



On the same frequency

Long-term evolution (LTE) 700 MHz broadband and what it means for Texas EMS responder communications

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700 MHz public safety LTE broadband = High volume of information + rapid speed

Long-Term Evolution (LTE) 700 MHz broadband interoperable communication capabilities will enable public safety responders to receive and transmit greater amounts of mobile data and video at a much faster speed. Currently, public safety responders are able to share and obtain only small amounts of data and video at unacceptably slow speeds. With LTE broadband technologies, responders will be able to receive and send large amounts of data and video at higher speeds. (At present, LTE does not provide mission-critical voice communications capability, so public safety agencies will continue to operate in the existing “land mobile” communications environment for the foreseeable future.)

The difference in data volume between current capabilities and emerging LTE broadband wireless is analogous to water coming out of a small garden hose compared to water gushing out of large fire hydrant. A bigger pipe means more volume.

With LTE, responders will be able to more effectively:

- Transmit and view high-quality, full-motion streaming video for the purposes of:
 - Tactical operations (EMS mass-casualty events, fire scenes, police operations, other critical incidents, etc.)
 - Surveillances (crime hot spots, SWAT incidents, etc.)
- Download and view large-sized building plan files on the way to incidents, and even display building plans on the face shields of firefighter helmets
- Wirelessly monitor geographic locations,

heart rates, blood pressures, and breathing rates of responders during an incident

- Transmit real-time video and patient vital signs from an incident scene to an incoming helicopter, back-up ambulances, and hospitals
- Enhance situational awareness by providing real-time data and using interactive maps

What is Texas doing with 700 MHz LTE?

Texas Department of Public Safety has become a national leader in pursuing early deployment of public safety LTE broadband, and has identified the following program objectives:

- To create an effective 700 MHz interoperable mobile public safety broadband network, which, when fully deployed, will enable public safety users operating in Texas to be safer, more responsive and more effective in saving lives and property.
- To enable early deployments of mobile public safety broadband network layers in Texas.
- To facilitate an open, standards-based (3GPP) LTE environment that supports a healthy, competitive multi-vendor procurement environment for network infrastructure and terminal devices, while enabling LTE suppliers to innovate and produce sustainable products and services.
- To support the eventual deployment of a nationwide 700 MHz interoperable mobile public safety broadband network.
- To pursue public/private partnerships in order to leverage existing commercial capabilities and associated economies of scale.

Federal Communications Commission (FCC) broadband waiver

The 10 MHz block of 700 MHz band frequencies set aside for public safety broadband use is licensed to the Public Safety Spectrum Trust (PSST). For a state, or other jurisdiction, wishing to construct and operate a broadband system in this band, the FCC requires such entities to petition the FCC for a “waiver” of the FCC broadband rules. If granted, a waiver requires the waiver recipient to enter into a lease with the PSST so that the waivee may then legally implement an LTE broadband system within the waiver recipient’s specified geographic area. On May 12, 2011, the State of Texas (by way of TxDPS) became the 22nd public safety broadband waiver recipient in the United States.

Another condition of the waiver to the State of Texas is that Texas was required to prepare an *Interoperability Showing* to the FCC to ensure that planned Texas deployment is consistent and compliant with the Commission’s interoperability goals. TxDPS has worked closely over the past months with the FCC’s Public Safety and Homeland Security Bureau staff on the *Texas Interoperability Showing* in an effort to get it as perfect as possible, as it likely will become a State-level model for the rest of the country. TxDPS is seeking prompt FCC approval, meaning that Texas would become the first of the existing broadband waiver recipients to have achieved that status. If all goes as planned, “availability of public safety broadband service” is projected to occur in the Harris County (Houston) area around August 1, 2012.

Harris County and potential other TxDPS broadband partners

TxDPS is partnering with Harris County on construction of the first phase of the Texas leg of the single nationwide LTE public safety broadband network through use of a federal port grant to Harris County.

As stated in its *Interoperability Showing*, Texas supports a multi-vendor environment and intends to have a recommended technical requirements document (for local jurisdiction procurement use) developed by December 1, 2011. Also by that date, DPS intends to have an intra-state application process finalized and published for use by jurisdictions wishing to host public safety LTE broadband layers in given geographic areas of Texas.

Texas goals/Next steps

DPS will ensure early public safety LTE deployments in the state are developed to be consistent with the intended overall nationwide plan for interoperability and will serve as the State’s single interface with the Public Safety Spectrum Trust (the holder of the nationwide public safety broadband license) and the FCC Emergency Response Interoperability Center. DPS also is monitoring pending legislation in Congress that, if passed, would create a Public Safety Broadband Corporation to oversee the build-out of a nationwide 700 MHz interoperable mobile public safety broadband network using the existing Public Safety Spectrum Trust licensed frequencies (763-768 MHz and 793-798 MHz), which have been leased to DPS, as well as the “D Block” frequencies (758-763 MHz and 788-793 MHz), using several billion dollars from proposed radio frequency “incentive auctions.” Advocates argue that without the combined 20 MHz capability, current and future public safety mobile broadband needs cannot fully be met.



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