

DHS Science and Technology Directorate

Chicago Long Term Evolution (LTE): Pilot Testing Performance of Integrated Video Technology on Public Safety Broadband

Integrating Chicago's Next-Gen Public Safety Technology in a High-Density, Active Urban Area

Chicago is a leader in the use of law enforcement technologies. Their world-class physical video surveillance system ties in video streams from more than 25,000 municipal and partnering organization cameras—as well as from crime mapping, analytic and sensor-based technologies, like automatic gunshot detection. This information simultaneously feeds into the operation center via wireless broadband where services and emergency response coordination efforts occur. Chicago is also considering additional video streaming technologies to allow police officers to view live camera feeds in the area of an incident, streaming in real-time.

Kick-started with support from the U.S. Department of Homeland Security (DHS) Science & Technology Directorate (S&T) First Responders Group, Chicago is exploring the potential benefits these broadband-enabled technologies can bring through a Chicago LTE pilot project. The project integrates technologies—currently deployed across different areas of the city—into a single high-density, high-activity urban police district in order to:

- Evaluate, document and analyze video quality and broadband network impacts of pilot integration and to baseline broadband capabilities and
- Demonstrate how technology integration over public safety broadband can deliver police and emergency management personnel more information—faster, and with more reliability than before.

Streaming Video Surveillance Technologies Over the 700MHz Public Safety Broadband Spectrum

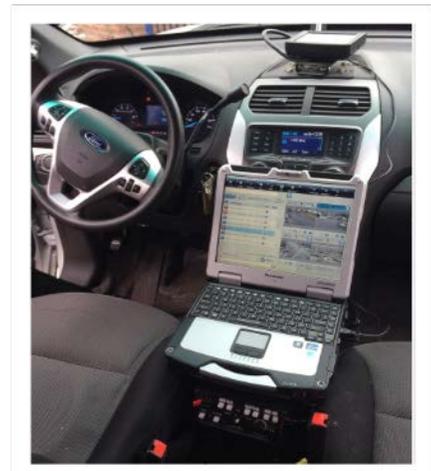
The Chicago LTE pilot is a joint effort between S&T, the City of Chicago Office of Emergency Management and Communications (OEMC), the Chicago Police Department (CPD), Purdue University's center for Visual Analytics for Command, Control and Interoperability Environments (VACCINE)—a DHS center of excellence—and the Motorola Corporation. In November 2014, the city gained temporary access to the 700MHz public safety broadband spectrum from the Federal Communications Commission to support the effort. Approximately 15 mobile police units are outfitted so officers can receive and send video and data from these surveillance, sensor-based and analytics

technologies using mobile Portable Data Terminals and Smart Phones. VACCINE is working with OEMC, CPD and S&T to test and document video and network capabilities, transmission quality and network saturation levels over several months, using real-world use cases.

Benefits of the Chicago LTE Pilot

The Chicago LTE pilot leverages the city's existing investments and infrastructure to allow first responders to see what happens if they are in an urban area with high-speed, real-time access to a variety of law enforcement video information all at once over public safety broadband.

From national, regional and jurisdictional perspectives, this effort will yield a lessons learned document that can inform efforts of other, interested jurisdictions. For Chicago, this pilot serves as a proof of concept for the design and implementation of a permanent solution for the city.



Mobile Portable Data Terminal

Next Steps

Formal pilot testing launched February 2015, and lasts approximately 12 weeks. OEMC, CPD and S&T are working with VACCINE to develop a final lessons learned document that will share pilot methodology, test results and insights gleaned about the potential benefits public safety broadband can bring to Chicago and similar jurisdictions. The document is expected to be published on www.firstresponder.gov by summer 2015.

Post-pilot, CPD will continue to integrate and test additional technologies through the duration of public safety broadband access.