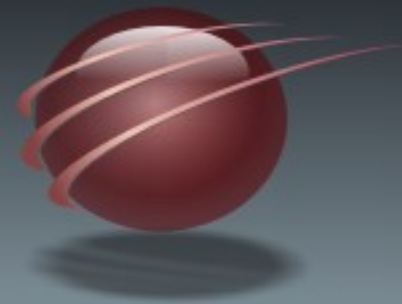


# CommDEX Customer Solution Case Study



## How a New Critical Communications System was implemented at a Record Pace in Louisville, KY

### Overview

**Country:** United States

**Industry:** A city; southeasterly situated along the border between Kentucky and Indiana, the Ohio River, in north-central Kentucky.

### Customer Profile

Louisville, covering over 385 square miles, is the largest city in Kentucky. On November 7, 2000, voters in Louisville and Jefferson County approved a referendum to merge into a consolidated city-county government named Louisville-Jefferson County Metro Government (official long form) and Louisville Metro (official short form), which took effect January 6<sup>th</sup>, 2003. As of the 2010 census, Louisville was the 17<sup>th</sup> largest city in the nation and had a population of 741,096.

### Business Situation

Louisville's current communications system, which was built in the 1970s and approaching 30 years of service, needed to be replaced in order to maintain reliable communications between Louisville Metro First Responders, as well as interoperability with surrounding counties and state and federal agencies. Louisville received a grant to fund the project; however, the communications system needed to be fully functional quickly, as the grant funding was set to expire in just four months.

### Solution

CommDEX was selected to lead the effort to manage this critical project, based on its capabilities, and track record of successfully managing complex integrations.

### Benefits

- Designed and built system at record pace to save the grant funds from expiring.
- Provided enhanced coverage of the Metro area, in addition to, the existing VHF and UHF radio system coverage areas and the downtown Louisville Metro area.
- Provided emergency responders with enhanced in-building coverage in the high density buildings in downtown metro areas of Louisville.
- Created a communications network gateway to interconnect to surrounding counties, as well as state and federal agencies.

### THE SITUATION

On January 6<sup>th</sup>, 2003, the City of Louisville and Jefferson County were merged into one, becoming Louisville-Jefferson County Metro. The existing communications system built in 1970 could no longer adequately provide the reliability, coverage and seamless communications required by the metro area's first responders. Louisville Metro wanted to enhance the existing system to provide better talk-in coverage for its consolidated first responders, as well as interoperability with federal and other outside agencies. It applied for and received an Interoperability Grant from the COPS Interoperable Communications Technology Program.

However, the system needed to be designed, built and operational within four months to avoid losing critical grant funding. With three new communication sites to integrate, some challenging site locations, and the radio and microwave equipment necessary to tie it all together, the four month schedule was extremely aggressive, if not nearly impossible.

### THE SOLUTION

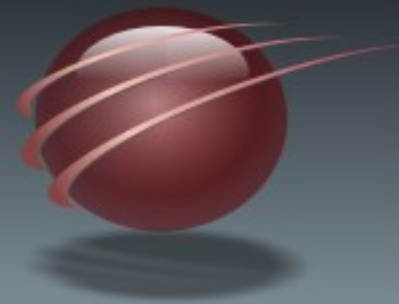
CommDEX was selected as the project lead for managing the design, staging, site development, tower construction, antenna installation, equipment relocation, implementation, testing and training for the new 14 site land mobile radio system, as well as cutover of existing radio system.

Focused project management, creative tower solutions, and strong system design allowed CommDEX to deliver interoperable communications to Louisville First Responders, government agencies, and surrounding jurisdictions - ahead of schedule and without interruption to current operations.



# CommDEX

## Customer Solution Case Study



### Fast Track Project Management

Knowing that the project was a race against time, CommDEX immediately put together a fast-track schedule, staffed the project, secured critical resources and materials, leveraged proven processes and repeatable methodologies, and hit the ground running. Detailed schedule, project tracker, risk analysis, Communications Plan, and Quality Management Plan were put in place within a week of the project start to ensure that none of the critical elements of the project was overlooked. Stakeholder commitments were secured to the Plan, and all issues were tracked in daily huddle so that nothing derailed the project schedule.

### Creative Tower Solutions

Due to space constraints and accessibility issues at the hill top site, a creative solution of shelter assembly at the site was conceived. Power hookup required directional boring down a steep hill to access the transformer located 800 feet away from the site. In addition, the existing tower was found to be structurally inadequate to support the proposed loads requiring a structural upgrade to allow co-location of new antennas. On the site located atop a 29-story building within the city, renovations were done to accommodate new equipment and antennas had to be elevated above the rooftop to ensure unobstructed microwave paths. All site designs were completed within three weeks of project start-up and the construction phase was completed within two months to allow time for system install/test.

### Robust System Design

As part of the system design, the existing EMA 800 MHz trunked radio system was upgraded to a APCO P-25 compliant three site, five channel, 800 MHz trunked, digital voice radio system to provide for additional Public Safety communications capabilities. The proposed trunked system provided improved spectrum efficiency (via 12.5 kHz bandwidth operation), digital modulation, and enhanced audio quality. All the radio sites were interconnected using a four-hop OC3

(155Mb/s) ring digital microwave radio system. At the consolidated emergency communications center, the furniture and CENTRACOM Gold Elite Consoles were installed and configured for the 27 positions.

### Enhanced Interoperability Solution

Voice over Internet Protocol (VoIP) technology gateways were used to provide an interoperability platform to bridge the existing UHF/VHF/ 800 MHz channels currently used and the new 800 MHz Radio System, thereby providing continuous radio interoperability to all emergency first responders. The deployment of an IP-switched Radio Network provided the VoIP expandability solution for multi-agency, multi-jurisdiction interoperability.

### Summary

Normally an initiative like this would have taken eighteen months to complete. Leveraging CommDEX's expertise, the system went live by the funding deadline (within four months) with three weeks to spare. The transition to the new system was performed with zero interruption to the existing facility and operations.

