IP based Hoot and Holler Conference Bridge for the Transport Industry

An XOP Networks White Paper

What's inside

EXECUTIVE SUMMARY

Introduction

This White Paper describes the application of XOP Networks' IP based Hoot and Holler Conference Bridge Network in the Transport Industry. The approach described is equally applicable to the Financial Markets (Wall Street/ Investment Banking), News Broadcasting organizations, and Federal/State/local Emergency Responders networks.

Hoot-n-Holler Overview

Hoot-n-Holler networks began as Junkyard service that provides an "always-on" multi-station conferencing service, that does not require users to dial into a bridge over the PSTN. It was also known as a Squawk-box, Holler-down circuit, or Shout-down circuit.

As the early Hoot-n-Holler networks evolved, they developed into a highly specialized network, that was taken up by financial institutions, news agencies and Federal/State government agencies, etc., – in fact anywhere there was a need for "Critical Real Time" information. Instead of providing their own circuits, they relied on 2/4 wire leased line circuits from the telco that terminated into often a centralized analog mixer/conference bridge that provided the hoot-n-holler capability.

Key advantages of the IP based Hoot-n-Holler network

The new IP based solution provides significant cost savings (Capex savings vs Opex), with paybacks ranging from 6 months to as low as 2 months (actuals depend on size of network, Carrier costs, etc.). The quality of the voice service is also superior, especially when the IP traffic is routed over MPLS type networks with associated Grade of Service markers.

In addition, the network is easy to set-up/change or expand, and permits modern VoIP terminals that have been specifically designed for the Hoot-n-Holler operation, are extremely easy to operate, and are low cost when compared to the old analog counterparts.

LEGACY HOOT-N-HOLLER NETWORKS

Legacy Hoot-n-Holler networks are usually based on analog (an/or TDM) leased line networks and consist of three (3) major elements: 1) Station Equipment: A 4-wire termination to a station consisting of a Push-to-talk handset and a desk mounted loud speaker and/or a room PA type of speaker, 2) Dedicated, 4 wire analog network- typically provided by a Telco/Carrier that may also use TDM circuits for long haul connections, and 3) a centralized bridge that can effectively mix the audio, amplify the signal level and re-distribute to all end points. Figure 1 following illustrates a typical legacy hoot and holler network.

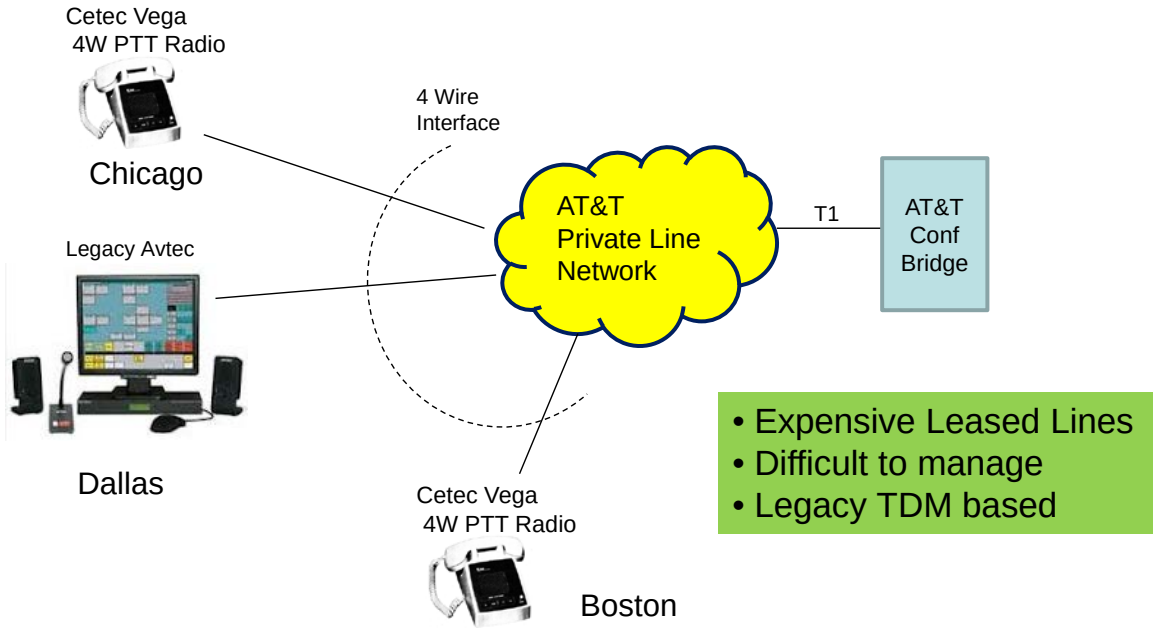

Figure 1: Traditional Analog/TDM based Hoot-n-Holler Network

In the traditional Hoot-n-Holler network the customer/end user pays the Telco/Carrier a monthly fee to transport the 4-wire connections over private leased lines. In large networks this monthly fee can approach hundreds of thousands of Dollars per annum, and in addition the end-user has to pay for the" always-on" conferencing service which further adds to the leased line charge.

The analog legacy network is difficult to effectively manage and maintain, and new stations may take as long as 8 weeks to provision, via the telco leased line network. In addition, the station equipment is expensive, poor in reliability/maintainability, and very limited in terms of choice of available vendors.

In short, the technology has not changed much in the last 50+ years and the older legacy technology fails to meet today's standards for reliability and cost effectiveness.

IP BASED HOOT-N-HOLLER NETWORKS

In recent years, large corporations have been implementing their own private data networks (usually based on MPLS). These networks typically touch all physical locations that are involved in hoot-n-holler conferencing as well. Hence, a more cost effective approach for implementing the hoot network is to convert the traditional 4 wire devices (PTT Radios, Phones, Squawk boxes etc.) into SIP end points with the help of media gateways and then connect the resulting voice paths to an IP based Hoot-n-Holler conference bridge over the data network. Figure 2 illustrates how such network can be implemented. In addition to the legacy terminals, native SIP based Hoot and Holler terminals (e.g., Avtec's Scout, Essential Tel's VS-xx series etc.) can be added as new locations are added to the network. Note that these newer devices allow for dual homing to two separate H-n-H bridges. This allows for the calls to operate with the surviving bridge in case of network or equipment issue with the primary bridge.

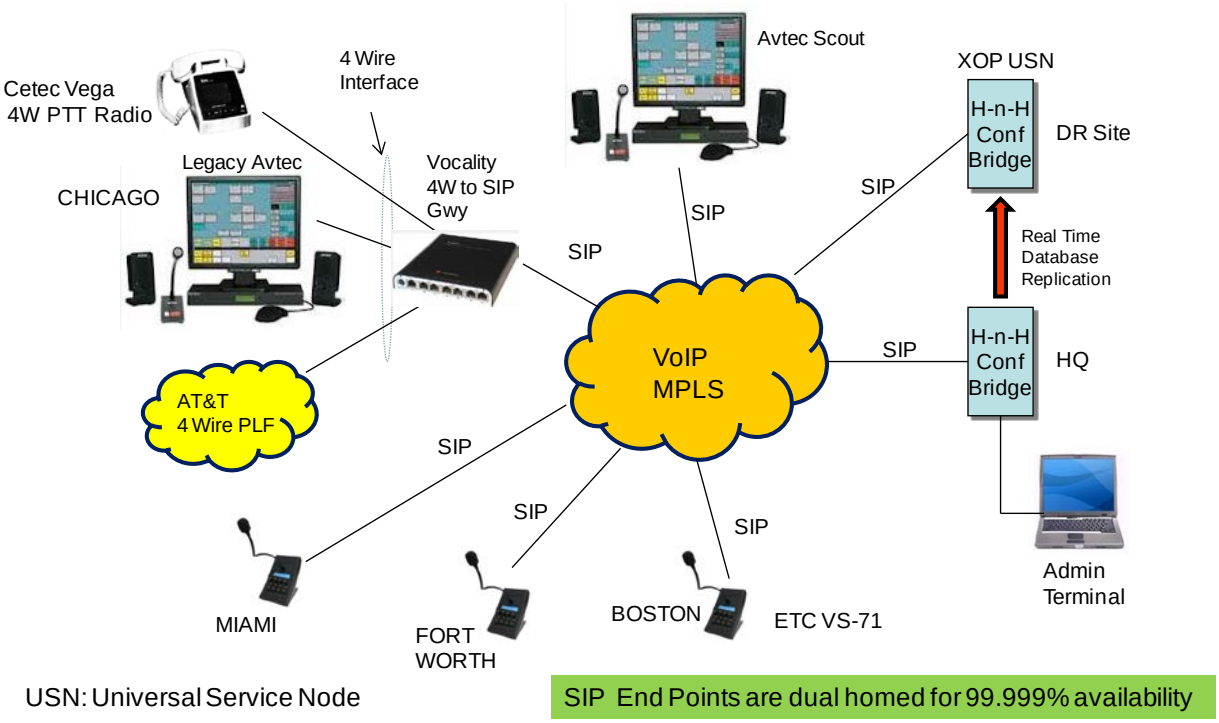

Figure 2: IP based Hoot-n-Holler Network

Key attributes of XOP Networks' IP based Hoot-n-Holler network solution are:

- Backwards compatible with old legacy 4-wire network – no need to fork-lift old network – just graceful evolution based on budget and expansion needs.
- Voice traffic is carried over a robust QoS controlled MPLS network that is already being paid for.

- Being all packet based, bandwidth is used on the network only when actual voice packets are transmitted/ received. This can be especially important when last mile of the MPLS network is on a DSL network. Most modern equipment supports standard VoIP compression (G711, G726, G729 codecs etc.), and Quality of Service markers.

- Allows introduction of modern native SIP station terminals going forward, such as the Avtec's Scout and Essential Tel Corporation's VS-71, VS-74 devices.

- If enabled, in case of any network issues with the legacy leased lines, operators can dial into Hoot-and-Holler conferences from the public network.

- The XOP Networks' IP based Hoot and Holler bridges can be deployed as Active/Active or Hot/Standby pair in different physical locations, with real-time data base replication between them. This high availability configuration along with dual-homed SIP based end points lead to 99.999% availability.

- Offending stations can be quickly identified and simply taken off-line to trouble-shoot, without upsetting the entire network.

- Supports unlimited Hoot-n-Holler groups, for example 1) airport maintenance, 2) scheduling, 3) emergency handling etc.

SUMMARY

The benefits of using the IP based Hoot and Holler network are:

- Eliminate and or significantly reduce the need for expensive leased lines & always-on conferencing services.

- Improve hoot and holler network manageability.

- Reduce the time to troubleshoot a problem from hours to minutes.

- Pave way for adding native SIP based Hoot-n-Holler end devices going forward.

One of the largest airlines in the world recently deployed a pair of XOP Networks' IP based Hoot-n-Holler conference bridges. These conference bridges are deployed in Hot/Standby high availability configuration at two separate geographical locations thereby ensuring 99.999% availability. Thanks to this deployment the Airline now has a modern, robust IP based Hoot and Holler network that has paid for itself in less than 4 months, hence proving the validity of the business case.

The XOP Networks' Universal Service Node (USN) with the Hoot-n-Holler conferencing product is a robust Linux based platform that is designed to fulfill the 'always on' audio conferencing needs of large mission critical Hoot-n-Holler networks. It supports both legacy TDM and VoIP/SIP interfaces thus allowing customers to migrate their hoot-n-holler networks towards packet based networking at their own pace.

ABOUT XOP NETWORKS, INC.

Headquartered in Dallas, Texas, XOP Networks was founded in January 2003 and is backed by a seasoned management team. Deployed at multiple Cellular Operators, Fortune 100 companies, CLEC/IOC customers, Government organizations, DOD networks (Air Force, Army and Navy) XOP Networks' products allow customers to boost employee productivity, increase business efficiency and enhance emergency communications. Having both TDM and VoIP interfaces, XOP products allow customers to seamlessly transition their value added services from legacy circuit switched networks to VoIP based packet switched networks.

For more information about XOP Networks, visit its website at http://www.xopnetworks.com.