to the user's main screen
- "Administration" button for control of:
 - Users
 - Service centers
 - Devices
 - Virtual points
- "Device data" button for monitoring the parameters and data of terminals (EVC) and virtual points
- "My profile" with user information
- Log out/Exit

Panel: "Selecting the Visualization Period"

Изберете период

Календар

От:

Съб	Пон	Вто	Сря	Чет	Пет	Нед
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

До:

Съб	Пон	Вто	Сря	Чет	Пет	Нед
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Предефиниран период

☐ Данни за изминалата седмица

☐ Данни за изминалия месец

☐ Данни за изминалите 3 месеца

☐ Данни за изминалите 6 месеца

Изпълни

Historical data review and possibility for a period selection and displaying graphs, tables and trends by:

- Calendar with initial and final/end date
- Predefined periods:
 - Last week
 - Last month
 - Last 3 months
 - Last 6 months

Panel "Device Administration"

Телеметрична система

Search... 

 Начало

 **Администрация** 

Потребители

Сервизни центрове

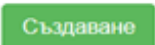
Вируалтни точки

Устройства

 Данни от устройства 

 Charts 

Администрация на устройства

 Създаване

#	Сервизен център	Тип	Име	IP Address	ModBus Address	Аларми	Действия
1.	Бургас	AMR1	Устройство 1	10.10.0.1	1	1 Аларми	  
2.	Бургас	AMR2	Устройство 2	10.10.0.2	2	1 Аларми	  
3.	Русе	AMR1	Устройство 3	10.10.0.3	3	1 Аларми	  
4.	Русе	AMR1	Устройство 4	10.10.0.4	4	1 Аларми	  
5.	София	AMR2	Устройство 5	10.10.0.5	5	1 Аларми	  
6.	София	AMR3	Устройство 6	10.10.0.6	6	1 Аларми	  

- Addition of new devices, information review of the available ones, editing and deleting of existing devices
- Displaying the communication parameters of the devices, including name, affiliation to a service center, type (possibility of predefining different types for facilitated template addition of devices with predefined Modbus map), ways of addressing and used protocols, etc.
- Information for alarm events

Panel "Service centers"

Телеметрична система

Search... 

 Начало

 Администрация 

Потребители

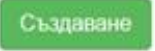
Сервизни центрове

Вируалтни точки

Устройства

 Данни от устройства 

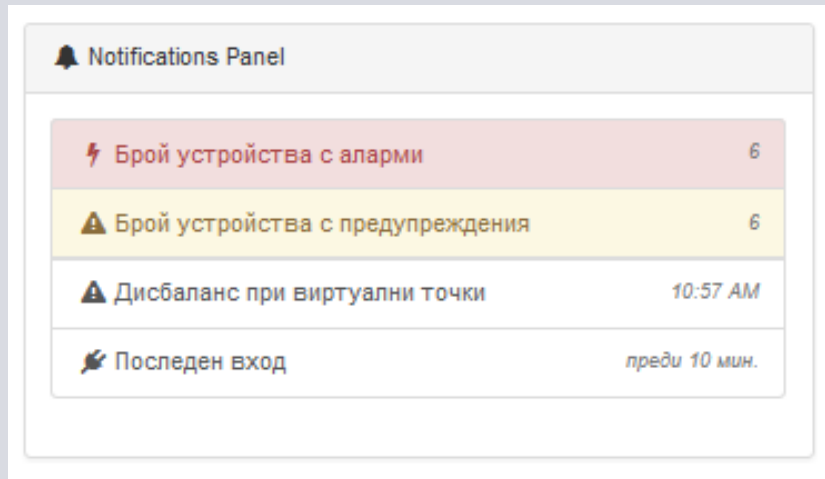
Администрация на сервизни центрове

 Създаване

#	Име	Брой устройства	Телефон	Действия	E-Mail
1.	Бургас	2	0888112233	 	email2@email.com
2.	Русе	2	0888112233	 	email1@email.com
3.	София	2	0888112233	 	burgas@email.com

- Adding of service centers; review, editing and deleting of the existing/available
- Displaying information about the centers and contacts, the number of the devices that are under the service center direct control and any other information, which the Contracting Authority may consider necessary.

Panel "Alarms, Warnings and Messages" on Home Page



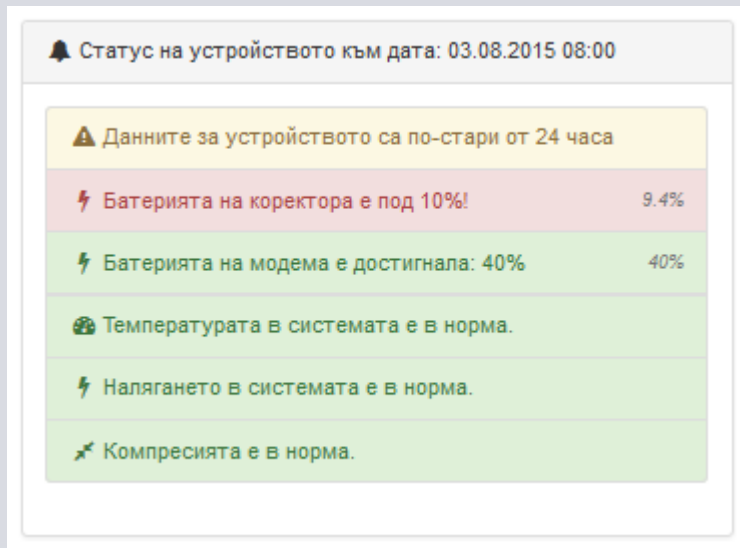
Displaying warning messages and alarms at system login for the following controlled parameters:

- Number of the devices with alarms (change of the signal color from green to red if alarm occur)
- Number of the devices with warnings (change of the signal color from green to yellow in the presence of alarms/warnings)

- Possibility of a warning visualization when discrepancies in quantities at virtual points occur
- In regard to security increasing the panel displays information about the last user login with registered day and time

The system recognizes as alarms also the cases, when there is no data or access to a specific device. In the absence of actual data on a device in the last 24 hours, the system displays a warning. The telemetry uses context icons for clear visualization and problem detection.

Panel „Alarms, warnings and messages”



Displaying warning messages for alarms and events in visualization of the device data for the following controlled parameters:

- Relevance of the available data
- Battery level of the proofreader (popup alarm for level below 10%)
- Battery level of the communicator/modem (popup alarm for level below 10%)

- System pressure in/outside the norm
- System temperature in/outside the norm
- The gas compression in/outside the norm

The telemetry uses context icons for clear visualization and problem detection.

In order the operator's attention to be focused, the panel allows changing of the signal color from green to red or yellow in the presence of alarms, respectively warnings.

Functions of “Historical Data Table” panel

Таблично представени данни относно коректора:

Показване на 10 ▼ резултата Търсене във всички колони:

Показки / скрий колони Запази Копирай Принтирай

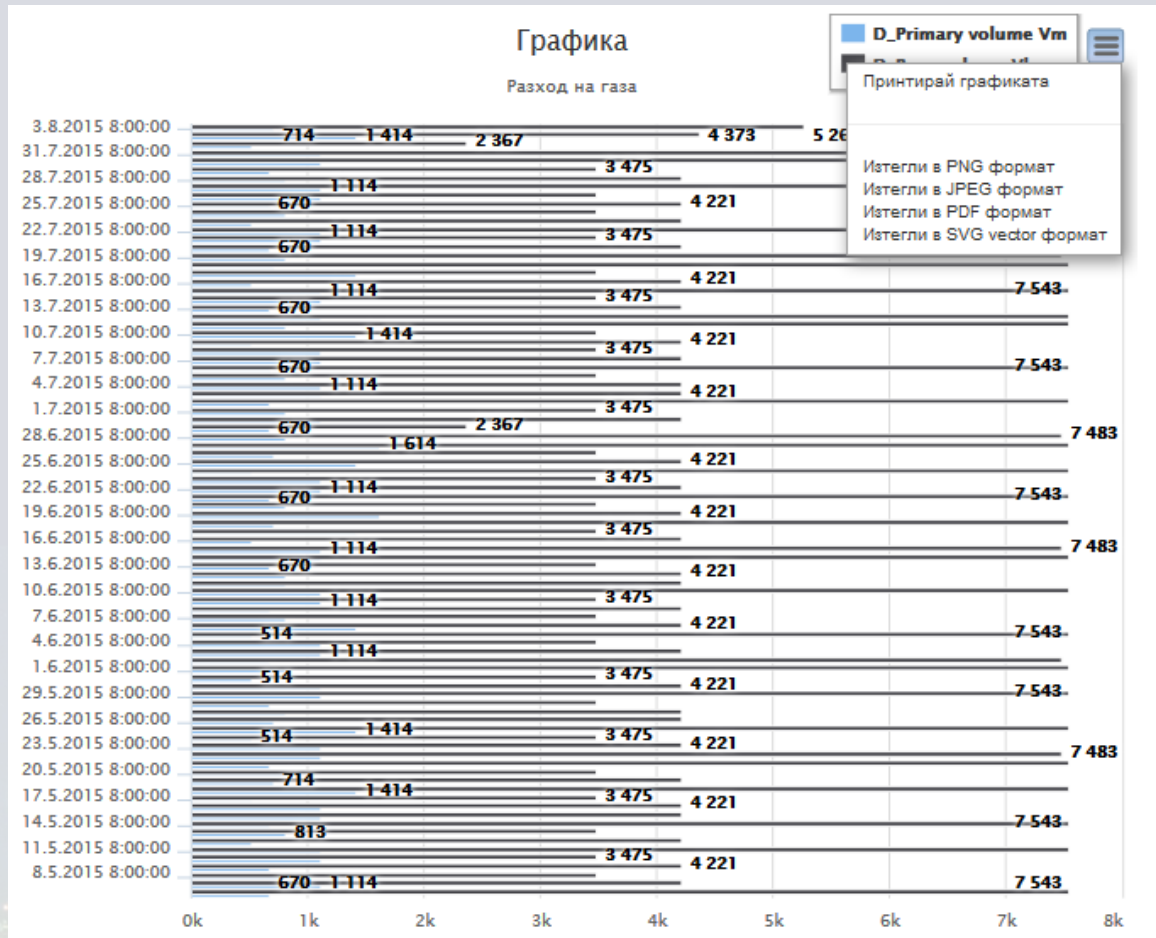
DateTime	Pressure	Temperature	Compress. Z	Energy Flow Q(E)	Base volume Vb
6.5.2015 8:00:00	4.9576	5.18		1625	446614.25
7.5.2015 8:00:00	4.9576	5.18		1625	446614.25
8.5.2015 8:00:00	4.9576	5.18		1625	446614.25
9.5.2015 8:00:00	4.9576	5.18		1625	446614.25
10.5.2015 8:00:00	4.9576	5.18		1625	446614.25
11.5.2015 8:00:00	4.9576	5.18		1625	446614.25
12.5.2015 8:00:00	4.9576	5.18		1625	446614.25
13.5.2015 8:00:00	4.9576	5.18		1625	446614.25
14.5.2015 8:00:00	4.9576	5.18		1625	446614.25
15.5.2015 8:00:00	4.9576	5.18		1625	446614.25
Общ дневен разход на газа за посочения период:					
Среден дневен разход на газа за посочения период:				919.3333333333	

Показване на резултати от 1 до 10 от общо 90

Първа Предишна 1 2 3 4 5 ... 9 Следваща Последна

- Historical data visualization
- Arrangement of the results in ascending/descending order by selected criteria
- Selection of the record number for displaying on each page
- Easy navigating in the pages with the results
- Search function in the results
- Selections of columns with parameters for visualisation (including/excluding)
- Export in CSV, XLS and PDF formats
- Copying the table for import in Microsoft Excel
- Print
- Displaying the total corrected gas consumption for the particular period (by considering also the values of the counters for emergency mode)
- Displaying the average daily gas consumption for the particular period (by considering also the values of the counters for emergency mode)

Visualization of gas consumption through trends and graphics (1)



- Bar chart for multi-criteria analysis
- Possibility of displaying / hiding the predefined values and parameters
- Possibility to export the graph in one of the following 4 format: PNG, JPEG, PDF, SVG vector
- Print image function

Visualization of gas consumption through trends and graphics (2)



- Possibility of exporting the graph in one of the following 4 format: PNG, JPEG, PDF, SVG vector
- Possibility of image printing
- Visualization possibility of particular value/record and its "timestamp" by moving the mouse on the chart/graph
- Scalability or so called "Pan & Zoom" function for displaying a specific period from the graph

Services / Activities offered by GALLUS OOD

The company renders the following scope of services:

- Delivery, installation and customization of the telemetry software, according to client's requirements
- Support and regular updates to the latest version
- Supply, installation and configuration of the necessary hardware and server applications
- Delivery of backup server for regular archiving/reservation of the database
- Expansion through implementation of new modules, according to customer's needs
- Integration with other systems and software applications on customer's requests



Contact information

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