CGLMS

Building
Control and Alarm System

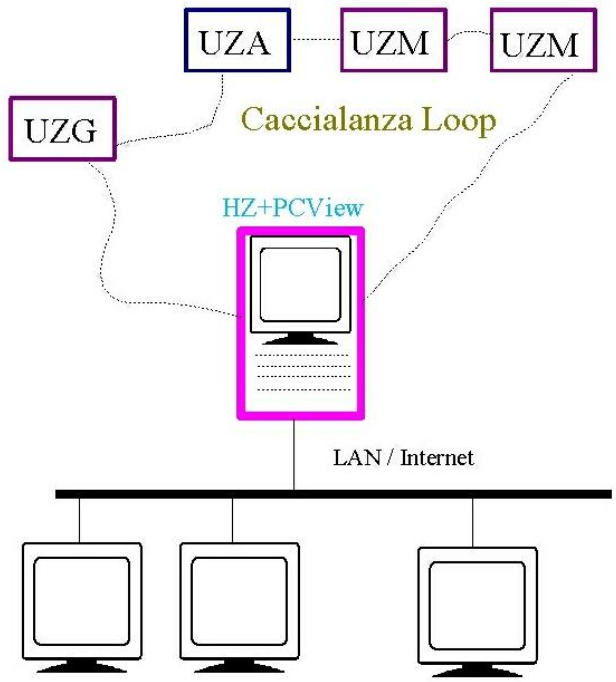
Via Pacinotti 10
I-20090 Segrate / Milano (Italy)

CGLMS – Building Control and Alarm System

CGLMS – *the complete system*

The ***CGLMS***-System (building control and alarm system) of Caccialanza & C. is a hierarchically ordered intelligent system consisting of several components.
The ***CGLMS*** is used to collect, display and process (signalling, alarming) data from fire, security and fault signalisation lines. The system is also used to collect analogue signals from electric switches, which are then further processed, i.e. the data and the switching status are displayed, and subsequent switches are controlled automatically depending on the collected data (fire, security, fault, analogue data and electrical switches). The functionality provided by the system depends solely on its expansion stage.

The core of a ***CGLMS***-system is always the FMZ5-device of Caccialanza & C. This automatic device is used to collect, display and send signals (or alarms) about fire and security signals and faults..



The FMZ5 and a PC with the ***CGLMS*** control program installed represents the minimum configuration of a *CGLMS* system. Both components are connected through a bifilar line in series and form then a single unit. With the aid of the ***CGLMS*** control program, all functions of the FMZ5 can be controlled and monitored through the PC.
The ***CGLMS*** system is also network capable. That means that the whole system can be administered through an existing local network or through the Internet. The local network or the Internet may also be used to send messages and notices, making the system fully controllable from a single control point.

CGLMS **Visualisation Program**

As mentioned earlier, all functions of the FMZ5 system may be displayed and remotely controlled with the CGLMS control program. In addition to that, the CGLMS program is also used to graphically visualise the status of all lines within the FMZ5 system and control them in an intelligent way. The functions and specific features of FMZ5 system are always taken into account in a CGLMS program installation.
System requirements to run the CGLMS are as follows:

- Windows 2000 or Windows XP operating system (NT 4 is also supported)
- available disk space of about 500 MBytes
- graphic resolution of at least 800x600 Pixel (1024x768 recommended)
- at least 64 MB of main memory
- network adapter to connect the system to the local network or the Internet

The **CSPS** control program used to handle communication between central stations (UZG or HZ) is installed on the PCVIEW computer, which is usually located in the main control room (see also the picture on the previous page).

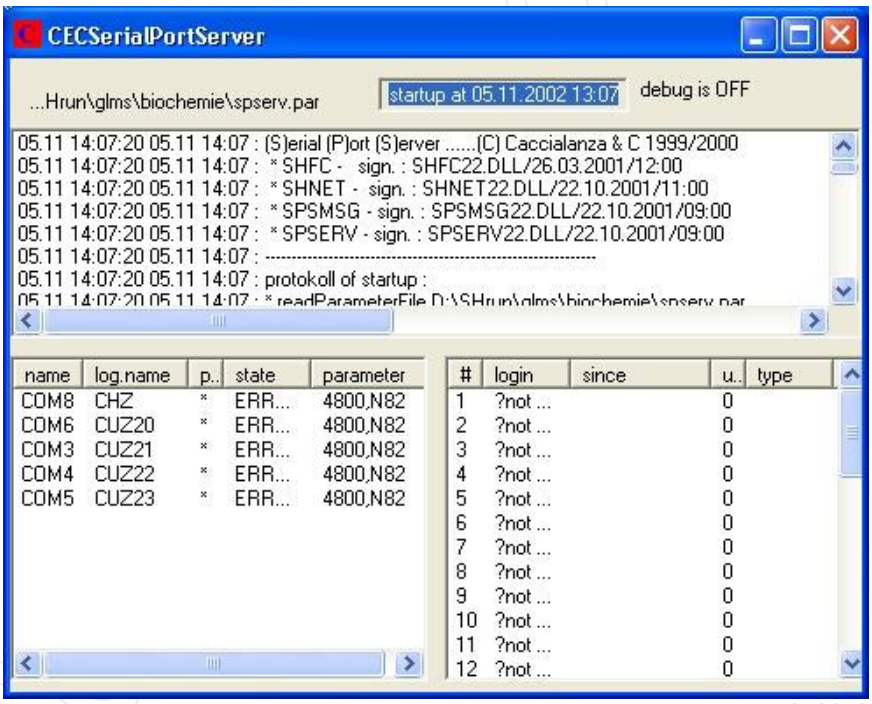


Figure 16: CSPS

The PCVIEW is connected to the substations through a serial or glass fibre cable. It has a network card installed, which allows data exchange through a local network or through the Internet. Integration into a local network enables the control of one or more substations, which can be located at various places.
The CGLMS visualisation program may be installed on either the PCVIEW or on any other system in the local network. Concurrent operation on several computers is also supported.
The program desktop is divided into 4 windows (Hardware, Explorer, Ground Plans and Overview), which can be activated per mouse-click on the toolbar.

Fig. 1 Toolbar

"Hardware" Window

The "**Hardware"** window provides instant and comprehensive overview of the physical state of the overall system. The Hardware window shows also the status of individual substations. The substations and main stations are represented through various symbols. If a fault occurs, the relevant symbol changes its colour.

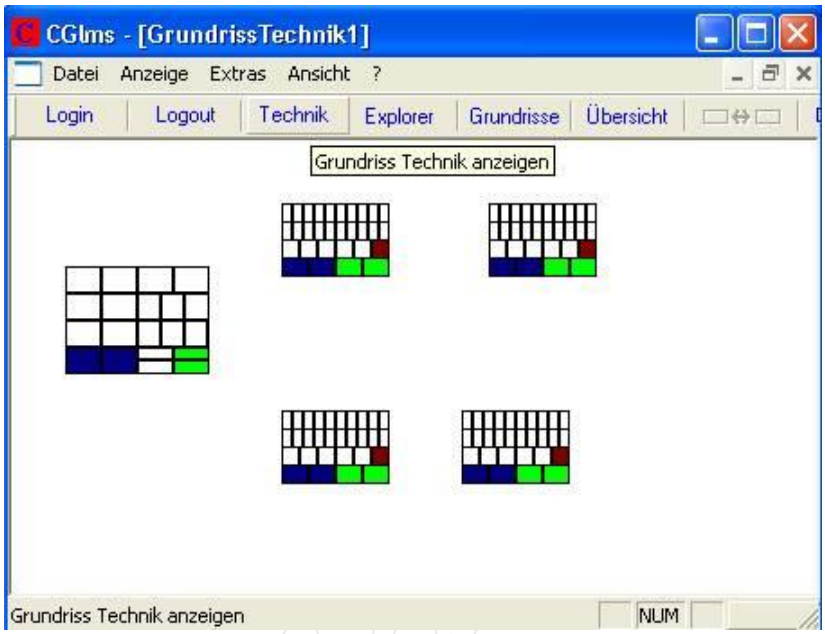


Figure 2 : Hardware Plan

"Explorer" Window

The "**Explorer**" window provides an overview of the overall installation in a tree structure.

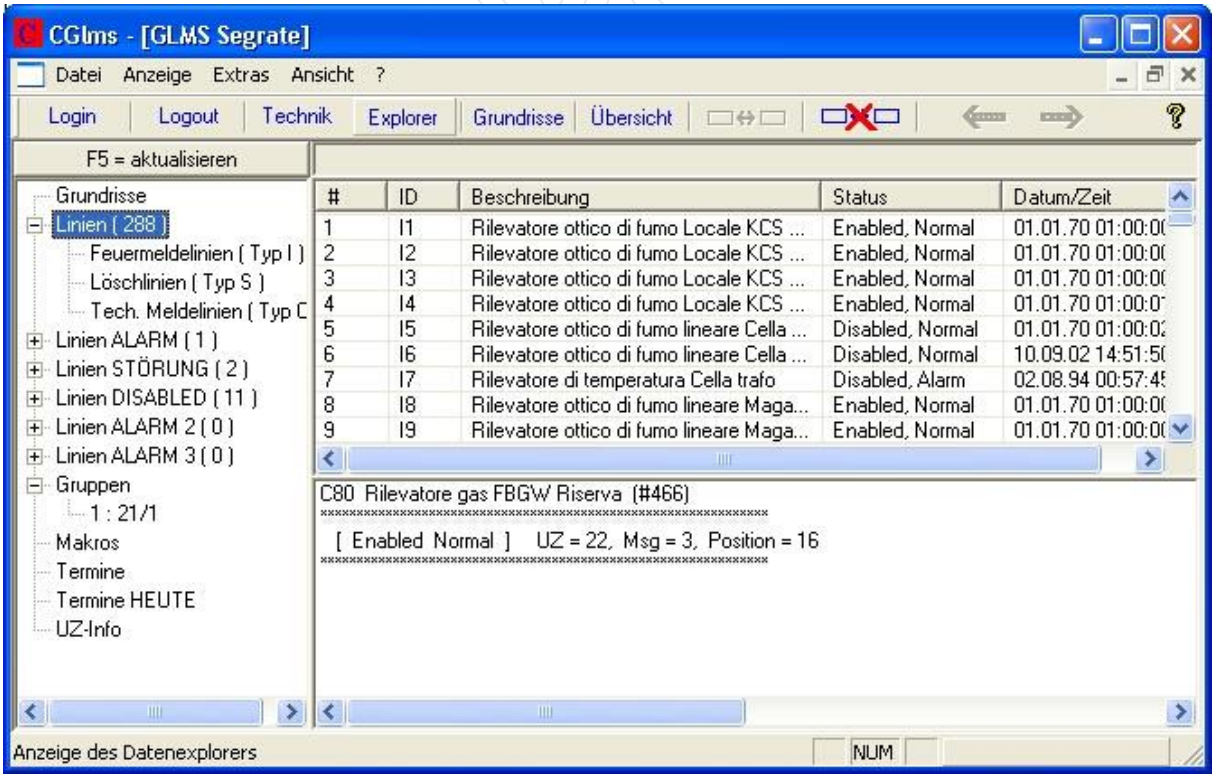


Figure 3: Explorer Window

The right and lower sections of the window change depending on the item selected in the left part. The Explorer window is divided into three parts.

- Select an item in the left part of the window, the so-called <***Selection Area***>.
- The upper right part is the so-called <***Information Area***>. The contents displayed in the <***Information Area***> changes depending on the item selected in the <***Selection Area***>.
- The lower right part of the window is the so-called <***Lines Area***>. This part of the window shows only the status of lines selected in the <***Information Area***>. Only the last 5 changes are displayed.

The following is a description of individual options in the <***Selection Area***>.

Ground Plans

All installed ground plans are displayed in the <***Information Area***>

Figure 4 : Ground Plans

Lines

In the Lines Mode, the **<*Selection Area*>** shows the number of lines in brackets (in this case, 288). In the **<*Information Area*>** all lines with their current status and level are displayed. The date and time of the last change of line status or level are also displayed.

In the <***Lines Area***>, the 5 last changes of the selected line are displayed.

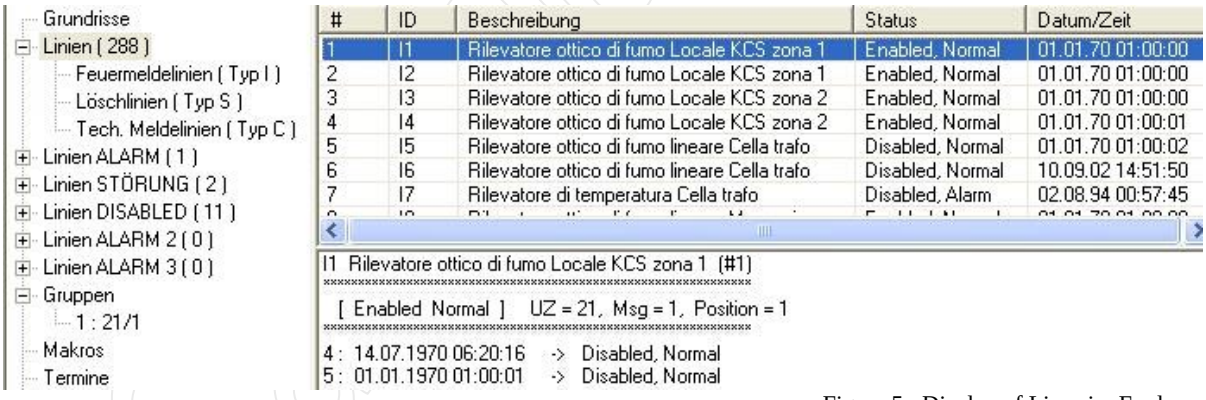


Figure 5 : Display of Lines in Explorer

After right-clicking on any of the lines listed in the <***Information Area***>, a popup-menu opens, which enables the control of the selected line. The commands depend on the type of the line, its status and level.

Figure 6: Lines Control Menu

The following **commands** are available:

- Enable Line <*ENABLE*>
- Disable Line <*DISABLE*>
- Request Line <*REQUEST*>
- Reset Line <*RESET*>
- Activate Extinguish Process <*EXTINGUISH*> — activates extinguish process for clearing out lines
- Load Standard Ground Plan — loads the standard ground plan assigned to the selected line (in the Ground Plans Window)
- Acknowledge line <*ACK*> — acknowledges an alarm message
- End Acknowledgment of line <*ENDACK*> — end acknowledgment of an alarm message

In the "**Line ALARM**" section, all lines will be displayed, which are currently in alarm-level.
In the "**Line FAULT"** section, all lines in a fault condition will be displayed.
In the "**DISABLED Lines**" section, all lines with the DISABLED status will be displayed.
In the "**ALARM2 Lines**" section, all lines currently in Alarm2-Level will be displayed.
In the "**ALARM3 Lines**" section, all lines currently in Alarm3-Level will be displayed.

Groups

Groups are sets of logically related lines.

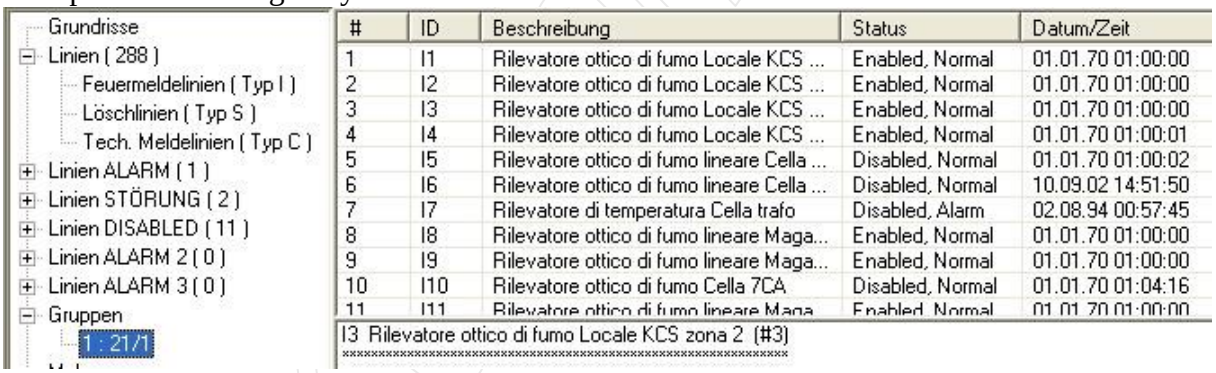


Figure 7 : Group display in Explorer

After selecting a group in the <***Selection Area***> the lines belonging to this group will be displayed in the <***Information Area***>.

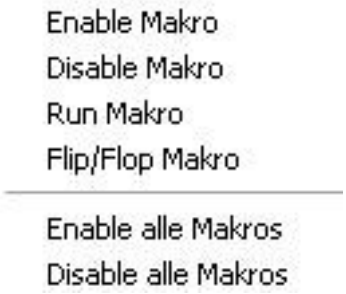
Macros

Macros are sets of commands, which can be started by pressing a button or in preset times.

Figure 8 : Macro display in Explorer

After selecting the "Macros" item in the <***Selection Area***>, all available macros and their current state (Enabled = macro may be started, Disabled = macro can not be started) will be displayed. Additionally, the table shows the date and time of the last start of the macro in the 5th column.

Right click onto an item in the <***Information Area"***> to open a pop-up menu used to run or control individual macros.



Figured 9: Controlling Macros in Explorer

The following **commands** are available:

- Enable Macro — set macro status to ENABLE, i.e. the macro may be started;
- Disable Macro — set macro status to DISABLE; i.e. the macro can not be started;
- Run Macro — run macro;
- Flip/Flop Macro — run macro; after completing, set the status to DISABLE;
- Enable All Macros — set the status of all macros to ENABLE;
- Disable All Macros — set the status of all macros to DISABLE.

Events

Events are operations (switching, macros, etc.) that can be performed at particular times. CGLMS is able to administer recurring (cyclic) and nonrecurring events.

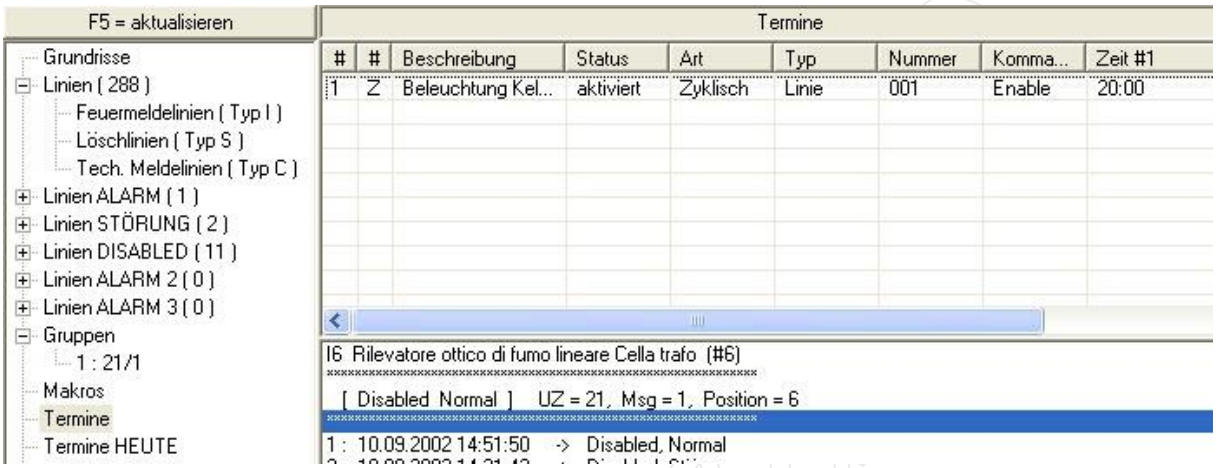


Figure 10: Display of Events in Explorer

If you click on the "**Events**" item in <***Selection Area***>, all events stored in the system will be displayed.

Right-click on an item in the <***Information Area***> to open a popup menu, which can be used to activate events management.

Figure 11: Events management

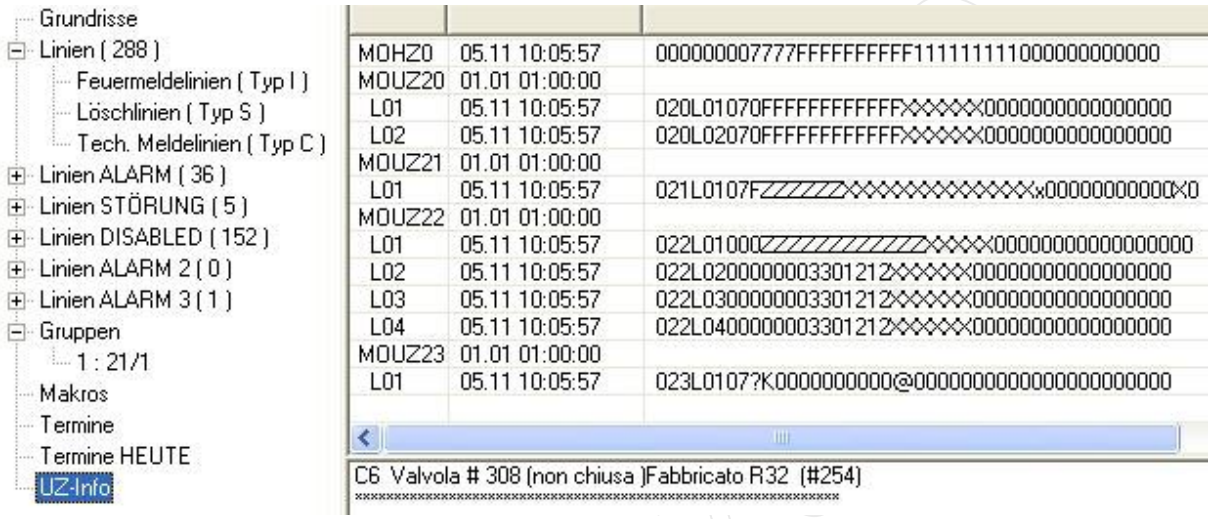
The following commands are available:

- Add Event — Add a new Event.
- Edit Event — Modify or add data of an existing event.
- Delete Event — Delete the selected event.
- Activate Event — Activate the selected event.
- Deactivate Event — Deactivate the selected event

Click on the "**Today's Events**" tab in the <***Selection Area***> to see only those events in the <***Information Area***>, which are to take place on the current day.

UZ-Info

The UZ-Info window is only used in servicing the system. The window lists all messages received from the substations.



Figured 12: UZInfo in Explorer

"Ground Plans" Window

The ground plans are used to graphically display lines, groups and macros.

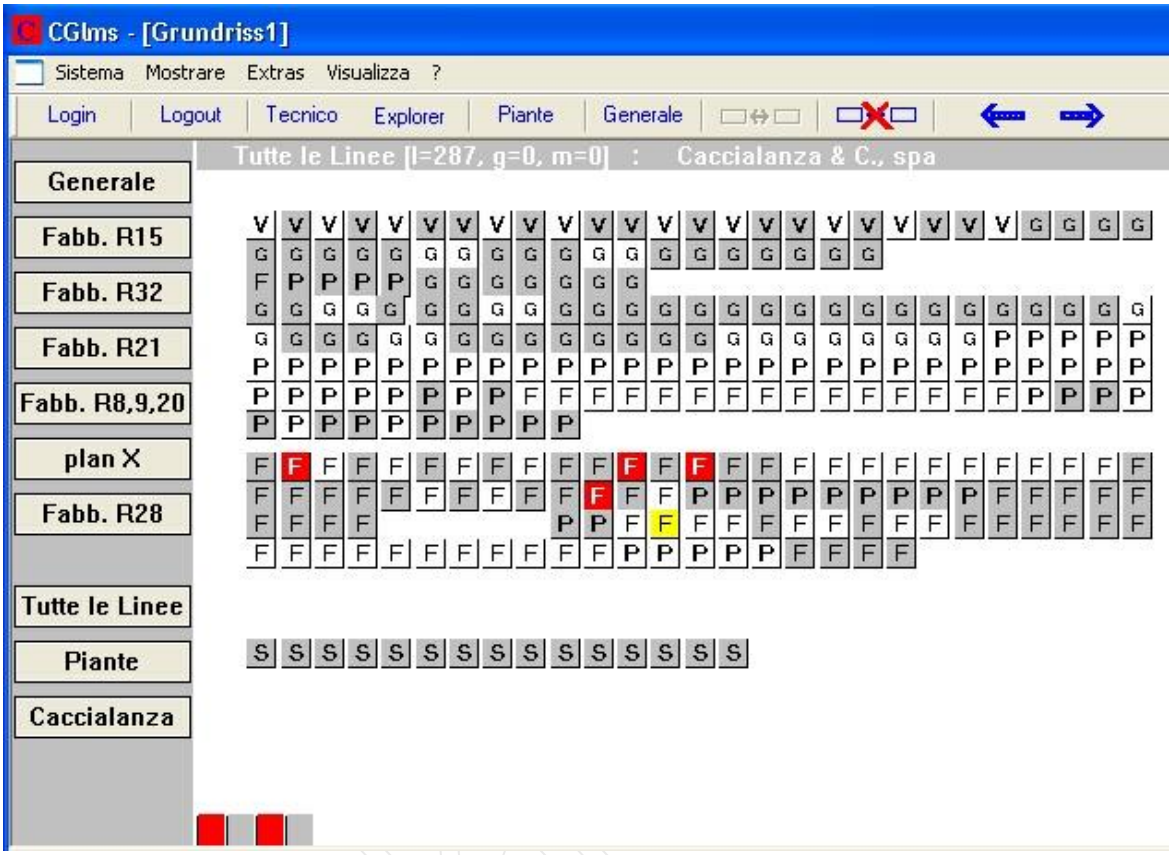


Figure 13 : Ground plans

The symbols change their colour depending on the line status and level.

On the left side, there are specific buttons, which can be used to directly load and display the most important ground plans.
In the lower part, 4 symbols are displayed showing the state of the system.

Each line represented in the current ground plan through a symbol, can be controlled per mouse.
To do that, click on the appropriate symbol.
Then proceed according to the description of the "Explorer Window".

Figure 14 : Ground plans – lines administration

“Overview“ Window

The Overview Window provides an overview of system data. The window is also used to log system messages in its lower part.

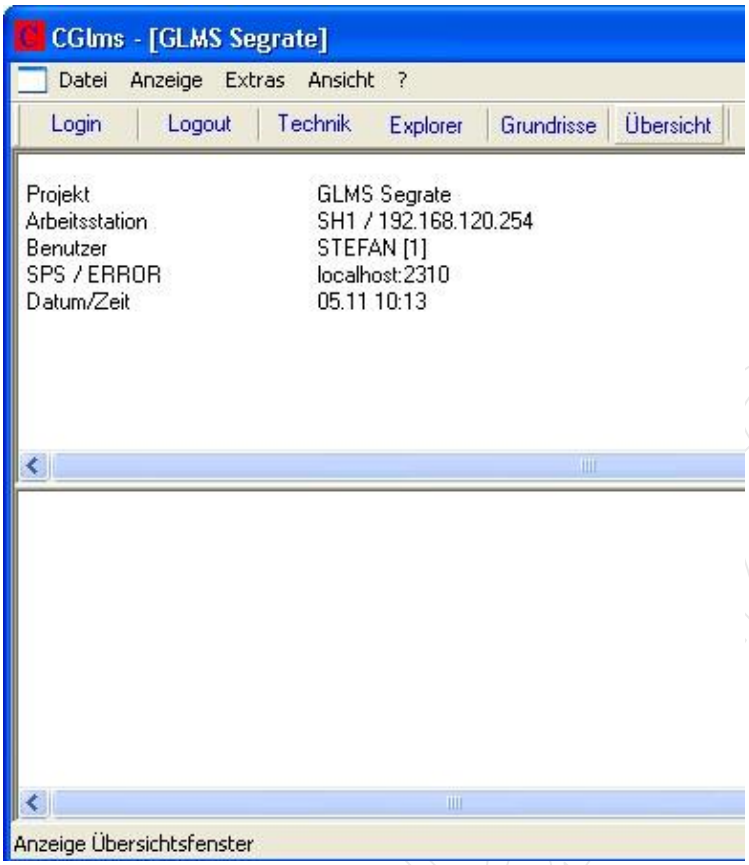


Figure 15 : Overview Window

Overview of CGLMS Features

- graphic desktop
- network capability (local network and Internet)
- support of main and substations
- free installation of data (events, etc.)
- universal design of ground plans
- handling with mouse and/keyboard
- events management
- alarm reset / acknowledgment
- complete logging of all events
- forwarding of events to external or serially connected systems with the help of standardized protocols