

NFPA 72, NATIONAL FIRE ALARM SIGNALING CODE

**Chapter 26 Updates – What do you need to know about
MFVNs?**

Presented to OSFM – CA Fire Alarm Code Advisory Committee

What is a Managed Facilities-Based Voice Network (MFVN)?

- For background, a DACT is permitted to transmit fire alarm signals if connected to a qualifying Managed Facilities-Based Voice Network (MFVN). Legacy copper POTS lines are MFVNs. Any alternative technology that meets the definition of MFVN and the criteria in Annex A is also an MFVN that's allowed to transmit fire alarm signals. The code treats any qualifying MFVN—whether a legacy copper POTS line or an alternative technology that meets the MFVN definition and criteria—the same.
- The updated MFVN definition and new section 26.6.4.2.1.3* require an MFVN provider to be a regulated common carrier. It is important to understand the following statement in the definition: “network capable of transmitting real-time signals with formats unchanged.”
- The Annex A provides examples of common carriers, including Incumbent Local Exchange Carriers (ILEC), Local Exchange Carriers (LEC), Competitive Local Exchange Carriers (CLEC), and FCC-licensed cellular service carriers. The Annex A material for the MFVN definition was also updated to include a sixth feature to the list of features indicating an acceptable MFVN should have to transmit fire alarm signals.

Key NFPA 72 Chapter 26 Updates

- A.3.3.172 Managed Facilities-Based Voice Network (MFVN).
- Managed facilities-based voice network (MFVN) service is functionally equivalent to traditional public-switched telephone network-based (PSTN-based) services provided by authorized common carriers (i.e., public utility telephone companies), Incumbent Local Exchange Carriers (ILEC), Local Exchange Carriers (LEC), Competitive Local Exchange Carriers (CLEC), and other Federal Communications Commission-licensed (FCC-licensed) carriers. All the above offer interconnection to facilities and unbundled network elements to provide such telecommunications services, with respect to dialing, dial plan, call completion, carriage of signals and protocols, and loop voltage treatment and provides all the following features: *see next slide*

Key NFPA 72 Chapter 26 Updates

1. A loop start telephone circuit service interface.
2. Pathway reliability that is assured by proactive management, operation, and maintenance by the MFVN provider.
3. 8 Eight hours of standby power supply capacity for MFVN communications equipment, either located at the protected premises or field deployed. Industry standards followed by the authorized common carriers that operate MFVNs, specifically engineer the selection of the size of the batteries, or other permanently located standby power source, in order to provide 8 hours of standby power with a reasonable degree of accuracy. Of course, over time, abnormal ambient conditions and battery aging can have an adverse effect on battery capacity. The MFVN field-deployed equipment typically monitors the condition of the standby battery and signals potential battery failure to permit the communications service provider to take appropriate action.
4. Twenty-four hours of standby power supply capacity for MFVN communications equipment located at the communications service provider's central office.
5. Installation of network equipment at the protected premises with safeguards to prevent unauthorized access to the equipment and its connections.
6. Carrier communications and virtual signaling traffic traveled over a fully managed network, such as network facilities owned or leased by a private network connection or a combination thereof.

Key NFPA 72 Chapter 26 Updates

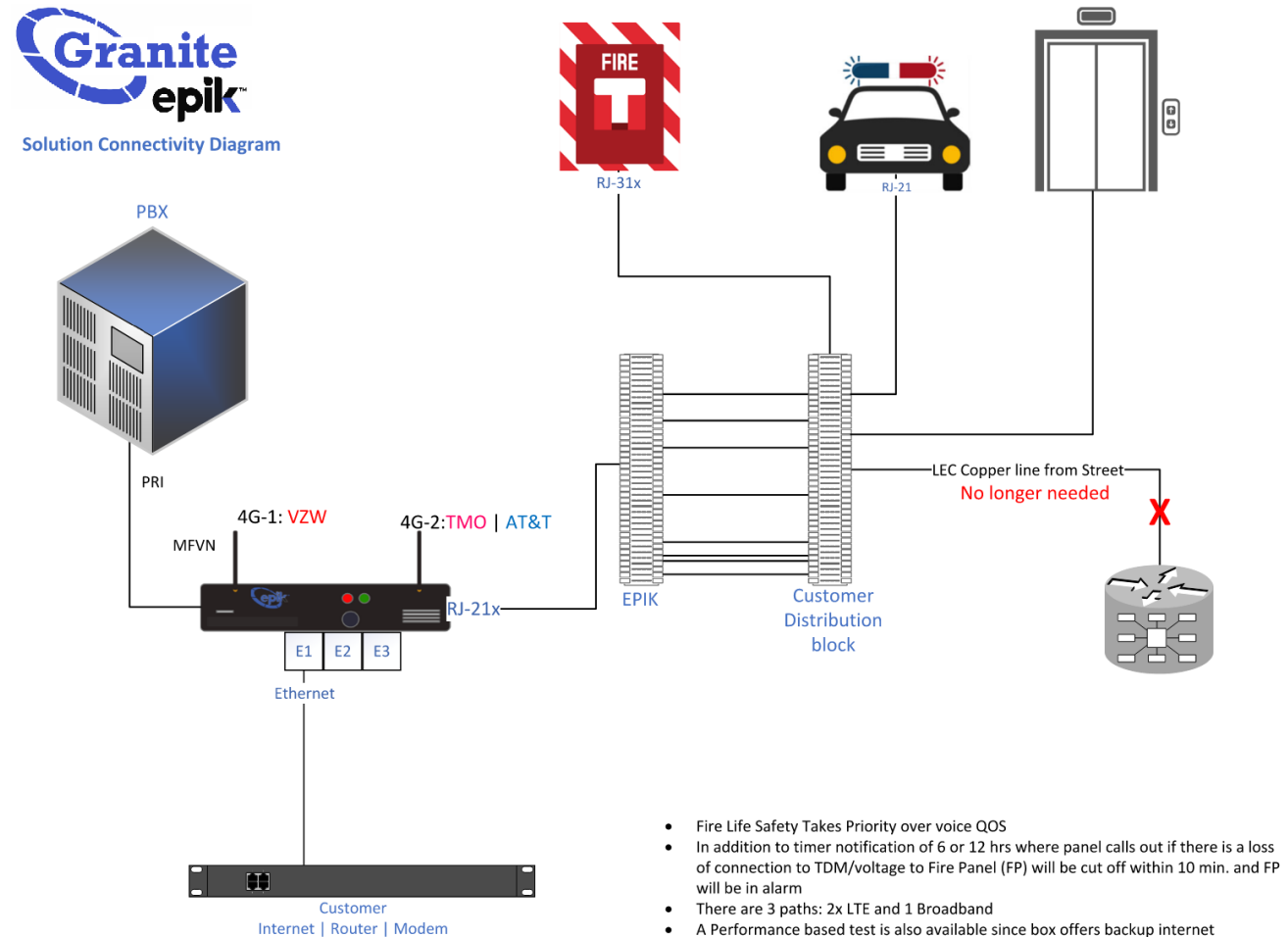
MFVN Requirement	What to look for / What to ask service provider to prove they can meet
Telecommunications carrier	<p>Licensed by state public utility commission and FCC to provide <u>local exchange</u> (i.e. dial tone) services</p> <p>How to look up a telecommunications carrier:</p> <ul style="list-style-type: none">• FCC: https://apps.fcc.gov/cgb/form499/499a.cfm• CPUC: https://apps.cpuc.ca.gov/apex/f?p=102:1• Other states: Consult agency website
Loop start telephone circuit	Independent lab testing report showing compliance with Telcordia R-506-CORE, LATA Switching Systems Generic Requirements: Signaling for Analog Interface, or Telcordia GR-909-CORE, Fiber in the Loop Systems Generic Requirements
Pathway reliability assured by MFVN provider	<ul style="list-style-type: none">• Multiple technologies for back-end transmission for redundancy—wireline (where available) and wireless• Ability to maintain call when switching communication paths• Carrier disaster recovery plan
Standby power	24 hours standby power (to comply with future NFPA 72-2025 requirements for equipment at protected premises which transmit alarm signals)
Access safeguards at protected premises	<ul style="list-style-type: none">• Installation in locked telecom closet• Signage identifying communications pathway(s) (future NFPA 72-2025 requirement)
Fully managed network	<ul style="list-style-type: none">• Carrier responsible for all traffic up to PSTN handoff point• Cannot be just hardware—needs a carrier to be responsible for management of network

Key NFPA 72 Chapter 26 Updates

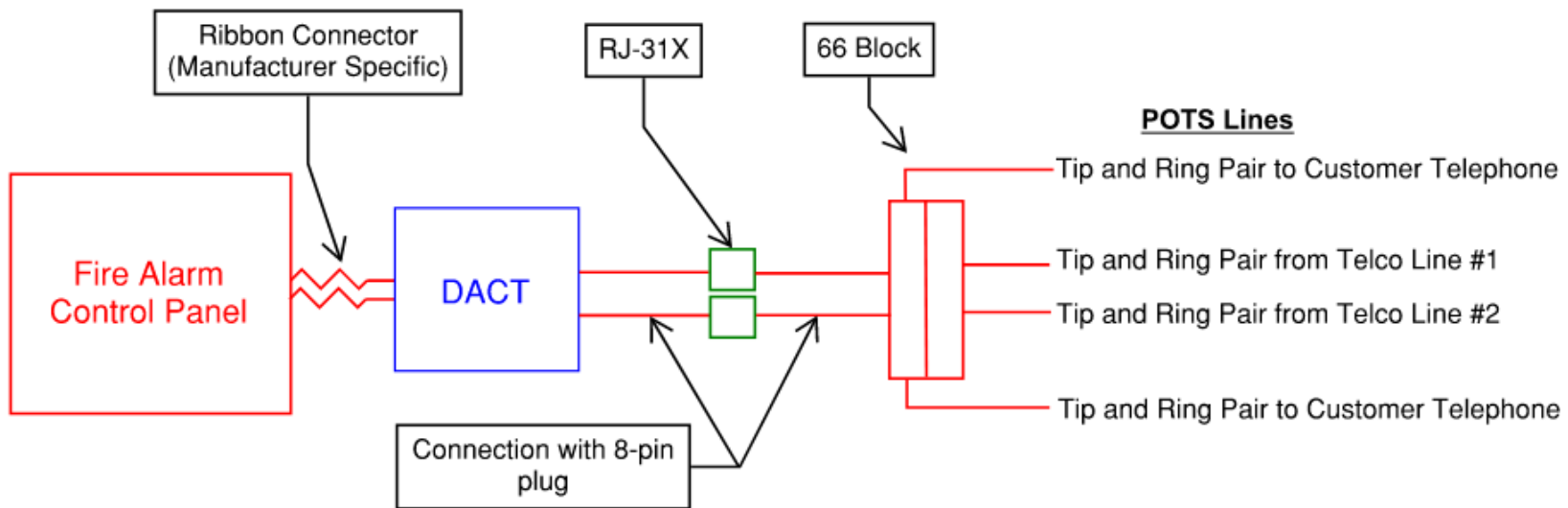
There are many MFVN solutions on the market using different types of hardware and technologies. The Granite EPIK POTS Replacement solution is an example of one of them.

Granite EPIK:

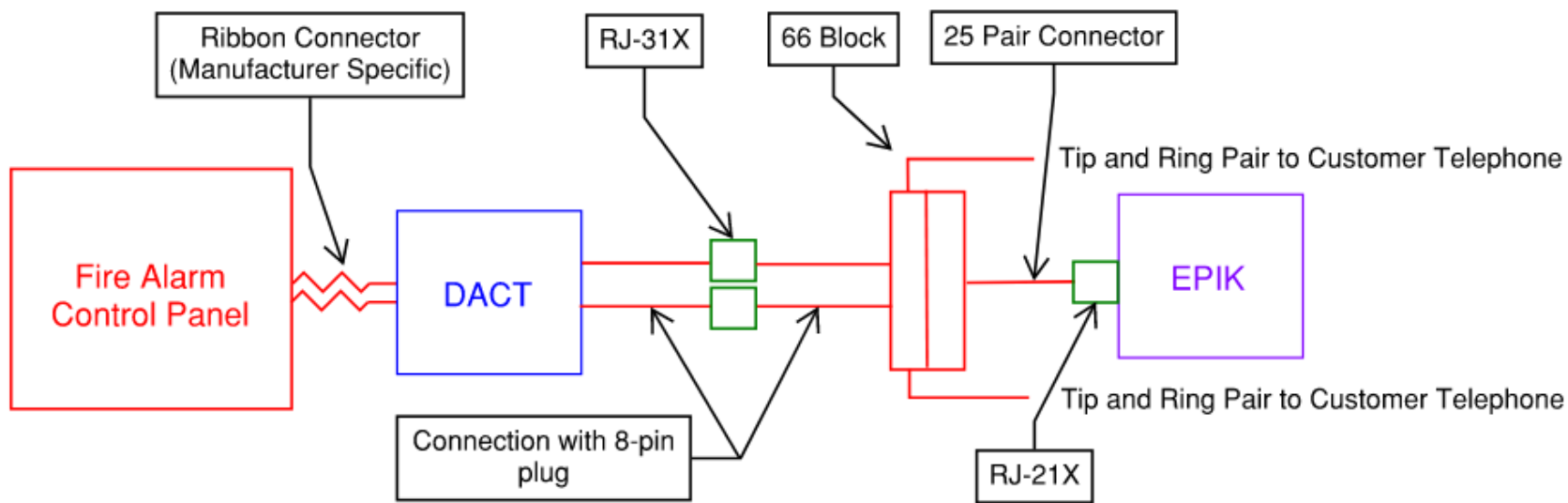
- Provided by Granite, a telecommunications carrier licensed by the FCC and state public utility commissions in all 50 states.
- Independent lab tested according to Telcordia “loop start telephone circuit” standard.
- Three communications paths using two different technologies for its backhaul connections (wireline data connection and two separate wireless data carriers) wherever possible.
- Patented technology that uses a local processor, which enhances performance and enables Granite EPIK to switch from one back-end connection type to another (e.g. wireline to wireless) without dropping an active call.
- 24-hour standby battery power.
- Fully managed network connections from protected premises to PSTN handoff points at Granite data centers.



Key NFPA 72 Chapter 26 Updates

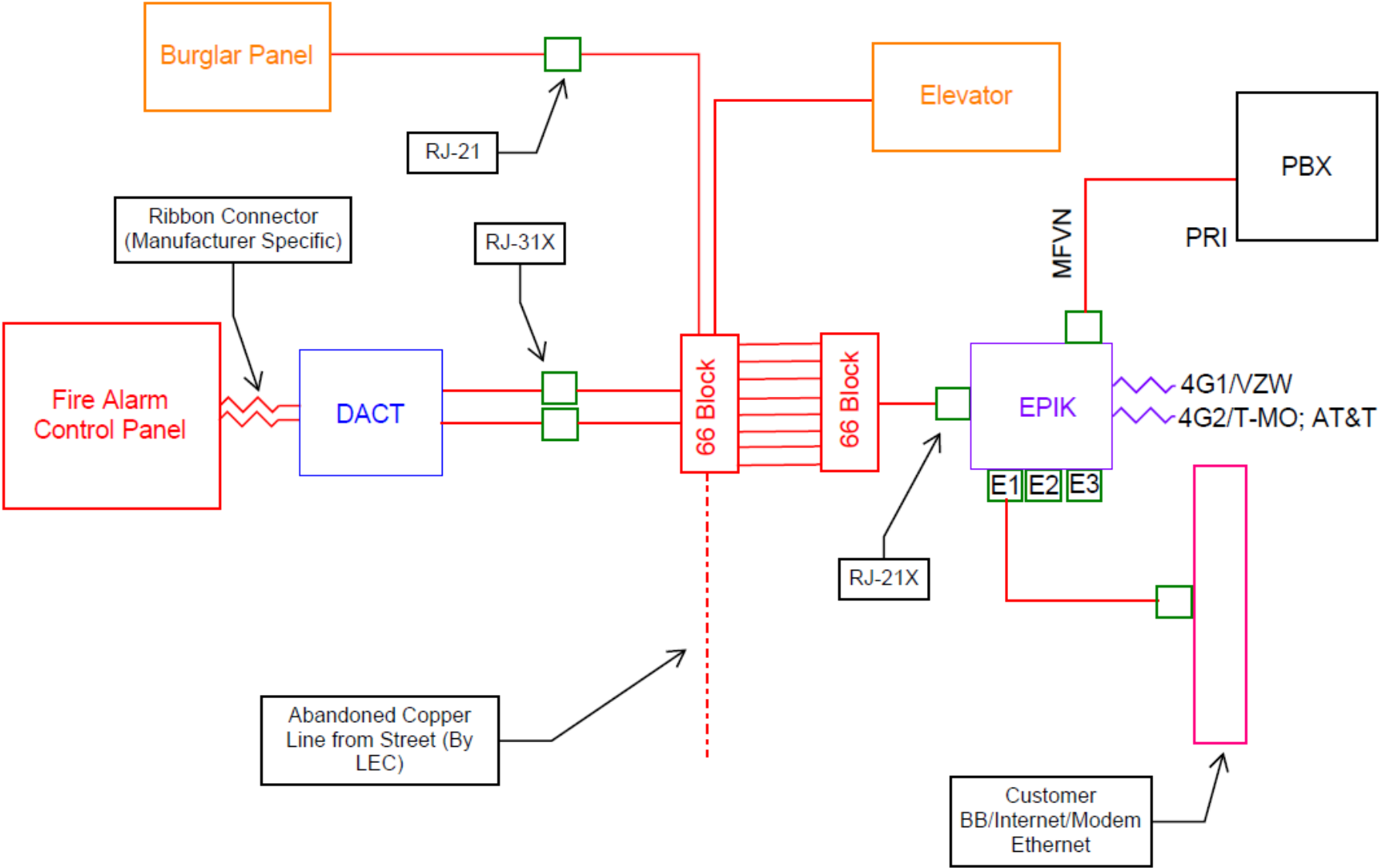


POTS



MFVN

Key NFPA 72 Chapter 26 Updates



Questions?

Wayne D. Moore, PE
429 West Reach Drive
Jamestown, RI 02835
+1 401-965-8093
wmoorefpe@gmail.com

