



Multi-Campus Solution Brief *by* VoiceInterop

High Level Overview

A state university needed to consolidate their communication methods across eight (8) remote campus locations into one centrally managed unified communication Network Operating Center (NOC). Disparate communication technologies between campuses include two-way radio systems, emergency callbox systems, telecommunication routing and switching equipment, public address systems, campus-wide lockdown alerting and patching of two-way radio and landline calls to local 911 centers. The only common method of communicating between the campuses was with traditional TDM landline phone, cellular phones and e-mail.

This presented the university with many hurdles to build a unified communication solution that would address their immediate and future needs. Soon after the university began its search for a solution, it became apparent that a standards-based solution would best leverage the use of existing communication assets. This fact, combined with commercial off the shelf products (COTS) procured under current contracts provided the most financially sound solution. It was also decided to implement highly reliable connections between all the remote campuses and the university's NOC. In doing so, the university could bridge the traditional methods to IP based methods with their experienced IT/telecom personnel and at their pace.

These scenarios of disparate communication systems throughout educational and business multi-campus environments and the business processes supporting them are common. Furthermore, the combination of aging analog technology and efforts to transition to new IP based and digital systems creates confusion when forecasting the implementation of future technology roadmaps.

Traditional Technology Hurdles

- Excessive Costs – Leased line and long distance rates for inter-campus dialing, multiple-carrier cellular service contracts, disparate two-way radio equipment and licensing and multi-vendor maintenance and support agreements.
- Emergency Notifications – Desktop alerting, emergency callbox, public address systems and SMS messaging services had varying delivery and responding methods rendering increased response times.

- Emergency Interoperable Communications – Due to the many different disparate technologies required to respond to an event, coordination efforts are hindered and delayed.
- Business Processes – Day-to-day communications between on-and-off campus personnel was achieved at the end user's discretion and not by the process established by the university, thus resulting in excessive costs and response times for critical events.
- Lack of Available Parts - Technicians spend needless hours refurbishing end of life cycle parts.
- Continuity in Design – IT, telecom and wireless administrators typically procure according to specific needs, which is not in sync with a unified communication approach.
- Scalability – The traditional system did not support interoperability or patching with local 911 emergency operators or disparate devices such as IP and cellular phones, two-way and iDEN radio systems and PCs.

Primary Objectives Include:

- Reduce overall operational communication expenses
- Improve business efficiencies and emergency response times
- Consolidate remote dispatch locations into one command center
- Patching of two-way radio calls to respective 911 centers
- Patching of two-way radio calls to respective jurisdiction
- Integrate campus-wide emergency notification and unified systems
- Improve compliance with recording and archiving capabilities
- Utilized a standards-based, software first approach
- Unified communication platform regardless of equipment type

As the university searched for a solution they realized there was only two ways to address their needs: 1) a major capital expenditure to replace existing IT/telecom and two-way hardware and/or 2) with a standards-based software approach. The traditional method was expensive, proprietary and still did not provide patching between disparate devices such as two-way radios, TDM phones and PCs. On the other hand, new IP based software solutions were feature rich with functionality and allowed for integration of disparate devices extending well beyond traditional methods. Furthermore, the IP based software solution provided technological obsolescence with annual renewal update subscriptions (ARUS).

Another contributing factor in the university choosing an IP based solution was the turnkey maintenance and support value proposition. Minimizing costs and downtime with one supplier versus the circle of confusion associated with diagnosing a problem with a variety of suppliers provided the university with peace of mind to know that one supplier can support the entire solution.

Command Phone *by* VoicEInterop

The VoicEInterop Command Phone for multi-campus at the base level represents a functional equivalent of an entire “hardware only” dispatch center solution with the added benefit of interoperability between disparate technology and devices. In addition, the VoicEInterop design provides for multiple initiator options with endless receiving party scalability regardless of device type.

One such application is the consolidation of multiple two-way radio dispatch operations into one centralized dispatch center, resulting in significant increases in efficiency of the voice dispatch operations. Unified communications is a bridge between the analog radio environment and the digital IP network environment. Two-way radio voice traffic is converted to IP packets and routed to a central dispatch center where dispatchers PTT back into the remote two-way radio coverage and can patch two-way radio calls through to local 911 centers if necessary.

VoicEInterop uses industry-leading standards-based software that manages and supports real-time secure group communications over IP networks, linking people and their devices. VoicEInterop provides the AudioMate360 IP gateways designed specifically for LMR, Analog and iDEN integration. All AudioMate devices are network programmable and manageable from one central location. Client requirements in building a VoicEInterop multi-campus solution include:

- Transporting two-way radio voice communications over an MPLS network
- Redundant network operating center (NOC) design
- Centralized voice dispatch operations from NOC to remote two-way systems
- Fixed and ad-hoc talk groups managed with web-based management tools
- Central dispatch patching of two-way radio calls to remote 911 centers
- Remote management capabilities of NOC and gateway devices

Design Criteria

As a software first approach, VoicEInterop minimizes costs and complications versus a hardware solution. It also provides technological obsolescence with software updates that can be sent via e-mail. No longer is scaling or integrating with other networks an issue because the software first approach never relies on one particular vendor.

Features and Benefits

- Manageable – comprehensive Web-based administrative interface allows for easy to implement and update management tools
- Leverage Assets – revitalizes existing communication assets and limits technical obsolescence for future upgrades
- Proven Technology– deployed in some of the world's most demanding environments where redundancy and reliability are mandatory
- Flexible and Malleable Design – a standards-based software approach results in support for multiple gateways, networks, protocols and communication devices

Results

The Voicelnterop solution is designed to seamlessly integrate with existing communications with zero to minimal downtime. Most importantly, it does not alter the daily operations or protocols in which dispatchers and responders communicate on a day-to-day basis. Dispatchers now have the ability to PTT to any radio talk group regardless of geographic location and patch personnel through to their local 911 PSAP in an emergency situation.

To achieve this, an MPLS enabled fiber network can establish connections between the NOC and remote campus networks and devices. After all network connections are established, a collaboration of information takes place between an unlimited number of initiators and responders. An added result is the ability to record, archive and review calls automatically for training and compliance purposes.



Conclusion

The capability to improve response, reduce expenses and improve operational efficiencies across the board is further enhanced by eliminating traditional proprietary methods. The future for unified communications is now and shall be well into the future, standards-based! Stand-alone communication islands are a way of the past with IP solutions being the wave of the future.