



Trinity Broadcasting Application Example

Introduction

As is often the case with television broadcast operations with affiliates in multiple locations, Trinity Broadcasting Network (TBN) needed to interconnect their many stations. One of the challenges for the engineering staff was to connect the intercoms together between stations located in different cities. Since not all the systems involved are of the same manufacturer and the connections are temporary in nature the typical method of interconnection would be to use dial-up lines and telephone hybrids. This provides, as it has for many years, a common denominator that all parties can connect to. For more than two stations, multiple lines or the use of an external conference bridge is required. If more than one communications path is needed such as one for production and one for engineering, additional complexity and cost results. The use of telephone lines where they are paid for on the basis of time used can amount to significant costs and is severely limited in audio quality. To that one must also add the cost of high performance telephone interfaces. The connections must be dialed each time they are used to avoid the cost of having the connections "nailed up" permanently. Considering that these connections are temporary and need to be easily brought up and down, be re-configured from production to production, and may not be used often, the engineering team at TV Magic, a system integrator servicing TBN's main facility in Tustin, California was looking for a better solution. Craig Claytor, the TV magic engineer in charge of the project, turned to IntraCom Systems, LLC for a solution using their VCOM Virtual Matrix IP Intercom System.

Implementation

The VCOM System was deployed on a computer located in the central equipment room at TBN's Tustin, CA facility and connected to their data network. This machine runs the VCOM Virtual Matrix Server as well as a Device Interface Client, a Control Panel Client, and the System Administration application; since the system size is small, CPU utilization is minimal and all four components were able to reside on the same machine. An Edirol UA-1 EX USB to audio interface was connected to the computer and then to an RTS/Telex SSA-424 Interface, which is connected to the house intercom system. At this location the central intercom system is a multi-channel RTS TW system. The VCOM System connects to two channels of the system as selected by one of the RTS SAP-612 Source Assign Panels.

The VCOM System is programmed to assign the two available channels in the TW system to two party line channels in the VCOM Virtual Matrix server. In addition the VCOM Virtual Matrix server is programmed to start automatically when the computer starts up and the Device Interface client is programmed to automatically start and log in to the VCOM Virtual Matrix server. This allows unattended operation and protects the overall system from power failures or network outages. The central (home) portion of the system is always ready to go.

At each remote location a computer running a Device Interface client is connected to the TBN data network. To this computer, as in the central equipment room at the Tustin facility, an Edirol interface and an SSA-424 are connected if the affiliate's system is an RTS TW (as is found in the Atlanta station), or the Edirol interface is connected directly to a four wire matrix port if the system is an RTS/Telex ADAM (such as what is in place in New York). All of the affiliate systems are connected in a



manner that is dictated by the details of the type of system in place at any given affiliate and the number of intercom channels needed. These connections are typically made only when dictated by production requirements. When needed the Device Interface clients are simply "Logged In" to the central server and the appropriate connection is made.

The Virtual Matrix server and the Device Interface clients can be programmed to auto start and re-connect after a power or network outage. In addition, the clients can be programmed to automatically look for a second server IP address in the event of a primary server failure allowing a duplicate VCOM Virtual Matrix server to be created that will automatically take over if necessary. Since this back up unit can be located anywhere and administered from anywhere a new level of reliability and flexibility is available. Administration from anywhere allows the engineering staff to make changes very quickly even from a remote location.

There is no recurring use cost as the system is operating on the data network already in place for other purposes and the VCOM bandwidth requirements are very modest. The recurring use charges are eliminated and the level of convenience is greatly improved. When needed, start the program and away you go.

Due to the ease of connection and the ability to use a DHCP client, a log in can occur from anywhere a network connection is available. This means that the system can be accessed from anywhere including while on the road or at home. Immediate connection from a remote production location is as easy as logging into a WiFi or high speed cellular data connection to check your e-mail!

The addition of affiliate connections is as simple as the purchase and programming of additional VCOM Virtual Matrix Server ports and setting up the remote interfaces. For one time or occasional expansion ports may be rented on a temporary basis and this is done entirely via e-mail so there are no shipping charges!

Conclusion

The VCOM System provides a new and innovative method of interconnecting systems located over a wide area. It offers easy and rapid deployment, future expansion, avoids the recurring charges of telephone lines while improving greatly on audio quality, is easily administered from anywhere, and is highly cost effective.

As we see the entire industry moving toward IP based systems and away from proprietary hardware along with its high capital cost and rapid obsolescence, the VCOM System allows this trend to finally move into the area of high level communications.