

Advanced Alarm Notification Software for Automatic E-Mail, SMS, Mobile App, and Telephone

A. General Features

The System shall consist of Microsoft Windows based software capable of accomplishing the following tasks:

- 1) Upon alarm events: facilitate the display, sorting, and filtering (e.g. by date and time range) of alarm information to the screen of a Windows based computer system.**
- 2) Upon alarm events: facilitate the compilation and transmission of alarm information via SMTP as HTML or plain text email (POP3/IMAP inbound). TLS/SSL is supported.**
- 3) Upon alarm events: facilitate the compilation and transmission of alarm information to mobile devices as SMS via SMTP (carrier gateway required).**
- 4) Upon alarm events: facilitate the compilation and transmission of alarm information to mobile devices as SMS/EMS/MMS (CDMA/GSM/HSPA/LTE cellular modem required).**
- 5) Upon alarm events: facilitate the compilation and transmission of alarm information over POTS (TAPI Voice Modem required) and VOIP (SIP Server required) lines to residential or commercial sites or mobile phones.**
- 6) Upon alarm events: facilitate the compilation and transmission of alarm information via IP to mobile and tablet devices companion App.**
- 7) Following notification: provides for acknowledgement of alarms over all above communication modalities, secured with password/numeric code authentication. Such acknowledgements shall pass identifying information regarding the actor to the SCADA where possible, including the actor's ack comments where possible.**
- 8) Allows for unsolicited Alarm Requests over all above communication modalities.**
- 9) Allows for unsolicited Report (current process variable values and alarm states) Requests over all above communication modalities.**
- 10) The notification software allows for software licensing**
- 11) The notification software communicates natively with Wonderware InTouch, Wonderware System Platform, GE iFIX, GE CIMPLICITY, and Rockwell Automation FactoryTalk View A&E Servers or in a generic manner via OPC DA Classic 2.0 to other applications.**

- 12) **The notification software supports filter-based subscriptions to alarms from Wonderware InTouch, Wonderware System Platform, GE iFIX, GE CIMPLICITY, and Rockwell Automation FactoryTalk View A&E, eliminating the need for tag imports and resulting maintenance of redundant configuration.**
- 13) **The notification software may be used in Hot Backup or Redundant SCADA applications. The SCADA software can put the notification software in "Standby" or "Active" mode through script.**
- 14) **The notification software supports the creation of "Watchdog Alarms" for monitoring the status of SCADA/HMI connectivity.**
- 15) **The notification software shall support connection schedules, including schedules with arbitrary recurrence e.g. "6 days on, 4 days off".**
- 16) **The notification software shall allow for monitored alarmable objects to be grouped, including non-hierarchical groupings.**
- 17) **The notification software shall associate each monitored alarmable object with a notification strategy allowing for:**
 - **The notification of individual connections**
 - **The pushing of reports (process variable values and alarm states) to individual connections**
 - **The notification of dynamically composed sets of connections**
 - **The pushing of reports to dynamically composed sets of connections**
 - **The automatic acknowledgement of alarms**
 - **Arbitrary delays for escalation.**
- 18) **The notification software shall allow the actions of a notification strategy to be executed a configurable number of times and/or with a configurable frequency. Further, such actions shall also support conditional execution based on the state of the alarm, priority of the alarm event, and/or date/time of occurrence of the event (e.g. for adapting to scheduled maintenance).**
- 19) **The notification software shall allow for the assignment of a "Do Not Notify" strategy during maintenance downtime thus eliminating unnecessary or undesired notification attempts.**
- 20) **The notification software shall log alarm state changes and strategy actions, including notification attempts, notification results, acknowledgement attempts, and acknowledgement results.**
- 21) **The notification software shall provide a browser based configuration utility accessible across the network and supporting multiple languages and cultures including Chinese, English, French, German, Hebrew, Italian, and Spanish.**
- 22) **Telephony shall support Text To Speech for supported languages and cultures.**