

Cell phones and wireless communications are ubiquitous, and people expect to be able to use their cell phones wherever they work and congregate. Large organizations heavily rely on cellular and other wireless communications in their day-to-day communications, as well as for emergency communications.

As most of us know, these devices use radio frequency (RF) technology to send and receive the communications signals. RF signals can penetrate some materials, such as glass, but are not able to penetrate through thick materials, such as poured concrete and metal the materials used in constructing most buildings. The result is that many large buildings are obstructions that prevent cellular and radio signals from getting to the people working in the buildings.

TCS is providing solutions that solve these problems in buildings. These solutions bring the cellular and radio signals from outside and distribute them throughout the building so there is no loss of communications using cellular and radio devices within the building.

Problem

The Department of Defense (DoD) was in need of a solution to enhance cellular network coverage for all major cell phone carriers within one of their facilities in Washington, D.C. because cellular communications were unreliable in the building. Cellular signals were not reaching many areas of the building. Because people rely on their cellular devices for communications, the security officer in the building identified the absence of cellular coverage

as a security risk for personnel working in the building and for personnel visiting the building. An in-building distributed antenna system (DAS) was needed to repeat and, if necessary, amplify the signals being received on the outside of the building, and redistribute the signals throughout the building and adjacent underground parking garage.

Solution

TeleCommunication Systems, Inc. (TCS) designed and installed a distributed antenna system (DAS) to enhance the in-building wireless communications for the DoD. The DAS includes an array of donor antennas installed on the roof of the facility, repeater equipment located at various (critical) points throughout the building, and a number of coverage antennas discretely located throughout the building.

The DAS enables the sending and receiving of cellular and radio signals within the building. The DAS picks up the required cellular and public safety signals at the roof and redistributes the signals throughout the building. The DAS also picks up cellular and public safety signals within the building and redistributes them through the roof antennas to the outside networks being operated by the cellular carriers and public safety organizations. The DAS that TCS installed includes radio signal coverage for public safety radio signals, thus allowing public safety networks required in the building to be available within the building for safety and security.

Results

Where cellular and radio signals were not available inside the DoD building, there are now signals. People in the building can use their cell phones and two-way radios for communications with people within the building, as well as to communicate with people outside of the building.

As a result of the successful installation and implementation of the DAS In-Building Wireless Solution, wireless signals from all major cell phone carriers are now available to all cell phone and public safety radio users in the building. Furthermore, the system is self-contained and functioning, requiring no management and minimal yearly maintenance.

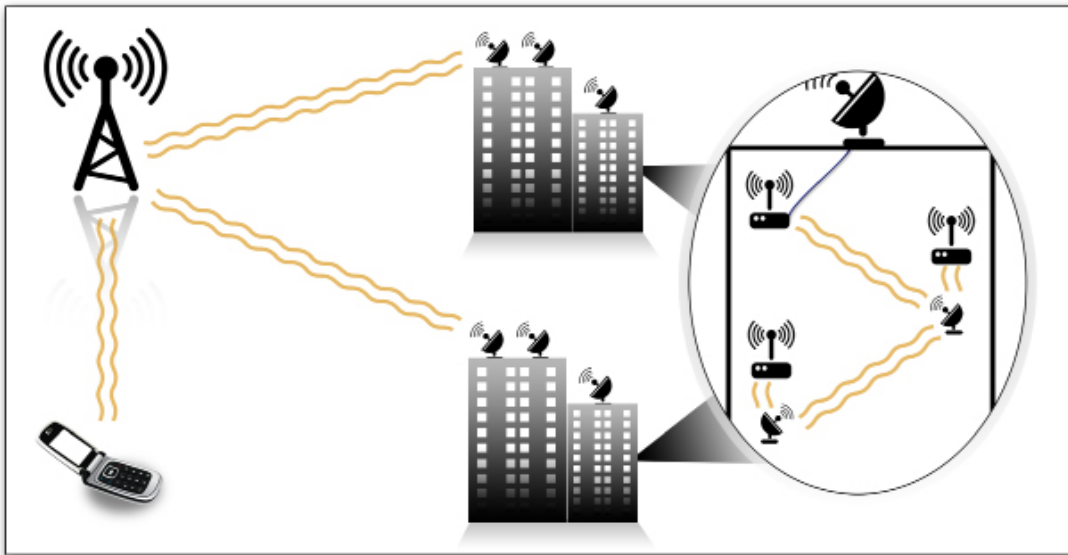


Figure 1: In-Building Wireless System

Your Trusted Partner

Since 1987, TCS has produced wireless data communications technology solutions that require proven high levels of reliability. TCS provides secure deployable communication systems, wireless and VoIP E9-1-1 network-based services, engineered satellite-based services, and commercial location applications using the precise location of a wireless device. Headquartered in Annapolis, MD, TCS is a leading provider of fixed and deployable communication solutions for government customers and mobile operators including the U.S. Army, U.S. Air Force,

U.S. Marine Corps, U.S. Navy, Unified Combatant Commands, U. S. Department of Homeland Security, Internal Revenue Service, U.S. Department of State, and other federal agencies. TCS' SwiftLink® products are designed for highly reliable, on-the-quick-halt and on-the-move secure communications in some of the world's most hostile and remote locations.

Learn more about TCS and our complete suite of products and services by visiting www.telecomsys.com. For general inquiries, e-mail info@telecomsys.com or contact us at 1.800.307.9489.



TCS • 275 West Street, Annapolis, MD 21401 USA • Toll Free: 1.800.307.9489 • Outside US: +1.410.263.7616 • www.telecomsys.com

Copyright © 2009 TeleCommunication Systems, Inc. (TCS). All rights reserved. Enabling Convergent Technologies® is a registered trademark of TCS. All other trademarks are the property of their respective companies. Information subject to change without notice. | NasdaqGM: TSYS | 071509