ALERT

version 3.5 rev. 2

Alarm supervision ... Operator call ..Information transmission ... Intervention follow-up ...

supervises

an installation (industrial process, automation, etc.)

triggers calls

to the concerned operators when an alarm is detected

manages

alarm and call follow-up

Alert can be interfaced very easily with most industrial SCADA's, using DDE or OPC protocol, or through a dedicated interface module (mediator):

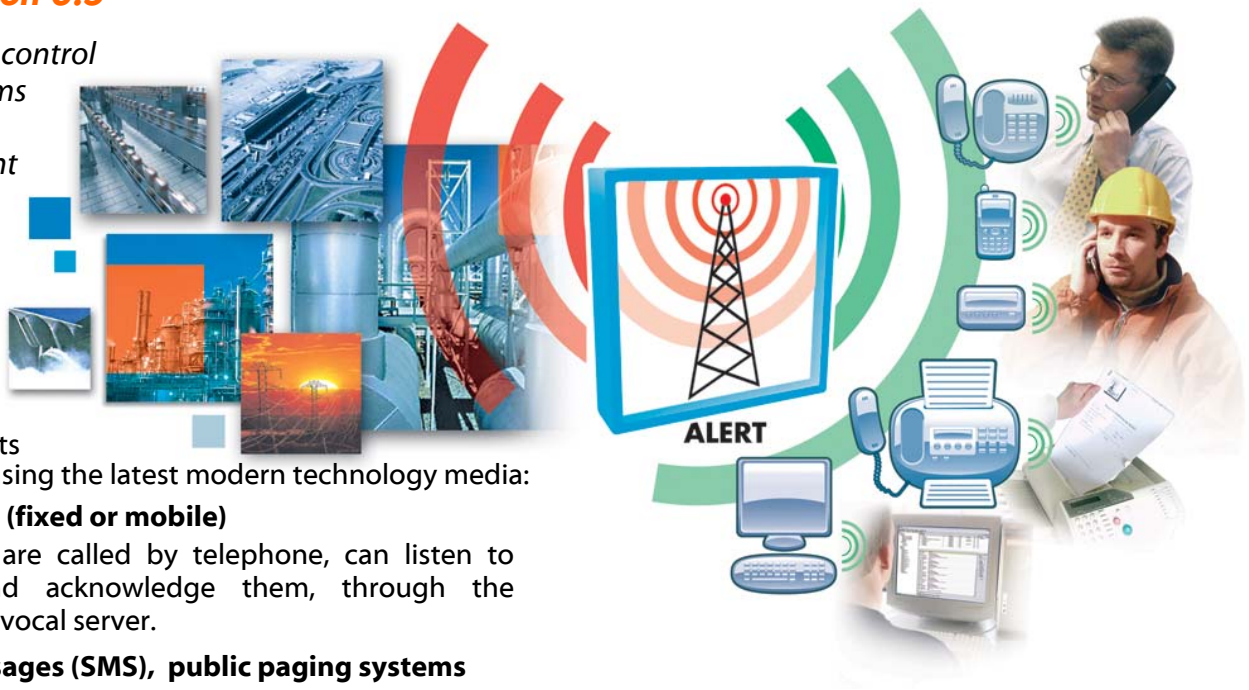
- Cimplicity
- Citect
- Factory Link
- Fix Dmacs
- Foxboro
- Induscreen
- IC 2000
- Intouch
- Monitor OCS
- Panorama
- PCVue
- RS View
- WinCC
- Wizcon
- ...

With its expansion module, the *Message Processor*, **Alert** can receive and process alarms that are transmitted under the form of messages, either through a serial or TCP/IP link, a file or a database, or issued from a GSM modem.

Alert can also directly supervise a PLC network through a communication server: Applicom SpWin, Applicom board, etc.

New version 3.5

The optimal control of your alarms and on-call management



Alert transmits information using the latest modern technology media:

√ **Telephone (fixed or mobile)**

Operators are called by telephone, can listen to alarms and acknowledge them, through the integrated vocal server.

√ **Short messages (SMS), public paging systems**

To alert operators working off site by the mean off their handy or pager.

√ **On-site paging systems**

To quickly alert maintenance operators working on site.

√ **Fax, tele-printer, email**

To receive written reports on detected alarms and their context.

√ **Internet browser, WAP mobile phone**

To consult and acknowledge alarms, to control schedule information, or to remotely supervise the application, through **Visual Access**, the supervision server that is associated with Alert.

Visual Access WAP module allows control of an automated installation from a WAP mobile phone.

Surveillance of applications and their environment

A very wide opening onto the supervised applications

Alert *proposes very varied acquisition interfaces which enable opening onto a wide range of applications and an important choice of methods enabling generation of alarms and triggering of call cycles.*

OPC interface

The client OPC interface (Data Access V2 + Alarms & Events) integrated in **Alert** allows the automatic acquisition of data, events and alarms generated by all OPC server applications, running on the same station or a network station.

This interface allows server variables to be visualized through the OPC browser then selectively imported.

An OPC server interface is also included which is able to deliver the status of the different variables of the software in real time (alarms, system information).

DDE interface

The supervision of variables can be performed automatically by DDE. The software also includes a DDE server Interface capable of processing commands like "command line".

Command Line Interface

The "Command Line" Interface allows creation, activation, deactivation or acknowledgment of alarms by the mean of a simple command line transmitted to the software (ex. ALERT SetAlarm Alarm 1). This interface also accepts other types of commands (call of groups or operators…).

Programming interface (API)

Alarms can be dynamically created, activated, deactivated and acknowledged by an external application through the **Alert Application Programming Interface (API)**. This interface proposes many functions to control the working of the software.

New generic functions give an access to almost all of configuration data of the software through command strings structured in accordance with the XML standard.

Dedicated interface (Mediator)

The surveillance of an application can be managed by a dedicated module (mediator module). This module allows optimal integration of the on-call management in the supervised application: import of alarms defined in the application with all their attributes (identifier, messages, priority, group), alarm detection, handling of reciprocal acknowledgments, masking/unmasking of alarms. **Alert** is provided with the **appropriate mediators for most standard supervisors.**

Message Processor

The Message Processor is a generic mediator module which can deal with messages transmitted by an external system, via a serial communication line or a TCP/IP data link, or through a file or a data base. It is also able to directly process short messages (SMS) issued from a GSM transmitter.

The Message Processor analyzes the received messages by using a Basic language script, extracts interesting information from it, then triggers alarms. Messages received on a serial link or a TCP/IP socket can be solicited (polling cycle) and acknowledged (by sending acknowledgment messages).

WEB Interface (AlertMessenger)

Calls of on-duty operators can be ordered from a WEB browser connected on the Intranet of the company. The call demands are written in a database by the WEB server, then recovered by **Alert** via the **AlertMessenger** script of the Message Processor. The transmission status of the calls are returned to the database and then can be displayed by the WEB server on the screen of the message sender.

Vocal interface

Through **Jericho** software and its build-in vocal server, it is possible to trigger alarms by telephone. **Jericho** receives calls of users, guide them to define the alarm to signal, can propose them to record a vocal message, then transmits the alarm to **Alert** which will take charge of calling the on-call operators and transmitting them the whole information (including the vocal message).

A strengthened security

Alert *controls the whole supervision disposal to ensure its optimal functioning.*

Environment surveillance

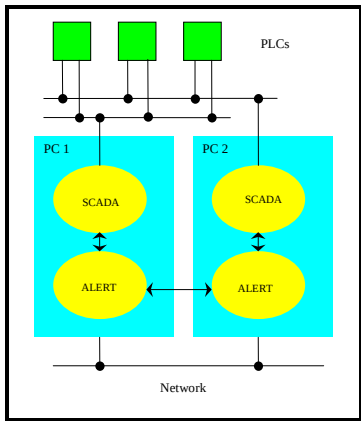
Alert can ensure the smooth running of the interface with the supervised application and trigger an alarm if the application crashes. Links can be automatically established when the supervised application is launched.

Alert also supervises the smooth running of call systems (modems or ISDN adapters) and can trigger an alarm when a failure appears with one of the systems.

Redundancy

Alert can be installed on two stations on a network. If the redundant mode is validated, each alert manager supervises its own local application, but only one is active at a given time and triggers calls on detection of an alarm. The two stations mutually supervise each other. If the active station is no longer capable of fulfilling its functions (PC or call systems are out of order), the other station automatically and immediately takes over without any information loss.

When a station is faulty, the other station automatically detects this state and activates an internal event of "redundancy failure". If this event is declared in the supervision list of Alert, a call cycle can be triggered to signal the failure of the other station.



Organization and management of the supervised data

List of supervised tags

All the data supervised by Alert are defined in its polling list.

An event condition can be associated with each tag of the polling list: equality, inequality, threshold firing, variation, etc… This condition can be validated or invalidated according to a weekly timetable.

An event can be specified as an alarm with a specified priority level. The activation of an alarm requires the intervention of an operator (acknowledgement). An alarm can be masked (temporarily or without limit, or by another alarm).

With each change of state of an event or alarm (activation, deactivation, acknowledgement), it can be associated additional information (alphanumeric, numeric and vocal message, text file) and a list of actions to carry out (call of groups or operators, execution of command, scripts or external application, vocal announcement). The alphanumeric message and the text file can include contextual data (current tag values). The vocal message can be automatically synthesized from a formatted alphanumeric message.

Stations and groups

The topographic description of supervised data organized as a tree structure of stations and groups allows a quick localization and identification of the sub-systems that are in alarm.

The supervised data can be distributed over several sites or stations. The organization in distinct stations allows a separated management of data and operators attached to different companies or sites.

A station can be either a virtual station founded on a segmentation of a unique database or a real station, equipped with Alert and capable of managing a local on-call organization in synchronization with a centralization station.

At the level of each station, the data can be organized as a tree structure of groups allowing the definition of various logical organization of data : geographical (buildings, towns, countries…), functional (electricity, air conditioning …), etc.

The constituted groups and stations can be used as filters when consulting the alarm table and alarm history and when acknowledging alarms.

Dealing with events and alarms

A whole range of actions to manage alarms

*On event or alarm activation , **Alert** triggers running of a list of associated actions (calls, commands, …). Actions can also be triggered on event rollback or alarm acknowledgement*

The following actions can be triggered:

Call of an on-duty group

The "Call group" action triggers the call of the operators of the active team of the designated on-call group: call of all the operators of the team who are not designated as "relief operators", call of relief operators in case of failure.

The called operators receive information associated with the event, under the format adapted to the used media.

The same alarm can trigger several group calls.

Operator call

The "message to user" action generates the call of the designated operator with the possibility to force the number that must be called. The called operator receives the information associated with the event under the format adapted to the used media.

Command execution

The "Command execution" action generates the execution of a writing sequence of external tags or outputs by OPC, DDE or through a communication driver.

Script execution

The "Script execution" action generates the execution of a designated script of the processor message.

Application execution

The "application execution" action generates the execution of the designated command line.

Vocal announce

The "vocal announce" action plays on the local station the vocal message associated with the alarm or explicitly designated.

Call and alarm acknowledgement

***Alert** controls call issuing and that operators have taken alarms into account*

Call acknowledgement

When an operator is alerted by the reception of a message, he must confirm that he has received the message. To do that, he can transmit a call acknowledgment within a given time, either by phoning back and identifying himself, or by sending a SMS. At the end of the waited time, the call is considered as failed and is reiterated to the same operator or a relief operator according to the configuration.

Alarm acknowledgement

The alarm acknowledgment means that the operator has effectively taken the alarm into account. This acknowledgment can be done either locally on the **Alert** station or remotely by telephone, with synchronization with the supervised **application**.

Operator management and team organization

User Management

Operator definition

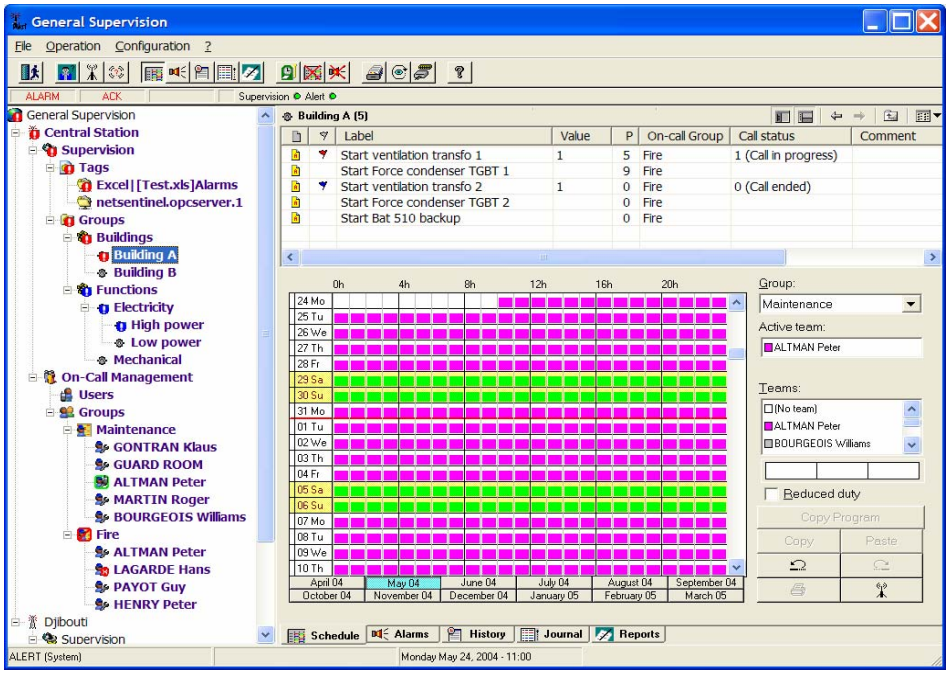
An operator is characterized by the following attributes: name, first name, access code, class (user profile) and a list of call numbers (telephone, SMS, pager, fax, email...). A weekly program for the automatic assignment of call numbers can be defined.

An operator can be defined as a virtual operator when the associated communication media is used by several operators (shared pager or cellular phone). When a virtual operator is called, any operator belonging to the same on-call group can acknowledge the call, allowing the operator who was really called to be identified.

User profiles

A specific work space can be defined for every category of operator, under the form of user profiles.

A user profile defines an environment (menu, toolbar, displayable screens) as well as a set of authorized commands (acknowledgment, configuration of on-call management, supervision and system parameters, etc.). By default, three basic profiles are defined (operation, control, system).



On-Call Management

Groups and teams

An on-call group designates all the operators who can intervene in order to deal with a specific category of alarms.

Each group consists of teams. Each team designates an operator or a list of operators to be called simultaneously or by rotation (depending on option), with possibility of relief operators in case of call failure.

An on-call group can be designated as relief for another group. This group will be called in place of the main group when there is nobody on call in the main group or in case of failure of the call cycle of the main group.

Schedules

Each on-call group has an associated schedule which defines the team assignment for a group over a year, by time units of 1, 1/2 or 1/4 h. The schedule is graphically configurable. A weekly program can be defined (with holiday management) for automatic assignment of teams in the schedule.

At any time, it is possible to depart from the schedule of an on-call group, temporarily or not. When a group is in derogation state, calls that concern this group are suspended or can be redirected to a derogation team.

Team changeover

An operator can explicitly perform a team changeover at the begin (clock in) and the end (clock out) of his on-call period.

An operating mode can make team changeover mandatory. If the team changeover is not done in a given time, an alarm can be triggered.

Manual and programmed calls

It is possible to "manually"" call one or more operators or the active team of an on-call group to transmit a service message.

Calls can also be programmed to automatically warn an operator at the begin or end of his on-call period, or to send him a message cyclically (every n minutes) or periodically (every days or a specific day of the week at a given time).

Journals / Histories / Statistics / Logbook

A complete traceability of alarms and interventions

***Alert** ensures a continuous control of your supervised applications. All the detected events as well as interventions triggered in reaction to these events are time stamped and recorded in **Alert**.*

Event log

Events concerning alert management are time stamped and recorded in an event log journal: operator login/logout, alarms, calls, failures, acknowledgments, derogation from the schedule, etc.

This journal can be printed in real time on a line printer.

Alarm table

The current alarms are displayed in the alarm table, with all the information which concern them (alarm and reset time, acknowledgement, etc.). Every alarm present in the table is associated with a record which contains the alarm description (parameters and current state), instructions and contextual information recorded at the alarm time, as well as the history of the operations performed by on-call operators (warned operators, call failures, acknowledgment, return to the normal state).

Alarm history

All alarms detected by **Alert** are recorded in an alarm history which indicates for each alarm, the alarm time, the name of the operator who has acknowledged it and the operator's reaction and intervention time.

Alarm statistics

Statistics concerning alarms can be displayed, for either an alarm, a group of alarms or all alarms, for a given period of one day, one week or one month: number of failures during the period, total duration and average duration of failure.

Statistics concerning interventions can be presented for each operator, for a given period of one day, one week or one month: number of interventions, average intervention duration, average reaction time.

Intervention statistics

Statistics concerning interventions can be presented for each operator, for a period of either one day, one week or one month: number of interventions, average intervention time, average reaction time.

Logbook

A logbook allows intervention reports from operators to be recorded. These reports can either be in writing (done locally or from a remote terminal) or oral (by telephone). They are automatically signed and time stamped. Files can be attached to these reports.

Exportation to an external database

In order to extend the statistic capabilities of the alarm log, the alarm history can be automatically exported to an external database. This external database can contain two tables: a table for the definition of the alarms to process and a table for recording of the alarm history. The update of the alarm definition table in the external database is automatically carried out after each modification in the **Alert** supervision list. The update of the history table in the database is done in real time each time an alarm event occurred (activation, reset, acknowledgement).

The external database also can contain a table for recording of the call requests, that can be used as interface between an Intranet server and the **AlertMessenger** script of the Message Processor for the transmission of the call requests to **Alert** and the returned reports.

Remote control and supervision tools

Integrated vocal server

***Alert** integrates a vocal server for consulting and acknowledging alarms by telephone*

Integrated vocal server

On connection, the vocal server welcomes the calling or called operator with a prerecorded welcome message and identifies him from the identifier code typed on the telephone keypad. The vocal server then proposes some functions: listening to the alarm and service messages, selective acknowledgment of the alarms (individually or by group), record of a vocal report, switching into data mode (terminal connection) or callback request (mandatory callback on option).

The identification of the operator results in the automatic acknowledgment of calls that have been addressed to him (current call or messages transmitted before by SMS or pager).

Voice synthesis option

With the voice synthesis option (Text To Speech), recording messages is not necessary. The welcome message and alarm messages can be automatically synthesized from alphanumeric messages. With this option, the functionalities of the vocal server also can be extended: customized welcome, announcement of alarm number, vocal time stamping of alarms, integration of dynamic values in the vocal alarm messages.
Alert is compatible with the Speech API interface of Windows.

Client/Server

***Alert** client/server interface allows remote management through the network or a modem connection.*

Alert can be proposed in server version for a limited or unlimited number of clients. This version allows **Alert** to be used from a remote station equipped with the **AlertClient** module or from any WEB browser, through a TCP/IP network or a modem connection (through a remote access).

AlertClient Module

The **AlertClient** software can be freely installed on one or more stations of the network. It gives access to most of the functionalities of **Alert** server station, for operation (on-call schedule, alarm table, histories and statistics, event log, logbook) and configuration (operators, on-call groups and teams, polling list).

The client station can be connected on each of the redundant station.

AlertWEB module

With the **AlertWEB** module installed on the server station (technology ASP .NET), **Alert** can be used via Intranet or Internet from a simple WEB browser. This module gives access to the main operating functions of the software: consultation and acknowledgement of alarms, consultation and modification of on-call schedules , modification of call numbers, event log, report edition…

WAP/WEB server

Alert can be used with **Visual Access** to offer a remote alarm control interface from a WEB browser or a WAP phone. The same modem can be shared by the both applications.

The screen editor of **Visual Access** allows the definition of synoptic visualization screens and command screens for the variables of the supervised application, in accordance with the capabilities of each of the terminals (WEB, WAP).

Remote control access

Alert is able to manage a remote control application (pcAnyWhere or Carbon Copy), by automatically launching this application on calling operator request, after having released the used communication port (share of the modem between **Alert** and the remote control application) and by closing this application at the end of the session. During all the session, **Alert** can override the remote control application, in case of alarm, to trigger calls.

Distributed by :

Alert operates under Windows environments 98, NT, 2000, XP, and 2003 server.
Its user interface is available in English, French, German, Spanish, Italian, and Dutch, and can be dynamically switched.

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