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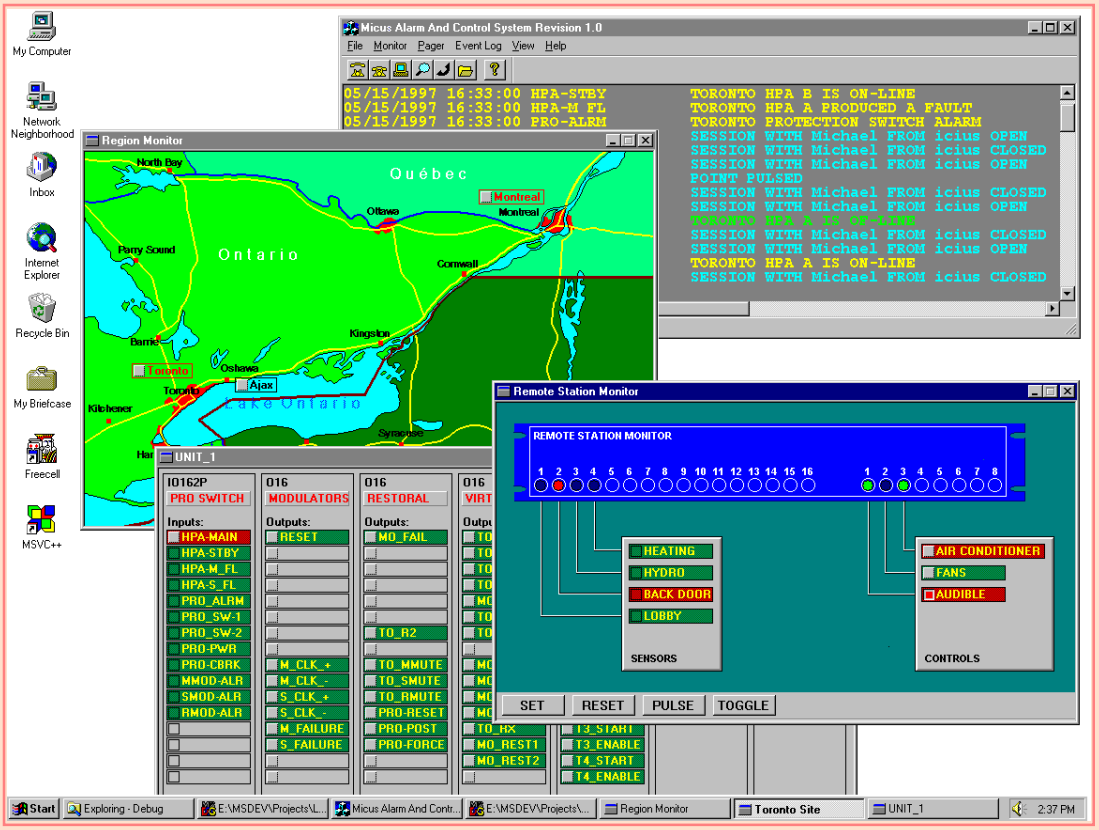
Tired of running from one equipment rack to another?
Frustrated by the cryptic commands that control your equipment?
Need remote access to your site?

Get Micus Alarm and Control System (MACS)

Connect all of your equipment to the computer network and control it from the comfort of your office chair!



Controls, monitors and configures your equipment.

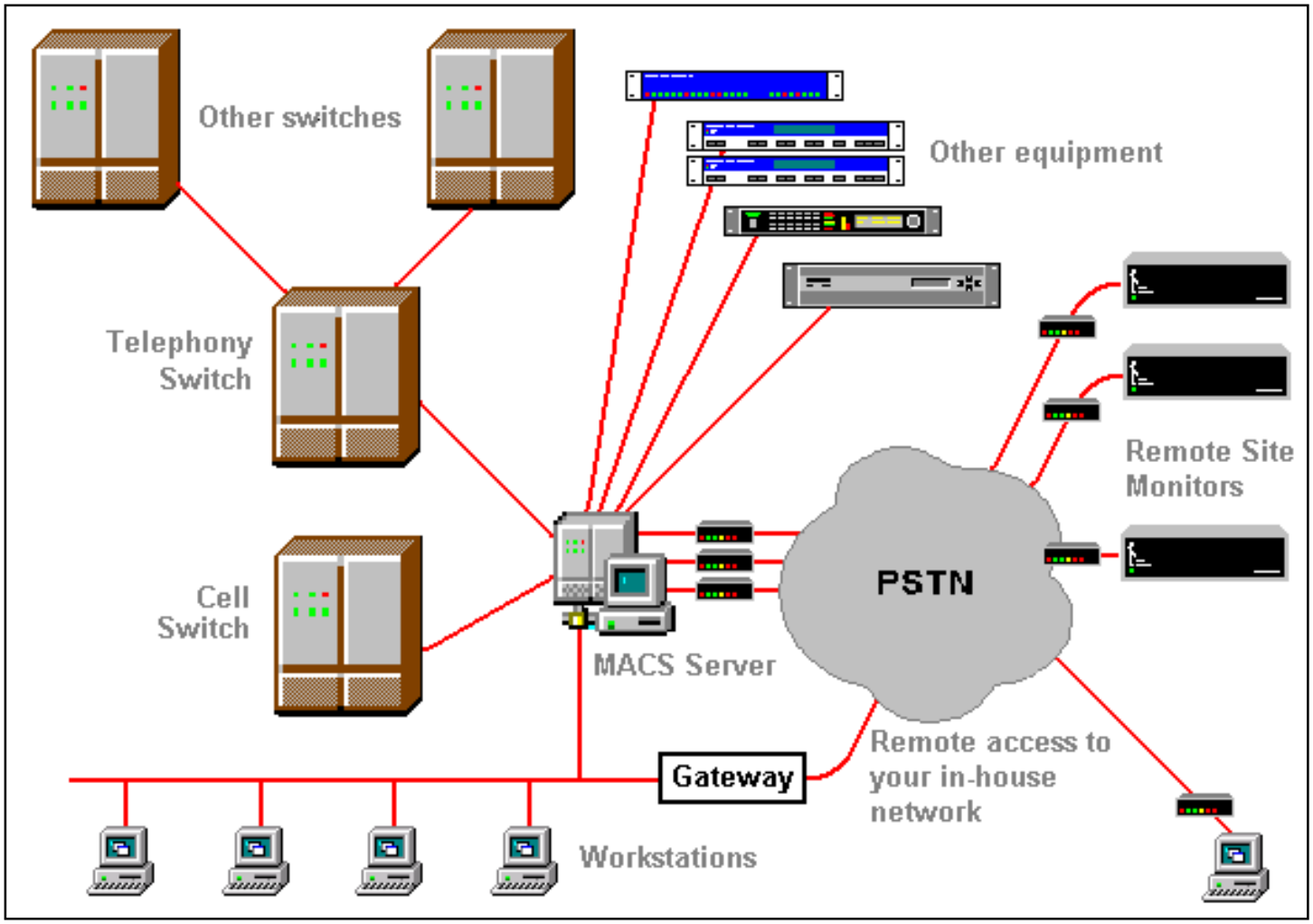
Presents equipment operational status and controls using graphical images which you can easily create by yourself.

Reports changes in the equipment status as text messages you define on your own.

Maintains the event log.

Pages personnel responsible for the equipment that needs attention.

Multiuser capability lets you and your colleagues to carry on your tasks seamless and independently.



Micus Alarm And Control System (MACS) is a computer based system which configures, controls and monitors various pieces of equipment, and collects and processes alarms generated by the equipment.

Equipment operational status and controls are presented using user-definable graphical images, such as geographical maps, building layouts, equipment diagrams, equipment front panels, etc. In addition, all changes in the equipment status are reported in the textual form and saved in the event log files.

Each individual status change reported by the equipment may be configured to activate paging system, which automatically calls a list of personnel responsible for that equipment.

Each individual status change reported by the equipment may be included into a fax and/or e-mail message, periodically sent to a list of predefined destinations.

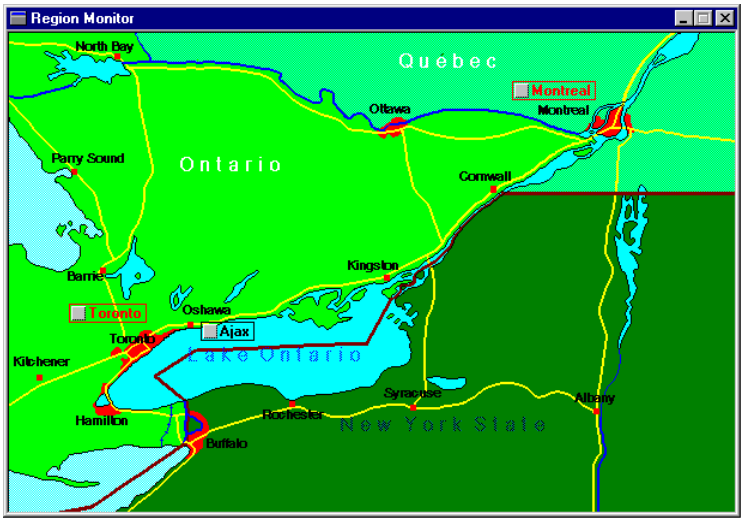
The *Trouble Ticketing System (TTS)*, an optional add-on MACS component, monitors equipment failures and automatically opens trouble tickets, used to document and track equipment repairs.

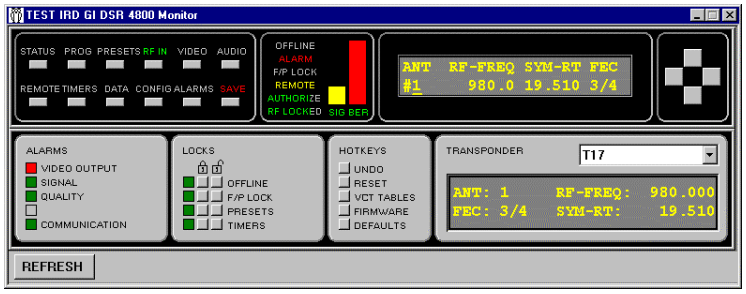
MACS is a multiuser system, implemented as a distributed client/server application, which runs either on a single computer or on a local or wide area TCP/IP network, under the Windows NT and/or Windows 95 operating systems.

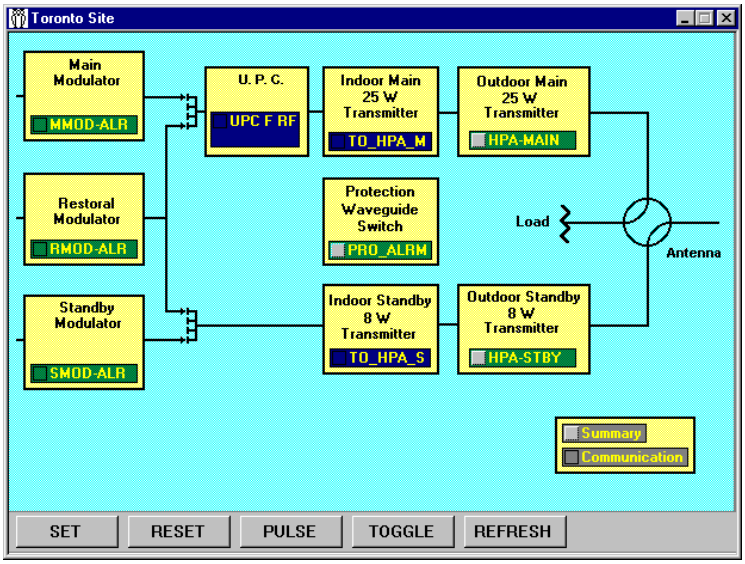
The system is highly modular, thus allowing for rapid and easy customization, according to the specific application requirements.

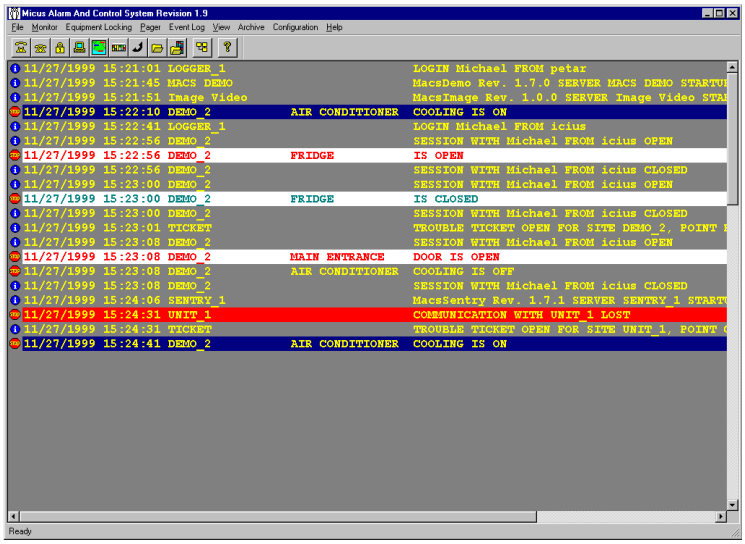
MACS' Key Features:

- Support for variety of equipment, connected to one or more computers, using either serial lines or network connections.
- Support for the de facto industry standard *Simple Network Management Protocol (SNMP)*.
- Simple, friendly and intuitive *Graphical User Interface (GUI)*.
- Monitor and control screens implemented as graphical images which can be added to the system by the end-user.
- Field-configurable status or alarm points allow end-users to define point name, text, severity, and color for each status or alarm point state.
- Field-configurable control points allow end-users to define point name, text, severity, and color for each control point state. Control points can be set, reset, pulsed or toggled from the user-defined control screens.
- For the equipment which supports commands from the terminal, the system provides command line mode of operation.
- The system always shows up to 100 most recent events in a scrollable window.
- All reported events are saved in the text files created on daily basis. The system provides means to view, search, copy and print the event log.
- Paging system automatically calls all personnel responsible for the equipment.
- Multi-user support allows operators on the network to access the system independently and simultaneously.
- Equipment locking prevents conflicting commands in the multi-user environment.
- Access over the LAN, dial-up and ISDN networking, using the TCP/IP protocol.









ALARM AND CONTROL POINTS

MACS defines any equipment in terms of units, slots and points. Points represent equipment parameters which can be controlled, or parameters which can be read to determine equipment status.

MACS supports several point types: digital inputs, digital outputs, analog inputs, analog outputs and summary points. Digital inputs have two states: active and inactive. Digital outputs can be active, inactive or pulsed. Analog inputs can be within limits, above upper threshold, or below lower threshold. Analog outputs can be set to any value within the range appropriate for the associated equipment parameter. Point name, text, color, and severity for each point state are defined by the end-user through the system configuration process.

STATUS AND ALARM PROCESSING

MACS detects status changes and alarm conditions in two ways: by passively monitoring the equipment, or by actively polling the equipment status. Unsolicited messages from the equipment or responses to the polls are then translated into the user-defined status and alarm messages.

Typically, the user interface runs on one or more workstations on the local or wide area network. Status messages and/or alarms received from the equipment are reported to all user interfaces. User interface provides extensive buffering capability, thus allowing operators to browse through several pages of the collected records.

In addition to the textual messages displayed in the scrollable window, changes in the equipment status and alarms are also shown in all graphical monitor and control windows. Each time a given point changes its status, the color of the point displayed in the window changes accordingly.

MONITOR AND CONTROL WINDOWS

To monitor and control the equipment, the users can create any number of monitor and control windows. Typically, these windows contain geographical maps, building layouts, equipment racks, equipment diagrams, equipment front panels, etc.

Each monitor and control window consists of two components: background graphical image and a list of status and control points. A background image can be created using any graphic editor, such as MS Windows PaintBrush. The list of points to display in the window is kept in the system configuration database. A single window may combine points from various pieces of equipment. While the status and alarm points only reflect equipment status, the control points have push-buttons which allow operators to set, reset, toggle or pulse the point.

In addition, the system provides means to configure and initialize various pieces of equipment, such as intelligent modems, satellite communications equipment, programmable logic controllers, etc. Depending on the equipment, configuration can be done using command line mode interface, or equipment specific configuration utilities.

EVENT LOG MANAGEMENT

Each event report received from the equipment is stored into a log file. This feature allows static analysis of the recorded alarm conditions. The system automatically creates and maintains log files on daily basis.

Since all event reports are stored into the files, the simplest way of analyzing events is to view log files. While viewing any given file, the operator can search for specific keywords or text strings, such as time stamps or equipment names. In addition, the operator can selectively print relevant sections of the file, or the entire file.

PAGER

Any status change or alarm may be configured to send a pager message. Based on the event being reported, MACS selects from the database a list of responsible personnel and sends pager messages to all individuals on the list.

FAX AND E-MAIL

Any status change or alarm may be configured to send a fax or e-mail. Based on the event being reported, MACS selects from the database a list of responsible personnel and sends fax and/or e-mail messages to all individuals on the list.

MULTIUSER SUPPORT

MACS is a multiuser system. Any number of users can monitor alarms, or perform various control and configuration tasks concurrently. Each instance of the user interface is a completely independent program which may run on any computer on the TCP/IP network.

Each operator can perform various tasks independently from any other user on the system. The only restriction is that two operators cannot access the same piece of equipment simultaneously. This feature protects the equipment from the conflicting requests issued by different operators.

NETWORKING AND REMOTE ACCESS

MACS provides full LAN and WAN support, as well as dial-in modem connections. The system may be configured to use any physical network topology as long as TCP/IP protocol is available for that network. Therefore, the system may run on token ring and ethernet networks, and across wide area networks, using bridges and routers. In addition, clients and servers may use Remote Access Service (RAS) and Point To Point Protocol (PPP), to communicate using TCP/IP over dial-up serial lines.

ON-LINE DIAGNOSTICS

All MACS programs have powerful built-in real time on-line diagnostics which can be used in the field to verify system configuration and to monitor operation of the external system interfaces.

On-line diagnostics can be access remotely by our customer support personnel, to assist operators in configuring and running the system.