

Alarm Notification Software
or
Automatic Paging, E-Mail, SMS, Mobile App, and Telephone
Alarm Notification System

For Windows XP, Server 2003, 7, Server 2008, 2008 R2

(Note: For Brief specifications use only the bold items)

A. General Features

The Automatic Dialing and Voice Annunciation Alarm Management System shall consist of a true 32 bit or 64 bit Microsoft Windows based software, which shall be compatible with Windows XP, Server 2003, 7, and Server 2008. The Alarm Management System shall be capable of bi-directional communication with other 32 bit or 64 bit Application Software Packages. Software and hardware must be capable of accomplishing the following tasks:

1) Upon Alarm condition: facilitate the display of alarm information to the screen of a Windows based computer system. Must additionally be able to display alarm information to the screen while other Windows based application software is running. Examples: Proficy iFIX, Wonderware InTouch, Rockwell Software, Kepware, etc.

2) Upon Alarm condition: facilitate the compilation and printing of alarm information to local & networked printers.

3) Upon Alarm condition: facilitate the compilation and transmission of alarm information to commercially available alphanumeric pager systems.

4) Upon Alarm condition: facilitate the compilation and transmission of alarm information to general E-Mail and Internet software which can use commercially available wireless cellular messaging systems.

5) Upon Alarm condition: facilitate the compilation and transmission of alarm information to commercially available numeric pager systems.

6) Upon Alarm condition: facilitate the compilation and transmission of alarm information to commercially available voice pagers.

7) Upon Alarm condition: facilitate the compilation and transmission of alarm information over wireless cellular network, provide for text based messaging of alarm information and allow for the password secured remote acknowledgment of such alarms.

8) Upon Alarm condition: facilitate the compilation and transmission of alarm information over standard telephone lines to residential or commercial sites, or cellular phones, provide for verbalization of alarm information and allow for the password secured remote acknowledgment of such alarms.

9) Upon Alarm condition: facilitate the compilation and transmission of alarm information to provide text based messaging on a mobile device configured with a Mobile-911 Smartphone App via cellular mobile data service and allow for the password secured remote acknowledgment of such alarms.

10) Allows for Voice Dial-in Connection via telephone line to facilitate the Acknowledgment of active alarms.

11) Allows for Voice Dial-in Connection via telephone line to facilitate the inquiry of and the alteration of values of digital or analog tags.

12) Allows for the Mobile Data Connection via a commercially available mobile data service provider to facilitate the inquiry of tag values and alarm events.

13) Both Voice Dial-in and Voice Dial-out access modes shall be protected by mandatory redundant password entry system.

14) The software must allow for the following features:

- **Keyless Licensing**
- **Automatic configuration by a browser type import utility for Wonderware InTouch, Proficy iFIX and Rockwell Software databases, or any OPC server that supports data browsing**
- **Text-to-Speech engine automatically creates voice files to be generated for local audio and telephone applications**
- **Direct Database Connections to Wonderware InTouch, Archestra, Proficy iFIX, RSView32 and FactoryTalk ViewSE SCADA, FactoryTalk A&EServers, FactoryTalk ME packages or generic OPC or DDE connections to other Windows software applications**
- **Direct Serial Link to In-House Paging Systems**
- **System Health "Heartbeats" to the SCADA package to assure working connections to the pager service bureau, telephone voice card, and total runtime system**
- **Viewing alarm history with the capability to sort, group, analyze, and print activity between user defined dates and times.**
- **Ability to add notes to any alarm record to record unusual events, circumstances, miscellaneous information, or corrective activities.**
- **The ability to be used in Hot Backup or Redundant SCADA applications. The SCADA software can put the automatic dialing software in "Standby" or "Active" mode with the use of "Scripting controls".**
- **Connect to Mobile-911 Server which in turn connects to commercially provided mobile data servers for the facilitation of alarm event and data messaging to supported mobile devices (iPhone, Android, and Blackberry) that have been configured with a Mobile-911 App.**

15) Allow for the creation of "Watchdog Alarms". A Watchdog Alarm is a special monitoring function, which makes it possible to test the connection and functionality of the communication link to device drivers. Detection includes faulty or cut cabling to the device as well as loss of the connection. Upon the activation of any Watchdog Alarm, facilitate the compilation and transmission of an alarm to any valid output media identical to either analog or digital alarms.

B. Software

Shall be 32 bit or 64 bit Microsoft Windows XP / Server 2003 / 7 / Server2008 based in both configuration and execution modes. The installation process shall occur in the Windows environment and automatically install all required software onto the destination computer and create all necessary Windows groups, icons and all necessary drivers and DLLs.

Mobile-911 Server requires Microsoft .NET 4.0 and may require Internet Information Services if installing MobileView. Mobile911 Server is not required to be installed on the same machine as WIN-911. Mobile-911 Server may also require an Internet connection

1) Configuration Software

a) Shall allow for the configuration of unique alphanumeric for both pager and e-mail transmission formats.

b) Shall be configurable to be compatible with 110, 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 or 128000 BAUD Paging Systems and shall adhere to the TAP protocol standard. It shall be configurable to be compatible with most major brands of data modems by allowing individual configuration of baud rate, modem initialization string, dialing prefix, dialing suffix and modem hang-up strings and accommodate paging systems requiring "passwords".

c) Shall allow for the configuration of E-Mail SMTP Account Information and POP3 Server Name, SMTP and POP3 Ports, User Login Name and Password.

d) Shall allow for the configuration and use of unique, end-user customizable, verbalized alarm transmission formats. Verbalization data files shall originate as standard Microsoft Windows non-compressed .WAV file format. (May be recorded through Microsoft Windows Text-to-Speech Engine or Sound Recorder). To conserve hard disk storage space, actual voice output verbalizations shall be a construct of phrases, words, or sound effect files stored as separate .WAV files. The software will build a sentence from these separate files.

e) Shall allow for the configuration and maintenance of a set of "global" voice data files used in the construction of voice output messages.

f) Shall allow for the creation and maintenance of a "phone book" of destinations for alarm transmissions. The phone book shall be independently configurable and shall maintain day of the week, time of the day and type of transmission eligibility for each phone book entrant. The quantity of eligibility entries in the phone book shall be unlimited. Schedules can be customized and can accommodate non 7 day work duty cycles such as "6 days on, 4 days off".

g) Shall be able to operate as an OPC Client for any OPC Server that supports Data Access Version 1.0, 2.0 & 3.0.

h) Shall also be able to establish and maintain Microsoft Windows DDE (Dynamic Data Exchange) links to multiple Windows applications or Direct Connections (non-DDE) to Wonderware InTouch, Arcestra, Proficy iFIX, RSVIEW32 and FactoryTalk View SE SCADA systems.

i) Shall provide for the creation of "Groups" consisting of selected entries from the Phone Book. A "Group" may be considered to be a logical grouping of alarms, based upon the type of transmission desired as a result of any alarm condition. Group configuration shall allow for:

- The selection of recipient list for alarm transmissions along with recipient priority determination.**
- The creation of user configurable delays prior to commencement of alarm transmissions.**

- **The user selection of "single pass" or "continuous loop" modes through recipient list until alarms are acknowledged.**
- **The user enable/disable of: printer output, data logging to disk file.**
- **The selection of Pop Up controls for alarms to "Pop up" over the current application allowing for immediate visualization or mandatory user acknowledgment of alarms.**

j) Shall provide for Digital Alarm handling and allow a textual description field and voice verbalization files for each Digital Alarm. Standard alarm acknowledgments require personal involvement. Each alarm can be selected to "acknowledge upon return to normal state", or allow for automatic acknowledgment of any alarm generated. For DDE applications, Digital Alarms may be determined by "bit picking" from 32 bit words (words up to 32 bits in length).

k) Shall provide for Analog Alarm handling of either Integer or Floating Point data formats, and allow for a textual description field and voice verbalization files for each Digital Alarm. Standard alarm acknowledgments require personal involvement. Each alarm can be selected to "acknowledge upon return to normal state", or allow for automatic acknowledgment of any alarm generated. DDE applications shall be selectively capable of scaling analog values in linear or square root modes. Shall also allow for configuration of (2) high and (2) low alarm condition set points, labeled: High, High-High, Low and Low-Low. Each set-point shall be configurable with its own unique trip point value. Shall be capable of dead band handling with user configurable dead band value selection to eliminate alarm "chatter".

l) Shall allow for the creation and maintenance of "voice reports" or organized collections of tags. Such reports may be Voice accessed via telephone line employing a mandatory password protection system. The report feature shall make it possible to inquire and receive a verbalization of the description of the tag requested, along with the current value. It shall also be possible to alter any analog or digital value through a verbalized verification process. This alteration process calls for the pre-configuration of the tag, making it available for inquiry and/or change. A triple redundant password protection scheme must be satisfied in order to change values.

m) Shall allow for the creation and maintenance of "SMS reports" or organized collections of tags. Such reports may be SMS accessed via cellular modem employing a mandatory password protection system. The report feature shall make it possible to inquire and receive a text based description of the tag requested, along with the current value.

n) Shall allow for the creation and maintenance of "Mobile-911 reports" or organized collections of tags. Such reports may be accessed via supported smart phone device (i. e. iPhone, Android, or Blackberry) employing a mandatory configured and password protected Mobile-911 App. The report feature shall make it possible to inquire and receive a text based description of the tag requested, along with the current value.

2) Execution Software

a) Shall be capable of displaying on screen, current alarm status and alarm history status of DDE, OPC or Direct Connected alarm tags, selecting and executing the dial-out action required, and allow for acknowledgement from either the SCADA Alarm Database Display, the Alarm Notification Monitor, or by telephone & SMS.

b) Shall allow for manual transmission of user entered alphanumeric or numeric pages by selection of destination from the phone book and message entry.

c) Shall allow for manual transmission of user entered email messages by selection of destination from the contact list and message entry.

d) Shall allow for manual transmission of user entered SMS messages by selection of destination from the contact list and message entry.

e) Shall allow for "On-Line" changes to "Bypass Alarms" or remove an alarm during maintenance downtime thus eliminating nuisance dial-outs.

f) Shall allow for "On-Line" changes to "Override" a user's duty schedule to accommodate sick days and unscheduled vacation days.

g) Shall be capable of maintaining a group by group activity log which may capture: Any alarms that may occur (along with user configurable time and date stamp), any return to normal transactions, any alphanumeric or numeric pages, any inbound and outbound SMS messages, any voice dial-outs, any voice dial-ins (including who has accessed the system and who has acknowledged alarms), any Mobile-911 out-bound alarm and report messages as well as inbound alarm, acknowledgement, and report requests (including who has accessed the system and who has acknowledged alarms), any self-acknowledging alarms, or acknowledgements from other software applications. All error messages must also be managed.

h) Shall be capable of managing the log file at any time. User entered notes may be added to any alarm record. Functionality shall also include viewing, sorting, and printing the log file.

i) Shall have the ability to be used in Hot Backup or Redundant SCADA applications. The SCADA software can put the automatic dialing software in "Standby" or "Active" mode with the use of "Scripting controls".

J) Shall be capable of receiving and facilitating inbound and outbound Mobile-911 alarm and report message tasking from WIN-911 or supported mobile devices (iPhone, Android, or Blackberry) configured with the Mobile-911 app.

C. Data Modem

1) A data modem shall be used for transmissions of Numeric or Alphanumeric Pager messages. It is recommended that the modem should be capable, at minimum, of communications at 300, 1200 and 2400 BAUD and should handle both the Bell 212A and v.22 communications standards. Data Modem may be internal or external to computer system.

D. Telephonic Voice Card

1) The Telephonic Voice Modem/Card shall be suitable for Microsoft 2000/XP/2003 applications capable of performing outbound dialing initiated by alarms and shall accept incoming calls for query, acknowledgment of alarms and access to reports. The Telephonic Modem/Card driver and software shall be capable of detecting when a phone has been answered, and can also detect and decode touch-tone telephone "tones". External phone line connection to Telephonic Voice Modem/Card is a standard RJ11 jack. The Telephonic Voice Modem/Card must have the capability to be installed, and approved in all the major countries in the world. The voice files

played by the Telephonic Voice Modem/Card are standard Microsoft .WAV file formats.

2) Note: The software shall support both Dialogic computer telephony cards with support for multiple incoming lines, or most “voice capable” TAPI modems for single line applications.

3) The software must include provisions for testing The Telephonic Voice Modem/Card for compatibility with Alarm Notification telephony drivers.

E. Cellular Modem

1) The Cellular Modem shall be suitable for Microsoft 2000/XP/2003 applications capable of performing outbound SMS text messages initiated by alarms and shall accept incoming SMS text messages for query, acknowledgment of alarms and access to reports.

2) Note: The software shall support both GSM and CDMA cellular modems. GSM cellular modems support all carriers on the GSM network (i.e. AT&T, T-Mobile, etc.). CDMA cellular modems support carriers on the CDMA network (i.e. Verizon, Sprint, Nextel, etc.)

F. Model Number (or equal):

1) For Alarm Dial-out to Telephones, pagers, text messaging and e-mail with remote acknowledgment capability, specify: WIN-911/PRO or equal.