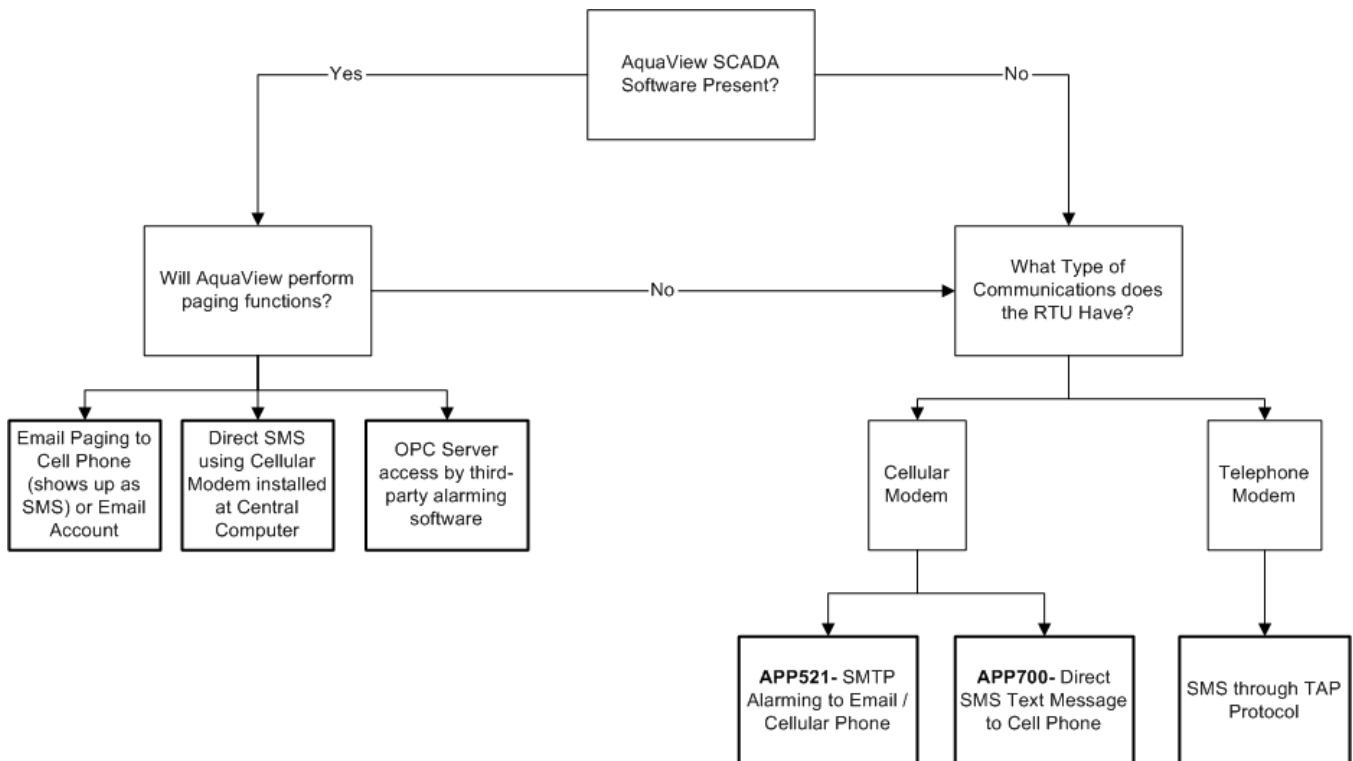# Flygt Monitoring & Controls Alarm Distribution

This document is intended to provide a comprehensive summary of hardware and software requirements for alarm distribution when using Flygt RTUs and software, including APP521, APP700 series, and AquaView SCADA software.

It is not possible to select multiple types of alarm distribution between AquaView and the RTU, as both systems will compete to distribute the alarm resulting in duplicated alarms or situations in which no operator is notified. Because of this it is recommended that you follow the guide below to identify what type of communication system will be installed and what level of alarming and access is required.

Step 1: Decide whether AquaView will perform alarming functions, or if this will be controlled by the RTU

If you are not installing AquaView this is an easy decision. If AquaView will be installed and communicating with the system determine whether it will be for Monitoring and Control purposes only, or if AquaView will handle paging alarms to operators.

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Step 2A: AquaView will handle Paging functions

If you have decided to have AquaView handle alarm distribution functions, you must now decide what type of alarm distribution you would like. An explanation of each option, and the hardware/software required for each, follows:

Email Paging to Cell Phone / Email Account- AquaView has the capability to connect to an SMTP server and send an email to the recipient(s) of your choice. AquaView does not contain an SMTP server and cannot send email all by itself; this will require that the customer provide an SMTP server address, user name, password and port number to connect to. This is typically handled by the customer's IT group that handles normal email functions. If the customer does not have an email SMTP server, software such as Postcast Server can be installed which will act as an SMTP server for use by AquaView.

If emailing to a standard email address, ensure that it exists before attempting to email to it. If sending an email to a cellular phone (this will show up as an SMS on the recipient's end) ensure that text messaging is enabled for the recipient(s). You will use the following as the email address to the cell phone (replace **phonenumber** with the 10-digit cell phone number of the recipient)

T-Mobile: phonenumber@tmomail.net
Virgin Mobile: phonenumber@vmobl.com
Cingular: phonenumber@cingularme.com
Sprint: phonenumber@messaging.sprintpcs.com
AT&T: phonenumber@txt.att.net
Verizon: phonenumber@vtext.com
Nextel: phonenumber@messaging.nextel.com

Refer to the latest version of the "*AquaView User Manual*" for additional instructions on configuring email notification to users, paging groups and rostering, as well as where to configure the SMTP server information.
Alarm acknowledgment can be done using an analog phone line (with Caller ID capabilities) connected to a modem AquaView is monitoring- program the caller ID numbers of the dialed users into the alarm notification fields. When an alarm is paged out, users can call the telephone number to the station- if a valid caller ID match is made the alarm will be acknowledged with no subsequent callouts for the paged alarm.

Direct SMS using Cellular Modem- If a GSM cellular modem is connected to a COM port on the AquaView server, AquaView can use it to directly send text messages (SMS) to a user's cell phone. Refer to the latest version of the "*AquaView User Manual*" for additional instructions on configuring email notification to users, paging groups and rostering, as well as where to configure the SMTP server information.

OPC Server Access using Third Party Software- AquaView has the capability to enable a built-in OPC server, which can be accessed by third party software such as Win911 for alarm distribution. This

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requires no paging or rostering on the AquaView end; once an alarm is received by AquaView using a WCA Alarm Poll it will update the affected OPC Alarm Tags automatically.

Step 2B: APP Controller will handle Paging functions

If you decide to have the APP Controller handle the alarm distribution functions, the AquaView Central will have no alarm collection responsibilities besides collection for historical alarm activity in addition to the normal trends and report collection. The following is a list of alarm capabilities by communication type and controller:

Cellular Modem (Airlink Raven model or Flygt Approved Equal)

- **APP700 Series-** The APP700 Series of controllers can perform a direct SMS to a customer's cell phone using standard AT commands for SMS messaging and is done automatically by the controller when an alarm is sensed. Setup is limited to one recipient and there is no option to acknowledge the alarm in the controller (it will send **only one** text message to the recipient per alarm and then auto-acknowledge the alarm- this is because there is no way to "dial-up" the station using IP to IP communication)

  COMMUNICATION SETUP

  Station ID: Station Name that will be sent in the alarm message.
  ID (fixed): Match this to Station ID
  Communic. COM1: RS232 Full Duplex
  Speed COM1: 57600
  Protocol COM1: Aquacom
  RTS Delay COM1: 200 ms

  ALARM SETUP
  Telno. 1 CS/PAGE: &XXXYYYZZZZ (10-digit Telephone number to receive SMS)

  PAGING SETUP
  Pager Ack. Time: 0
  Paging System: GSM-SMS

- **APP521**- The APP521 will use the email-sending capabilities of the approved modem in order to connect to an SMTP server and send an email to a recipient of your choice. The APP521 does not contain an embedded SMTP server and cannot send email all by itself; this will require that the customer provide an SMTP server address, user name, password and port number to connect to. This is typically handled by the customer's IT group that handles normal email functions. If the customer does not have an email SMTP server, software such as Postcast Server can be installed which will act as an SMTP server for use by the APP521 controllers.

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If emailing to a standard email address, ensure that it exists before attempting to email to it. If sending an email to a cellular phone (this will show up as an SMS on the recipient's end) ensure that text messaging is enabled for the recipient(s). You will use the following as the email address to the cell phone (replace phonenumber with the 10-digit cell phone number of the recipient)

T-Mobile: phonenumber@tmomail.net
Virgin Mobile: phonenumber@vmobl.com
Cingular: phonenumber@cingularme.com
Sprint: phonenumber@messaging.sprintpcs.com
AT&T: phonenumber@txt.att.net
Verizon: phonenumber@vtext.com
Nextel: phonenumber@messaging.nextel.com
US Cellular: phonenumber@email.uscc.net

Setup is limited to one recipient and there is no option to acknowledge the alarm in the controller (it will send **only one** text message to the recipient per alarm and then auto-acknowledge the alarm- this is because there is no way to "dial-up" the station using IP to IP communication)

Communication COM1 (9_2) Choose "GSM / Hayes Predef"
Speed COM1 (9_5) Match to modem speed
Parity COM1 (9_6) Match to modem parity
Protocol COM1 (9_7) Choose "AquaCom dialled"
RTS Delay COM1 (9_9) Enter "200 ms"

Paging system (11_1) SMS via SMTP
Station name (11_2) Name that will be sent in the SMS alarm message.
P-alarm (11_3) Choose if you want a notification on Alarm going passive.
SMTP address (11_5) SMTP server to send emails with. XXX.XXX.XXX.XXX format.
SMTP user part 1 (11_6) Username Authentication for SMTP server. If longer than 20 characters, enter the first piece in the SMTP user part 1 menu, and the second piece in the SMTP user part 2 menu).
SMTP user part 2 (11_7)
SMTP password (11_8) Password for SMTP Authentication
SMTP from (11_9) From-Address in Email to user
SMTP subject (11_10) Subject Line content in Email to user
SMTP send user part1 (11_11) Email address to send email to. If longer than 16 characters, enter the first part in the SMTP send user part 1 menu, and the second piece in the SMTP send user part 2 menu.
SMTP send user part2 (11_12)

Telephone Modem (Westermo TDW-33, Phoenix Contact *PSI-DATA/BASIC-MODEM/RS232 or Flygt Approved Equal)*

For TAP Protocol to function, the cellular carrier must have support for this service through dedicated TAP service center numbers. Additionally, the cell phone must be provisioned properly for SMS messaging through their carrier. The following list details carriers which support TAP Protocol and those that have been confirmed as non-supportive; if your carrier is not on the list please check with the Flygt M&C Engineering Department to determine if your carrier supports TAP.

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When the message is received on the operator's cell phone, it will be in the following format:

Code no: 11
Tripped Motor P1
Liftstation 47
Pri:BA
8:58A 05/30

The Code no. is the programmed alarm code in the Flygt controller and Aquaview. The next line has the alarm description. The third line has the station name. The next line has the priority and status; B indicates a priority B alarm and A indicates active status. The alarm priority will be whatever the status is set to in the controller (A,B,C,P) and the status can be A for active or P for Passive (condition has cleared). The last line contains the time and date of the alarm.

The alarm can be acknowledged by dialing the telephone number of the APP unit- the APP will instruct the modem to pick up the line and after a few seconds, acknowledge the alarm and hang up the line.

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SUPPORTED CARRIERS

Carrier	Notes	Service Center (SMSC) Number
Cingular	Only through Enterprise Paging- addtl. $9.99 / mo- Contact Cingular Wireless	18009094602
Nextel	As of January 1st, 2009 Nextel has disabled the toll-free number for TAP Usage	12063966683
Verizon Wireless	-	18668230501
AT&T Wireless	Only through Enterprise Paging- addtl. $9.99 / mo- Contact AT&T Wireless	18668837243
Sprint	-	18886561727
Alltel	-	18776543243

UNSUPPORTED CARRIERS

T-Mobile- T-Mobile only provides TAP messaging service to customers with Enterprise Business accounts with 50+ active lines.

APP700 SETTINGS- The following settings are needed to enable and configure TAP Alarming:

COMMUNICATION SETUP
Communication COM1: TD33 V.90 or User Defined 0
Speed COM1: 9600 bit/s
Protocol on COM1: AquaCom

ALARM SETUP
Telno. 1 CS/PAGE: &XXXYYYZZZZ (This is the cell number you will be paging)

PAGING SETUP
Station Name: Station Name that will be sent in the alarm message.
Pager Ack. Time: 0 if no acknowledgement, otherwise enter time allowed for acknowledgement
Paging System: TAP D1 SMS
Telno. PAD/SMSC: Pick the Number for your provider from the above table.
Identity Code: Cingular, Alltel, Nextel, and AT&T Wireless use **000000**; all others use the 10 digit cell number for the customer you are calling

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APP521 SETTINGS- The following settings are needed to enable and configure TAP Alarming:

Telno. 1 CS/PAGE (10_15) Telephone number to TAP paging provider. Pick the Number for your provider from the above table.

Paging system (11_1) Choose "TAP"

Station name (11_2) Station Name that will be sent in the alarm message.

P-alarm (11_3) Choose if you want a notification on Alarm going passive.

TAP password (11_13) Cingular, Alltel, Nextel, and AT&T Wireless use **000000**; all others use the 10 digit cell number for the customer you are calling

TAP pager number (11_14) 10-digit cell number you will be paging