

# Our Solution: **Interoperability**

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BridgeCom Systems, Inc. White Paper

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This document shows the possibilities of PC Client Dispatch Console with Cross-patching in reference to interoperability. It will outline the hardware and software necessary for the solution provided by BridgeCom Systems, Inc.



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## Introduction

The land mobile radio industry has undergone many changes over the years. It has gone from single site conventional, to single site LTR, wide-area networking, even digital. Today many items can be linked to your two-way radio network including a computer that acts like a stand alone site. You can even crosspatch radio groups at multiple sites together on the fly for one seamless interoperable network.

## Interoperability

What does Interoperability mean?

“**Interoperability** is a property referring to the ability of diverse systems and organizations to work together (inter-operate). The term is often used in a technical systems engineering sense, or alternatively in a broad sense, taking into account social, political, and organizational factors that impact system to system performance.”

-www.wikipedia.org

## The Problem

The Heart of Texas Council of Governments (HOTCOG), six budget-minded counties in Texas, had requirement to link their public safety entities and provide an interoperability solution so various talk groups of the six counties could communicate with one another. In addition, they required dispatch control to be able cross patch various groups "on-the-fly" in the event of an emergency. For example, it may be that FIRE personal needed immediate contact with Ambulance services. The dispatcher of a particular county needed to be able to link these two talk groups together at the press of button.

## Solution

Using the TL-NET Wide-Area communication solution, the HOTCOG counties have been able to deploy single channel TL-NET Gateways and one TL-NET Controller to each county site. All counties are connected via IP through the TL-NET server located at one of the county locations. In addition, each county member has PC Client Dispatch interoperability software running in Windows utilizing the CROSS-PATCH feature. This allows county dispatchers to monitor all channel activity and cross-patch talk groups as needed, or “on-the-fly”. Please keep in mind, this application required RF communication links operating in Conventional mode... not trunking. However, this feature is available in the event trunking (LTR) is used.

## **TL-NET**

TL-NET is a wide-area multi-site interoperability networking solutions. TL-NET combines all the features of single-site conventional or LTR with our VoIP backbone to provide a multi-site conventional or LTR trunking solution. All the benefits of single-site communications are maintained except now it's multi-site. TL-NET can link disparate communication systems, 800 Mhz, UHF, VHF, iDEN®, Digital for true interoperability. All dispatch calls are made using transmission trunking. Setup between sites is extremely fast. In fact, just as fast as handshaking with the local site.

## **Valuable Recognition Gained**

TL-NET is a **Level 5 Digital P-25 compliant interoperability solution** and recognized by the state of Texas, as of now. This is digital IP based wide area radio networking system solutions for interoperability of communications, carrier transparent. P-25 Radio, satellite, aircard, spread spectrum, wireless, analog POT'S lines or other aural information are all seamless interconnected via digital technology, transparent of the console operator.

## **Summary**

Through the use of PC Client with CROSS-PATCH and the TL-NET system HOTCOG has been able to communicate as individual counties or link “on-the-fly” when an emergency arises. Considerations are underway to expand the system by adding additional channels.

## **About the Author**

**Ron Kochanowicz** is the President of BridgeCom Systems and an Electrical Engineer with over 15 years experience designing, programming and manufacturing land mobile radio equipment.

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