



## Case Study - Licensed Microwave Ring for the City of Midland's Public Safety Network

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## CASE STUDY - CITY OF MIDLAND



### Customer Profile



Midland is a city in and the county seat of Midland County, located in the Llano Estacado near the center of the Permian Basin oil fields in west Texas. A small portion of the city extends into Martin County. As of 2008, the population of Midland was 106,561. Midland is the hometown of former First Lady Laura Bush and the childhood home of former President George W. Bush.

Midland has been nicknamed "The Tall City", and has long been known for its impressive downtown skyline despite its moderate size. Most of downtown Midland's major office buildings were built during a time of major Permian Basin oil and gas discoveries. The surge in energy prices in the mid-1980s set about a building boom for downtown Midland. For many years, the 22-story Wilco building in downtown Midland was the tallest building between Fort Worth and Phoenix. Today, Midland's tallest building is the 24-story Bank of America building which stands at a height of 332 feet (101 m).

Midland employs over 200 full-time public safety employees, including Police, Fire, and EMS.

### Situation

The City of Midland was looking for a cost-saving way of replacing their antiquated Farion Analog Microwave System to improve the efficiency of data and voice between radio sites. They sought a wireless digital point-to-point network to enable all IP addressable field devices to communicate and interface with their existing EDACS system, which utilizes E&M keying and RS-232 data function.

This network is utilized by Midland's public safety/emergency responders, including Fire, Police, and EMS. The sites involved were the city's PSCC (Public Safety Communications Center), a leased facility near the top of the Bank of America building, and a city-owned site at the Midland International Airport.

Chuck Gibson, Communications & Information Systems Director for the city, and David Flores, Communications Technician, were tasked with finding the most optimal and economical solution with the use of federal grant dollars.

***"The JTS/Cielo Networks solution gave the city the ability to interface to our legacy systems and the ability to migrate to an IP based infrastructure one component at a time."***

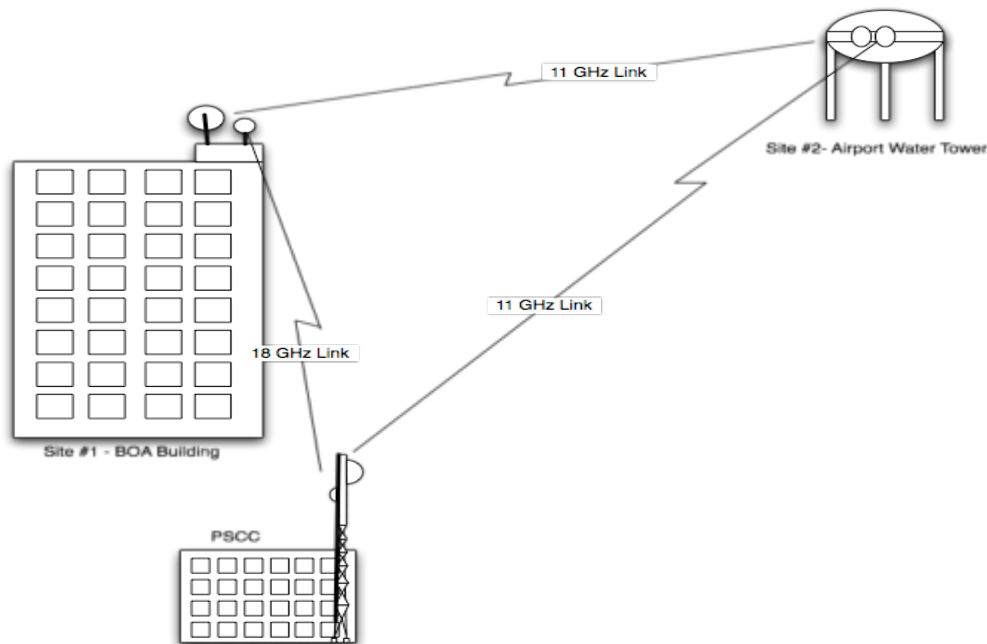
**David Flores**  
**Communications Technician**  
**City of Midland**

## Solution

JTS, Cielo Networks authorized VAR partner for the south central-USA, & Cielo Networks, deployed a 600 Mbs SkyLink GigE + NxT1 ring network for the city, connecting critical public safety trunked 2-way radio networks and other city government sites including Midland International Airport. The T1 ports on the SkyLink SDIDUs provided a TDM interface to the Midland's existing EDACS system with 4-wire E&M circuits in channel banks.

Alternative approaches as far as redundancy/hot standby were considered, but the city ultimately selected a ring approach architecture would be the most reliable solution. Two (2) licensed 11 GHz paths, and one (1) licensed 18 GHz path were configured, with multiple licensed channels on each link due to the throughput requirements.

The Bank of America building, given its height and available roof space, served well as one of the nodes, as did the existing 70 foot communicates tower adjacent to the PSCC building and the catwalk on the airport water tower.



JTS also installed and configured three routers at each node for re-direction of traffic flow in the event of a node outage.

## Benefits

With the ring architecture, not only was the city able to have a redundant path for the Ethernet traffic, but ring protection of the T1 circuits as well. Taking advantage of Cielo Network's SkyLink built-in T1 add-drop capability, JTS was able to configure the SkyLink IDU to support T1 ring protection providing a redundant path for the T1s.

JTS and Cielo Networks, in deploying the SkyLink product, were able to provide Midland an economical solution to their current TDM needs with their public safety network, as well as a forward-looking solution for future bandwidth-hungry IP based requirements. The city will reap from a significant return on investment for years to come.

***"The solution provided an abundance of bandwidth / functionality which will aid in our future growth without having to invest in major equipment upgrades," David Flores noted.***

## **About JTS**

JTS ([www.jts.net](http://www.jts.net)) is a full service company involved in building network infrastructure to support your voice, video, and data needs. We specialize in unlicensed and licensed microwave radio installation services. With over 20 years of experience in electronic systems integration, we can provide services to help you quickly and economically reach your networking and systems goals. We pride ourselves on our flexibility and rapid deployment.

## **About Cielo Networks**

Cielo Networks ([www.cielonetworks.com](http://www.cielonetworks.com)) is a rapidly growing Texas-based company that provides telcos, municipalities, counties, and state entities with a high performance scalable capacity licensed band point-to-point digital microwave radio solution with outstanding IP and TDM payload flexibility. Very uniquely, all of their component subcontractors are U.S. companies. The fact that most of their customers rely solely on Cielo Networks for their licensed microwave radio requirements is clear evidence of superior total value consistently delivered. In February of 2009, Cielo Networks received the U.S. Department of Agriculture Rural Development Telecommunications "Buy American" Program acceptance and listing.