



## УДАЛЕННЫЙ МОНИТОРИНГ & КОНТРОЛЬ ГЕНЕРАТОРНЫХ УСТАНОВОК





# ИНТЕРНЕТ

ВОЗМОЖНОСТЬ ПОДКЛЮЧЕНИЯ LAN + GPRS



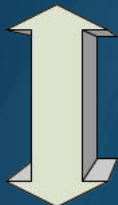


# как это работает?

ДИСПЕТЧЕРСКАЯ



ПРОГРАММНОЕ  
ОБЕСПЕЧЕНИЕ ДЛЯ  
УДАЛЕННОГО  
УПРАВЛЕНИЯ



ИНТЕРНЕТ



КОНТРОЛЛЕР



ГЕНЕРАТОР



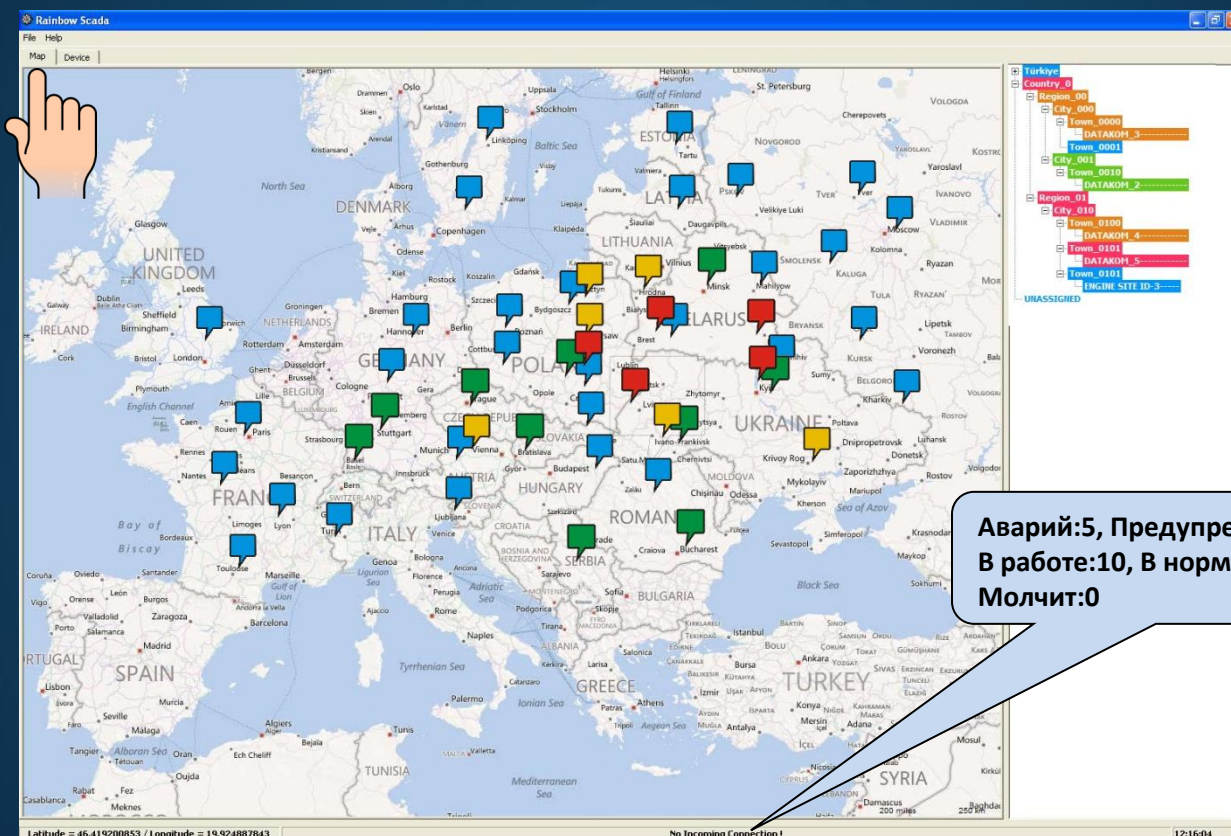
The screenshot displays the Rainbow Scada software interface. The main window is divided into several sections:

- Summary:** Shows various engine parameters such as Voltages (L1-L3, L1-L2, L1-L3, L1-L4, L2-L3, L3-L4), Currents (I1-I3), Frequency (49.99 Hz), Power (P Total = -0.9 kW), Heat (Q Total = 3.3 kW/h), and Fuel (S Total = 0.0 kVA, Pwr Factor = -0.000).
- Engine:** Displays detailed engine data including Battery Voltage (13.86 Vdc), Engine RPM (1499 RPM), Oil Pressure (3.5 Bar), Coolant Temp (69.3°C / 157.1°F), Oil Temp (69.5°C / 157.1°F), Fuel Level (50.5%), Engine Run Hours (1288.81 Hrs), Total kWh (182490.8 kWh), Total kWh (Ord) (7226.7 kWh), Total kWh (Cap) (1172.7 kWh), Hours to Sv1 (173.83 Hrs), and Days to Sv1 (176.82 Day).
- Control:** Features a set of icons for system management, including a gear, a stop sign, a hand, and a power button. A hand cursor is shown clicking on the power button.
- Alarms:** A section labeled "Warning: fail To Stop" with an orange background.
- Map:** A tree view on the right side showing a geographical hierarchy: Country\_00, Region\_00, City\_000, Town\_0000, City\_001, Town\_0010, Region\_01, City\_010, Town\_0100, Town\_S001, DATAKOM\_2, Town\_S001, and Town\_0101.

At the bottom of the window, the status bar shows: "Alarm : 0, Warning : 1, Running : 0, Normal : 0, Silent : 0" and the time "21:18:52".



# Отображение 30'000 генераторов на одном экране



 авария  предупреждение  молчит  работает  отдых



# Подробный мониторинг и дистанционное управление



**СЕТЬ**

**ГЕНЕРАТОР**

**ДВИГАТЕЛЬ**

**АВАРИИ**

**УДАЛЕННОЕ УПРАВЛЕНИЕ**

**Control**

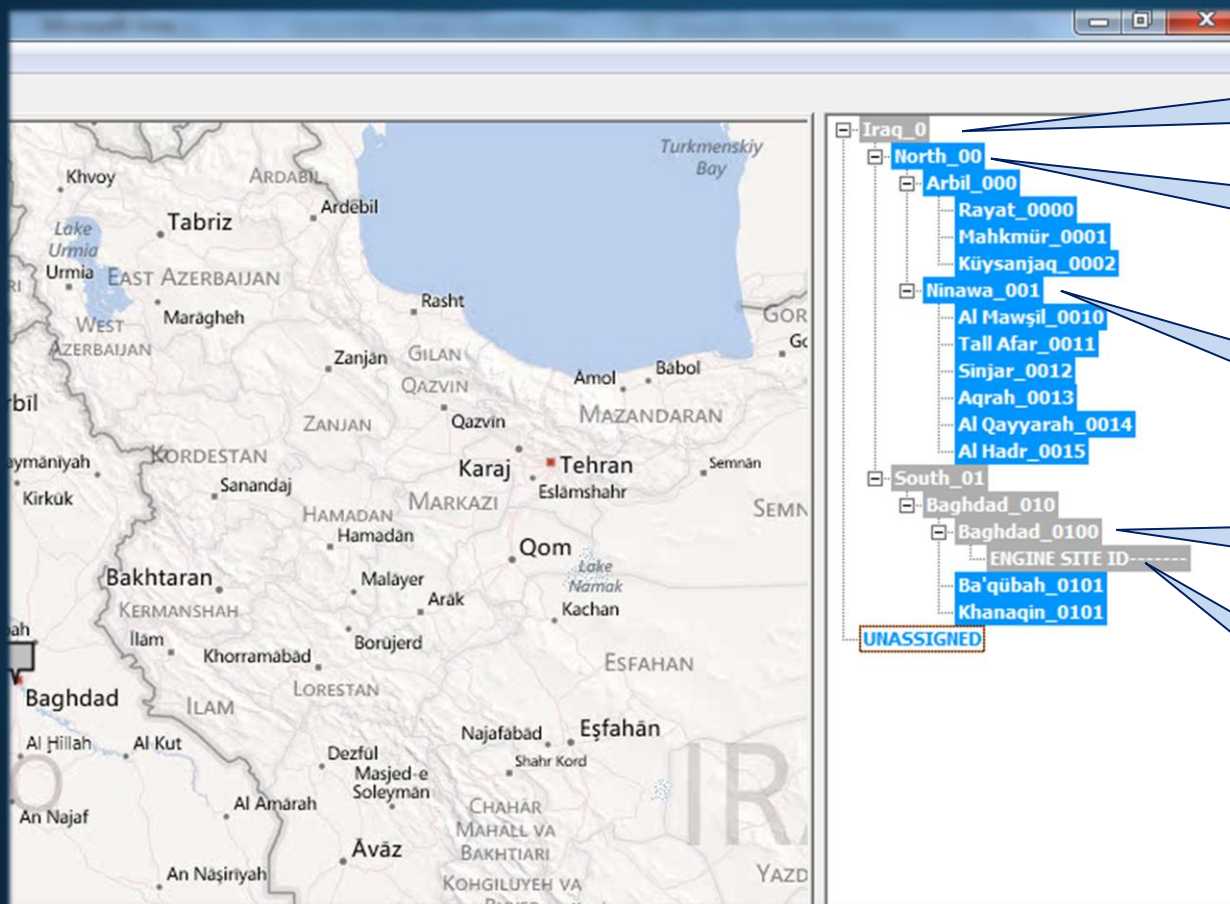
**Alarms**  
Warning:  
Fail To Stop

Latitude = 40.999190852 / Longitude = 29.155282635 Alarm : 0, Warning : 1, Running : 0, Normal : 0, Silent : 0 21:18:52

The screenshot displays the Rainbow Scada software interface. It features a top menu bar with 'File' and 'Help'. Below the menu is a 'Map Device' section. The main area is divided into three columns: 'Mains', 'Genset', and 'Engine'. Each column shows various electrical and mechanical parameters such as voltage, current, frequency, and temperature. A 'Control' panel at the bottom left contains several icons for system management, including a power button, a stop button, and a refresh button. An 'Alarms' window on the right shows a warning message: 'Warning: Fail To Stop'. A tree view on the far right shows a hierarchical structure of locations: Country\_0, Region\_00, City\_000, Town\_0000, Town\_0001, City\_001, Town\_0010, Region\_01, City\_010, Town\_0100, DATAKOM 2, Town\_0101, and Town\_0101. The status bar at the bottom indicates the current alarm state: 'Alarm : 0, Warning : 1, Running : 0, Normal : 0, Silent : 0' and the time '21:18:52'.



# Группировка генераторных установок



Страна

Регион

Город

Район

Генератор

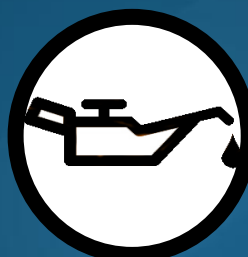


## Отслеживание ошибок до сбоев питания

ГЕНЕРАЦИЯ ПРЕДЕПРЕЖДЕНИЙ ПРЕЖДЕ ЧЕМ ОНИ ПРЕВРАТЯТСЯ В  
АВАРИЙНЫЕ СИТУАЦИИ



Низкий уровень  
топлива



Низкий  
уровень масла



Низкий заряд  
АКБ



Контроль  
автоматического  
режима



СЕРВИСНОЕ  
ОБСЛУЖИВАНИЕ



# Удаленный сброс ошибок

## Сброс ошибок из удаленной диспетчерской

The screenshot displays the Rainbow Scada software interface. The main window is titled "Rainbow Scada" and has a menu bar with "File" and "Help". Below the menu bar are tabs for "Map" and "Device". The interface is divided into several sections:

- Summary:** Contains three columns of data for "Mains", "Genset", and "Engine".
  - Mains:** Volts L1 = 233.8 V, Volts L2 = 224.9 V, Volts L3 = 234.3 V, Volts L1+2 = 399.6 V, Volts L2+3 = 399.4 V, Volts L3+1 = 401.1 V, Current I1 = 0.0 A, Current I2 = 0.0 A, Current I3 = 0.0 A, Freq = 49.99 Hz, P Total = 0.0 kW, Q Total = 0.0 kVAr, S Total = 0.0 kVA, Pwr Factor = 0.000.
  - Genset:** Volts L1 = 234.2 V, Volts L2 = 225.5 V, Volts L3 = 235.8 V, Volts L1+2 = 400.5 V, Volts L2+3 = 401.3 V, Volts L3+1 = 402.9 V, Current I1 = 265.8 A, Current I2 = 0.0 A, Current I3 = 0.0 A, Freq = 49.99 Hz, P Total = -62.0 kW, Q Total = 3.3 kVAr, S Total = 62.1 kVA, Pwr Factor = -0.998.
  - Engine:** Battery Voltage = 13.86 Vdc, Engine RPM = 1499 RPM, Oil Pressure = 3.5 Bar, Coolant Temp = 69.3 °C / 156.7 °F, Oil Temp = 69.5 °C / 157.1 °F, Fuel Level = 50.5 %, Engine Run Hours = 1288.81 Hrs, Total kWh = 182490.8 kWh, Total kVArh (Ind) = 7226.7 kVArh, Total kVArh (Cap) = 1172.7 kVArh, Hours to Srv1 = 173.83 Hrs, Days to Srv1 = 176.82 Day.
- Control:** A panel with several icons. A hand cursor is pointing at the "Reset Errors" icon (a red circle with a white 'A' and a red border).
- Alarms:** A large orange rectangular area with the text "Warning: Fail To Stop".
- Right Panel:** A tree view showing a hierarchy of locations: Country\_00, Region\_00, City\_000, Town\_0000, Town\_0001, City\_001, Town\_0010, Region\_01, City\_010, Town\_0100, DATAKOM\_2, Town\_0101, Town\_0101, UNASSIGNED.
- Status Bar:** Latitude = 40.999190852 / Longitude = 23.899190852, Alarm : 0, Warning : 1, Running : 0, Normal : 0, Silent : 0, 21:18:52.





# Удаленный тест генераторной установки

тест генератора из диспетчерской

The screenshot displays the Rainbow Scada software interface. The main window is titled "Rainbow Scada" and has a menu bar with "File" and "Help". Below the menu bar are tabs for "Map" and "Device". The interface is divided into several sections:

- Summary:** A top navigation bar with tabs for "Summary", "Information", "Genset", "Mains", "Engine", and "Alarms".
- Mains:** Displays electrical parameters such as "Volts L1 = 233.8 V", "Volts L2 = 224.9 V", "Volts L3 = 234.3 V", "Current I1 = 0.0 A", "Current I2 = 0.0 A", "Current I3 = 0.0 A", "Freq = 49.99 Hz", "P Total = 0.0 kW", "Q Total = 0.0 kVAr", "S Total = 0.0 kVA", and "Pwr Factor = 0.000".
- Genset:** Displays parameters like "Volts L1 = 234.2 V", "Volts L2 = 225.5 V", "Volts L3 = 235.8 V", "Current I1 = 265.8 A", "Current I2 = 0.0 A", "Current I3 = 0.0 A", "Freq = 49.99 Hz", "P Total = -62.0 kW", "Q Total = 3.3 kVAr", "S Total = 62.1 kVA", and "Pwr Factor = -0.998".
- Engine:** Displays parameters such as "Battery Voltage = 13.86 Vdc", "Engine RPM = 1499 RPM", "Oil Pressure = 3.5 Bar", "Coolant Temp = 69.3 °C / 156.7 °F", "Oil Temp = 69.5 °C / 157.1 °F", "Fuel Level = 90.5 %", "Engine Run Hours = 1288.81 Hrs", "Total kWh = 182490.8 kWh", "Total kVArh (Ind) = 7226.7 kWh", "Total kVArh (Cap) = 1172.7 kWh", "Hours to Srv1 = 173.83 Hrs", and "Days to Srv1 = 176.82 Day".
- Control:** A row of icons for system control, including a gear icon (Test Mode), a stop icon, a hand icon, a power icon, and a zero icon. A hand cursor is pointing at the gear icon.
- Alarms:** A section with a warning icon and the text "Warning: Fail To Stop".
- Right Panel:** A tree view showing a hierarchical structure of locations: "Country\_00", "Region\_00", "City\_000", "Town\_0000", "Town\_0001", "City\_001", "Town\_0010", "Region\_01", "City\_010", "Town\_0100", "DATAKOP 2", "Town\_0101", "Town\_0101", and "UNASSIGNED".
- Status Bar:** At the bottom, it shows "Latitude = 29.155282635", "Longitude = 29.155282635", "Alarm : 0, Warning : 1, Running : 0, Normal : 0, Silent : 0", and the time "21:18:52".

TEST  
MODE  
BUTTON

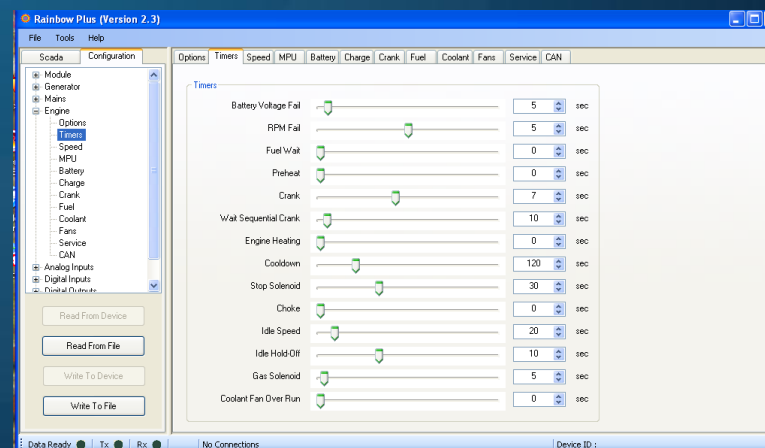


# Пульт дистанционного управления электроагрегата

ЗАЩИЩЕННОЕ БРАНДМАУЭРОМ УДАЛЕННОЕ РЕДАКТИРОВАНИЕ ПАРАМЕТРОВ



ПРОГРАММА  
RAINBOW PLUS

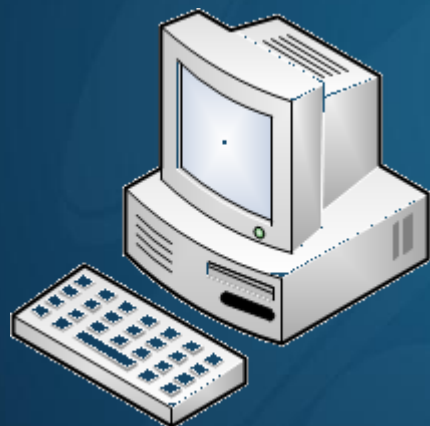




## Удаленное обнаружение неисправностей

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Сократит время реагирования на неисправности



**ДА !**



**НЕТ !**



## Удаленный контроль мошенничества

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сохранит Ваши деньги

кража  
энергии

кража  
ТОПЛИВА



# Дистанционный мониторинг расхода топлива

ИСКЛЮЧИТ ВОЗМОЖНОСТЬ КРАЖИ ТОПЛИВА







# СБРОС ОШИБОК С ПОМОЩЬЮ СМС



**SMS**



**СБРОС ОШИБОК**

# УДАЛЕННЫЙ МОНИТОРИНГ СЕРВИСНОГО ОБСЛУЖИВАНИЯ



Rainbow Scada

File Help

Map Device

Summary Information Genset Mains Engine Alarms

Engine

Charge Voltage = 19.20 Vdc  
Battery Voltage = 19.19 Vdc  
Engine RPM = 1500 RPM  
Oil Pressure = 8.0 Bar  
Coolant Temp = 46.8 °C / 116.2 °F  
Oil Temp = 69.3 °C / 156.7 °F  
Canopy Temp = N/A  
Fuel Level = 51.7 %

Genset Runs = 8  
Genset Cranks = 26  
Engine Run Hours = 1.22 Hrs  
Hours to Srv1 = 248.78 Hrs  
Days to Srv1 = 179.82 Day  
Hours to Srv2 = 448.78 Hrs  
Days to Srv2 = 379.82 Day  
Hours to Srv3 = 648.78 Hrs  
Days to Srv3 = 579.82 Day

1 - oil pressure = 8.0 Bar  
2 - engine temp = 46.8 °C / 116.2 °F  
3 - fuel level = 51.7 %  
4 - oil temp = 69.3 °C / 156.7 °F

**СЕРВИСНЫЕ  
СЧЕТЧИКИ**



## Экономия рабочей силы для обслуживания



**НЕТ !**

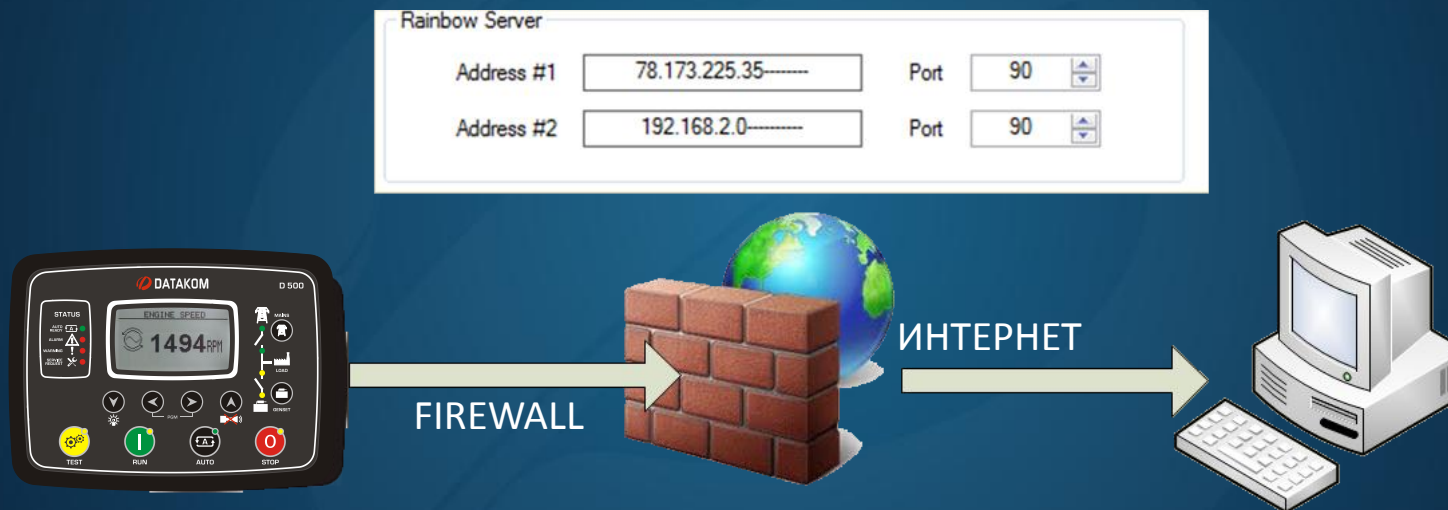


**ДА !**



# Безопасность данных

Данные передаются только в вашу диспетчерскую!



Никто не получит доступ к контроллеру в обход FIREWALLа !



# ИНТЕГРАЛЬНЫЙ ПОДХОД

ИНТЕГРАЦИЯ СТОРОННИХ УСТРОЙСТВ В ТОЙ ЖЕ СЕТИ







# Дополнительный контроль релейных выходов

Контроль всей станцией с помощью D-500





## ПРЕИМУЩЕСТВА

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- ❑ ГЕНЕРАЦИЯ ПРЕДУПРЕЖДЕНИЙ ДО ВОЗНИКНОВЕНИЯ СБОЕВ
- ❑ СБРОС ОШИБОК ИЗ ДИСПЕТЧЕРСКОЙ
- ❑ ТЕСТ УСТАНОВКИ ИЗ ДИСПЕТЧЕРСКОЙ
- ❑ СОКРАЩЕНИЕ ВРЕМЕНИ ВМЕШАТЕЛЬСТВА
- ❑ СОКРАЩЕНИЕ ЗАТРАТ НА ЗАПЧАТИ БЛАГОДАРЯ ПЛАНИРОВАНИЮ ОБСЛУЖИВАНИЯ
- ❑ ИСКЛЮЧЕНИЕ КРАЖИ ТОПЛИВА
- ❑ ИСКЛЮЧЕНИЕ КРАЖИ ЭНЕРГИИ
- ❑ КОНТРОЛЬ КОНТРОЛЛЕРА С ПОМОЩЬЮ САЙТА
- ❑ БЕЗОПАСНОСТЬ ПЕРЕДАЧИ ДАННЫХ
- ❑ ИНТЕГРАЦИЯ СТОРОННИХ УСТРОЙСТВ В ТОЙ ЖЕ СЕТИ
- ❑ УПРАВЛЕНИЕ ВСЕЙ УДАЛЕННОЙ СТАНЦИЕЙ С ПОМОЩЬЮ D-500