



Mass Transit Solution Brief *by* VoiceInterop

High Level Overview

An international mass transit company needed to consolidate 200 remote dispatch locations into one central dispatch operating center due to outdated equipment, leased line costs and operational protocols driven by corporate compliance. These issues required the management to constantly coordinate testing with their dispatch offices creating undue stress on day-to-day management processes and the remote dispatch operations. The extra workload taxed personnel during the daily course of business when they should have been responding to actual events.

These scenarios of analog two-way radio systems and business processes with no overlapping feature sets, other than typical Push-to-talk (PTT), are commonplace throughout the industry. Furthermore, the combination of aging analog technology and efforts to transition to new IP based or digital systems creates confusion when forecasting the implementation of future technology roadmaps.

Traditional Technology Hurdles

- Poor Voice Quality - Frequent static and lack of clarity were plaguing operators, dispatchers and responders due to antiquated technologies.
- Business Processes – Day-to-day operations were hindered due to additional workload required to ensure the technology was working.
- Lack of Available Parts - Technicians were spending long hours on maintenance because certain parts were longer produced and had to be refurbished and reused.
- Survivable Design – IT/Telecom design was not conducive in building a redundant, self-healing design including autonomous offline operations, peer-to-peer communications and automatic failover.
- 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.

The primary communication objectives for mass transit 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
- Improve compliance with recording and archiving capabilities
- Implement standards-based software solution
- Unified communication platform regardless of equipment type

As the mass transit company searched for a solution provider they realized there was only two ways to address their needs: 1) a traditional hardware only solution and/or 2) an IP based software and hardware approach. The traditional method was expensive, proprietary and provided limited patching between two-way radios and TDM phones. 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).

The contributing factor in choosing an IP based solution was the turnkey maintenance and support value proposition. As an example, although both solutions improved the mass transit's interoperability, ongoing maintenance and support from one supplier versus many suppliers was the deciding factor.

Command Phone *by* VoicEInterop

The VoicEInterop Command Phone for mass transit 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. Also, 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.

VoicelInterop uses industry-leading standards-based software that manages and supports real-time secure group communications over IP networks, linking people and their devices. VoicelInterop 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 VoicelInterop mass transit 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, VoicelInterop minimizes costs and complications versus a hardware solution. This approach also provides mass transit customers with technological obsolescence when compared to a hardware solution. Also, whenever new versions of software are available, updates can be quickly and easily pushed out to networks and devices. 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

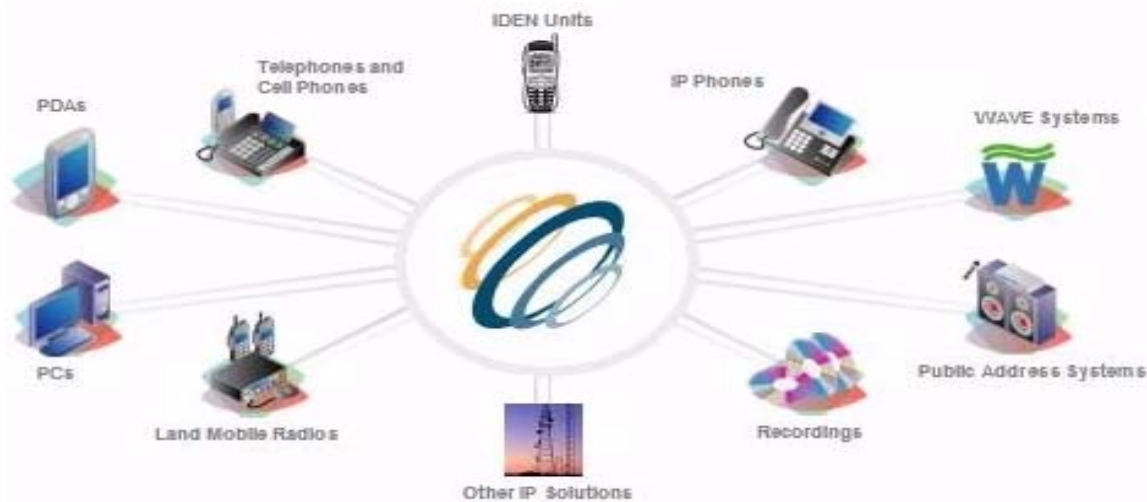
- Manageable – comprehensive Web-based administrative interface allows for easy to implement and update management tools
- Leverage Assets – revitalizes existing communication assets and limits technical obsolescence for future upgrades
- Proven Technology– deployed in some of the world’s most demanding 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 VoiceInterop solution is designed to seamlessly integrate with existing communications with zero to minimal downtime. Most importantly, it should not affect the daily operations or protocols in which dispatchers and responders alike, 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, in some cases a multi-state MPLS network that supports multicast is required. MPLS connections are established between the NOC and remote two-way radio sites that will join the network. After all network connections are established, a collaboration of information takes place between an unlimited number of dispatchers and answering personnel. An added result is the ability to record, archive and review calls automatically for training and compliance purposes.

A mass transit company is now able to replace many dispatch operators and third-party services and bring online a state-of-the-art dispatch center to their PCs with advanced capabilities and guaranteed availability.



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 now a way of the past and IP solutions are the wave of the future.