COMMUNICATIONS

ASCET Central Florida
You can’t fight it any longer the POTS lines are going away so let’s get a better understanding of what's out there.

69A-48.008 was amended on 11-1-09 to address the requirements of Managed Facilities-based Voice Networks (MFVN)
(1) Monitored fire alarm systems shall be installed and operate in accordance with the applicable NFPA standards adopted in subsection 69A-3.012(1), F.A.C., and incorporated by reference therein.

(2) Any person currently providing or proposing to provide fire alarm monitoring services to protected premises shall notify the authority having jurisdiction in writing at least 10 days prior to offering the service. The provider shall notify the authority having jurisdiction verbally within 24 hours of discontinuing monitoring services to a protected premise. The verbal notification shall be confirmed by written notification provided to the authority having jurisdiction within 10 days of the discontinuance of monitoring services.
69A-48.008

69A-48.008 Monitoring.

(3) Managed Facilities-based Voice Network (MFVN) is a physical facilities-based communication network that:

(a) Is managed and maintained by the service provider to ensure service quality and reliability from the service subscriber location to the point at which a call is transferred or handed off to another MFVN peer network such as the public switched telephone network (PSTN), defined as a single or an interconnected collection of local, long distance and international phone companies;

(b) Conforms to all relevant PSTN standards with respect to:
   1. Dialing,
   2. Dial plan,
   3. Call completion,
   4. Carriage of alarm signals and protocols, and
   5. Loop voltage treatment;

(c) Provides real-time transmission of voice and real-time transmission of signals that carry alarm industry standard alarm formats unchanged;

(d) Preserves primary line seizure for alarm signal transmission;

(e) Provides a method of electrical power backup such as a battery that provides a minimum of 8 hours of continued uninterrupted voice service availability to the attached alarm system, and

(f) Provides disaster recovery plans to address individual customer outages and network power restoration procedures. The plans shall be provided to the authority having jurisdiction upon request.

(4) The provider must demonstrate that the network is an MFVN as described in this rule by submitting to the authority having jurisdiction an attestation that the company’s network meets the criteria in paragraphs (a) through (f), above.

A NO-NO

- Using VoIP telephonic pathways service similar to “Vonage,” “Magic Jack” or “Ooma”
  - PROBLEM: CODECs are generally not compatible with telephone company standards.
  - PROBLEM: Equipment is customer owned.
  - PROBLEM: Standby power supply is generally non existent
Traditional DACT Communications

- All communications rely on the telephone network (one single comm. path).
- Transmission can take more than 1 minute end-to-end.
- Monitoring stations usually use 800 numbers for the panels to dial in and send alarms.
- Line failures are not detected by the monitoring station until a test signal is lost (daily or weekly).
Traditional DACT Communications

- **Redundancy**
  - Two separate phone lines
  - Two separate phone numbers

- **Subject to changes by controlling carriers**

- **Multiple carriers used between premises and supervising station**

- **Still a cost involved**

- **NFPA originally REJECTED the technology. After the THIRD ATTEMPT the committee agreed to put DACTs into the standard.**
Traditional DACT Communications

Plain Old Telephone Service (POTS)

Public Switched Telephone Network (PSTN)

For years, the fire alarm industry has relied heavily on the use of analog or POTS telephone lines to connect the protected premises with remote monitoring stations. These lines are an outdated technology and will soon disappear completely. Many fire systems today are connected to digital lines in which they were never designed nor are listed to be used on.

What are we going to do?
The Situation with DACTs

- PSTN (POTS) - sunset on the horizon
  - FCC statement - switch to broadband IP
  - AT&T: 700,000 POTS lines/month being shut off
  - 25% of households have no pots line

- DACT issues
  - Protected premise issues with FA communicators on commercial sites
  - DACTs developed before VoIP - require copper, analog phone lines
Industry Publications

- Security System News May 2010
  - FCC says: POTS ‘not sustainable’

- MSN December 2009
  - AT&T: Let's junk the old phone system
  - “The telephone giant says the traditional network is obsolete and needs to be scrapped so that broadband access can become a nationwide reality.”

- Security System News January 2010
  - POTS sunset on the horizon?
  - “FCC issues public notice seeking ways to phase out relics of a by-gone era”
Its Happening TODAY!

- Conversion to digital systems
  - VOIP
  - Fiber
  - Single carrier
  - No battery back ups
  - Signal degradation

- P.O.T.S lines are being transitioned to digital at the first opportunity

- P.O.T.S lines are already becoming hard to get and more expensive

- Fiber links offer over 1,000 times as much bandwidth over distances over 100 times further
Why IP? and.... Why now?

- Current IP networks are mature, robust and reliable
  - Mission-critical services (bank transactions, retail, military etc) rely on IP

- Increases the efficiency in alarm transmission
  - Always on - No need for call setup
  - High transmission speeds - The alarm is transmitted in few seconds (DACT speeds as slow as 2400 baud!)
  - The Internet access is shared - No need to pay for an extra IP line
Why IP? And.... Why now?

- Enhanced supervision
  - IP supervision adds no extra cost - Line can be supervised as often as we choose

- Saves costs
  - IP flat-rate Vs. toll-free numbers
  - No telephone lines required, just IP service
Understanding IP Communication

- Alarm information is assembled into an IP Packet (packetized) and encrypted for security at start of journey
- Always knows where it is going and where began
- At destination, taken apart, check sum verified
- Message is secure and reliable
- Internet is a true mesh so messages route around obstacles using Dynamic Routing
- POTS is hub and spoke – lose a spoke and the signal is lost
Two IP Solutions

**IP Communicator**
- Single path
- Visoralarm Receiver – 30 CS
- Thousands of Installations
- Point-to-point
- Full CID – HFS Panels
- Dry Contact – Any Fire Panel

**IPGSM-DP**
- Dual path
- Alarmnet Receiver – 700 CS
- Millions of Installations
- Relay point (AlarmNet)
- Full CID – Any Fire Panel
Introduction to the IP Communicator

IPDACT-2UD

Visoralarm-Plus Monitoring Station Receiver
Introduction to the IP Communicator

- The IP communicator module allows Fire-Lite panels to use a customer’s existing IP network as a communication path to transmit alarms.

- It offers performance, functionality enhancements, and cost savings to traditional digital dialer communicators.
Introduction to the IP Communicator

- Full bi-directional access to the alarm panel over the internet
- No third party access to information (latest 512 bit encryption)
- No geographic limitations (UD operator can be anywhere)
- Supervision is outstanding – every 90 seconds
- Works with any fire panel
- Remote Diagnostics allows troubleshooting from any connected PC
It’s Not a DACT!

• Though the IP Communicator is indeed a fire alarm communicator, it is not a “DACT” even though it has those letters in its catalog numbers.

• DACT’s, by definition in the Code, connect to the public switched telephone network for communications.

• Traditional fire panel DACT’s are considered in section 26.6.3.2 of the 2010 code, 8.6.3.2 of the 2007 code and 8.5.3.2 of the 2002 code. These sections have no bearing on the use or installation of the IP Communicator or Visoralarm Receiver.
Current Listed Architecture

Diagram showing the architecture with:
- Monitoring Station
- Internet
- Primary Receiver
- Backup Receiver
- Automation Server
- DynaFire

Note: The diagram illustrates the connectivity and flow of the system components.
The IPGSM-DP
Introduction to IPGSM-DP

- Allows Fire panels to use existing building IP network as a communication path to transmit Contact ID

- No Phone Lines!

- In the event the internet goes down, it can be configured to switch to GSM Cellular service
The IPGSM-DP can be programmed to communicate with AlarmNet in one of three ways:

- **Internet & GSM**
  - Internet primary path
  - Cellular secondary using GSM
    - GPRS
- Internet only
- GSM only
Introduction to IPGSM-DP

- Shares existing Internet connection eliminating phone line cost
- Cellular back up provides communication redundancy at “Life Safety” levels
- Drop in replacement - panel operation the same
- Secure Connection – 256 bit AES encryption
- Reliable Connection – Line tested every day
- Offers performance, functionality enhancements, and cost savings to traditional digital dialer communicators.
Introduction to IPGSM-DP

- Internet & GSM Communications
  - Both utilize AlarmNet Network

- Full Contact ID reporting
  - Built-In dialer capture
  - Supports *any* FACPs DACT sending Contact ID!

- Primary Communicator UL 864 Fire listing
What is GSM?

- Global System for Mobile Communications
  - Developed in 1990s
  - One of the leading digital cellular networks
  - AT&T service in the U.S.
  - Rogers service in Canada

- Most popular standard for mobile phones in the world.
  - Approximately 70% of the world’s market
  - Open standard with roaming capability
The IPGSM-DP ships with everything needed for installation*:

• Honeywell IP Communicator
• Wireless Transmitter
• Dialer Capture Interface
• Power Supply
• Antenna
• Cables

* Except batteries. One 12-Volt, 7 AH battery is required and ordered separately. (P/N BAT-1270)
Radio – Alarm Net

- There are two types of AlarmNet-A subscriber radios:
- One-Way radios check in at regular intervals, and Two-Way radios are polled by the network.
- Reliability is assured by repeating alarm transmissions 60 times.
- The network identifies the radio and the central station to which it belongs.
- The alarm is then relayed to the central station receiver.
- The entire process is fully automated and typically takes a few seconds.
What is AlarmNet?

• A blend of network and hardware communication elements providing:
  - Delivery of life safety signals to central stations
  - Is a partner with the central stations in providing this service for the end customers

• Provider and integrator of diverse and changing technologies:
  - 900MHz proprietary radio network
  - Mobitex radio products and network connectivity
  - Internet products and network connectivity
  - GPRS/SMS products and network connectivity

• Supplier of advanced Remote Services
  - “Total Connect” branded
  - Residential and Commercial appeal
AlarmNet Infrastructure

- All signals from the IPGSM-DP are delivered to Honeywell’s AlarmNet Network Control Center which routes alarm information to the appropriate Central Station.

- AlarmNet has the ability to route alarms to Central Stations using Internet, Radio Network or Toll-Free POTS service.
AlarmNet Infrastructure

- Robust Architecture
- Second Location
  - Hot to the primary site
- Redundancy
  - All hardware servers
  - Multi-layer hard drives
  - Power supplies
  - Network infrastructure
- Support
  - 24/7 infrastructure
  - 24/7 tech support – 8AM-8PM plus after hours on-call
  - AlarmNet Direct Web Services

20 Years of experience providing radio service to the security industry

Solid Foundation for Life-Safety Signaling
AlarmNet Central Station IP Receiver

- Allows a Central Station to receive signals via the Internet using the AlarmNet-i service.
- Easy CAT-5 connection to Ethernet hub, switch or router
- Touchscreen User Interface
- Requires static IP address
- Can be installed in conjunction with a Honeywell receiver or directly interfaced with Central Station automation equipment
AlarmNet 800-Plus Service

- For those Central Stations whose facilities are located outside the coverage area of the AlarmNet radio networks and have not yet upgraded to an AlarmNet IP Receiver, AlarmNet offers 800-Plus service.

- This service forwards alarm messages that have been received by the Network Control Center to a toll-free POTS line belonging to the Central Station. This is done utilizing a bank of dialers located at AlarmNet.
Our GSM partners provide our dedicated wireless network. Our family of products employs flexible GSM technology. For the 7845GSM, dual-path GSM communication utilizes GPRS and automatically switches to SMS if GPRS is unavailable. With the 7845i-GSM, Honeywell adds ground-breaking Internet connectivity along with GPRS and SMS technology to provide triple-path communication. In this case, the Internet is used as the primary path, with GSM technology as a backup.
Radio AES Intellinet

- Mesh radio
- Listed under “One Way Radio” but it is really two way
- Heartbeat provides Monitoring
Radio AES Intellinet

- UL-864 Listed & NFPA-72 Fire Compliant - Primary
- UL AA Certified For High-Level Security Applications
- HERO Listing
- CSFM Listed
Radio AES Intellinet

Multi-Region Radio Network (MultiNet)

Single Region Radio Network
Radio AES Intellinet

AES 7758F: Fire Transceiver

- Primary fire monitoring without phone lines
- UL Listed and NFPA-72 compliant
- Reporting by individual zones
- 7750F-8 version: 8 EOL inputs
- 7750F-4x4 version: 4 NO/NC/EOL zone inputs, 4 fire/reverse polarity inputs
Case study

Customer
• Florida State University, Tallahassee, FL
• 115 Buildings

Problem present
• Lack of fire alarm dependability using non-UL telephone alarm system
• Historical buildings – conduit limitations on installation

Solution Provided:
• 2-way supervised wireless mesh network
• Real-time fire alarm reporting
• Centralized fire alarm reporting w/satellite campuses

Benefits
• Seamless upgrade without down-time
• Faster and more reliable fire alarm communications
Thank you for attending and thank you to the following for their input:

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