Orange County Fire Authority
Fire Prevention Division
INFORMATIONAL BULLETIN 01-11

Subject: Fire Alarm Systems Using Wireless or Other Technology as a Single Path of Communication or in a Mesh Network

Besides the common DACT, which traditionally utilizes two hard-wired phone lines for signal transmission, NFPA 72 permits the use of other technology for communication between alarm panels and central station facilities and in some cases allows a single path of communication instead of a dual phone line configuration.

Prior to submittal of plans for the installation of single-path technology components at protected premises, a review of the proposed single path technology will be required. Once it has been demonstrated that the technology provides a level of reliability and supervision at least as good at that described in NFPA 72 for established technologies, a letter will be issued from the OCFA indicating approval. The applicant shall include the letter on the plans for each project utilizing that particular type of technology to facilitate review.

The following, at a minimum, shall be required for consideration as part of the pre-submittal review:

- List the type of data transmission technologies used (e.g., cellular GSM/GPRS network, 2-way radio, mesh network, etc.) and clearly identify each step in how alarm information travels from the protected premises to the central station and back. Identify which portions of the system are proprietary, leased, or part of an established public or major private telephone, cable, or internet service company. Discuss potential deficiencies or weak links in the system and how the technology safeguards against these. NFPA 72 Section 26.6.1, 26.6.3.1.16, 26.6.3.1.3

- Identify the method of ensuring signal and data integrity. Specify method 1 (repetition), 2 (parity), or 3 (other). If 3, describe in detail the means of ensuring data integrity and also the level of accuracy expressed as a percentage of certainty that the received message is identical to the transmitted message. Section 26.6.3.1.13.1, 26.6.3.1.13.2, 23.6.3.1.4

- Provide UL/FM and CSFM listing sheets showing that the communicator is approved for use as a single communication path for fire applications. Section 26.6.3.1.1

- Data throttling or other prioritization features of the communicator shall not inhibit transmission of any signals from the alarm system beyond the maximum delay of 90 seconds permitted by 26.6.3.1.10. If the system has this feature, either 1) provide documentation from the manufacturer stating that this feature can be disabled, or 2) provide documentation from the manufacturer showing that the maximum possible delay for any type of signal is less than that permitted by NFPA 72.

- If the central station will be employing new technology or equipment beyond the scope of its current certificate, provide a new UL certificate showing that it is listed for the new technology.

- If the system utilizes radio repeater or receiving stations, provide documentation demonstrating compliance with the applicable requirements of 26.6.3.3.

- Demonstrate the following per sections 26.6.3.1.5, 26.6.3.1.6, and 26.6.3.1.12:
  - Any failure of a communication path shall be annunciated at the central station within 60 minutes for single path communications or 360 minutes for technologies with multiple transmission paths.
  - Failure to complete a signal transmission shall be annunciated at the protected premises within 200 seconds.
  - The record and display rate of subsequent alarms will not be less than one every 10 seconds.

- State how each of the performance requirements will be tested and compliance demonstrated to the OCFA inspector (e.g., How will signal strength be verified? How will data integrity be measured? Etc.). This testing information will also be required to be included on all plans utilizing this technology.

Presubmittal review of new technologies shall be done under fee code PR905. Improvements limited to conversion of existing DACT communicators shall be reviewed under PR500. All other plans will be reviewed under PR500, PR510, or PR520 depending on the number of initiating and notification appliances involved.

Released 6-17-11, Revised 10-21-13, 1-25-14