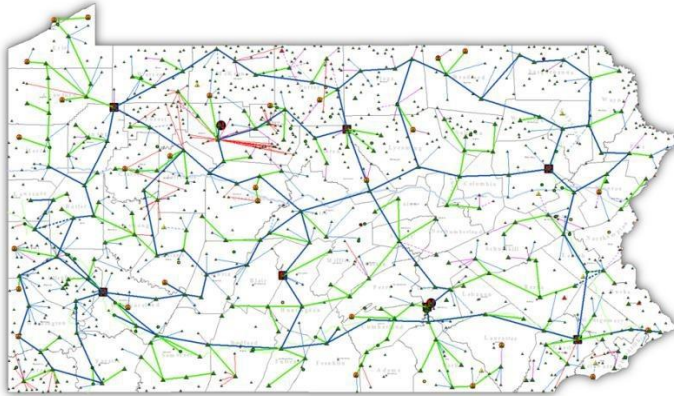


Pennsylvania Statewide Radio Network

Public Safety Radio for Pennsylvanians

PA-STARNet: Overview and Fact Sheet



Infrastructure: 254 high-profile towers, 760 low-profile microcells.

Coverage: Mobile radio coverage is greater than 95% signal strength in 65 of 67 counties.

Traffic: 25,756 subscriber devices are authorized for system use, logging an average of 141,640 calls (push-to-talks) daily.

Users: 22 commonwealth agencies, both houses of the legislature, county and municipal agencies, and many others.

Interoperable: Gateways support voice communications from state agencies to all county 911 centers.

Technical highlights:

- Voice and data traffic freely mix in a robust Internet Protocol (IP) network throughout the state.
- System network backbone links sites through a statewide, high-availability microwave network using MPLS, with secure network access both at a primary gateway and at a remotely-located alternative gateway.
- Interoperability technology, including external radio system gateways, internetworking, and frequency band overlays.

PA-STARNet infrastructure:

- High-profile radio communication sites across the state, which uses smaller microcell sites to support the system.
- Seven Regional Operations Centers and a Network Operations Center (NOC) monitor and administer network operations and control voice and data communications; also included is a remotely-located backup NOC for recovery and continuity.

Examples of system use by agencies and partners:

- Pennsylvania Emergency Management Agency—More than 600 mobile, V-TAC, hand-held, and fixed-location radios are used to coordinate with county 911 centers as well as multiple state agencies.
- Department of Conservation and Natural Resources—Remote locations are served by a hybrid system that uses a VHF overlay and supports 2,160 mobile, hand-held, and fixed-location radios.
- FirstEnergy Corporation—Approximately 3,180 subscriber radios support field technicians in utility maintenance operations.
- Area Transportation Authority of North Central Pennsylvania—189 mobile radios in rural transportation vehicles support public safety services such as emergency evacuation and medical transport.

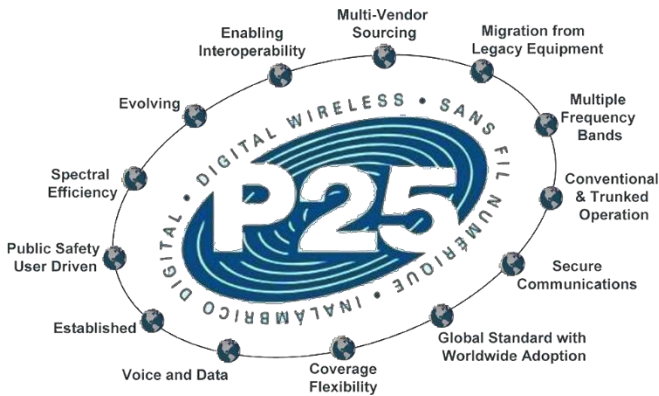
Operation: The Statewide Radio Network Division, Bureau of Communications and Information Services, Pennsylvania State Police, administers the development, operation, and maintenance of PA-STARNet, as per Management Directive 245.15.

Background: Legislative Act 148 (1996), provided funding for a communication and information infrastructure throughout this Commonwealth for transmission of voice and data communication connected by a digital microwave system to form a statewide mobile radio network. Objectives of the system included: replace multiple incompatible, aging, mobile radio systems in use by the commonwealth with a single, centrally-managed statewide system; provide system coverage of at least 95% by county throughout Pennsylvania for mobile radio communication; make spare system capacity available to county and municipal agencies. Milestones achieved included: completed factory acceptance testing for radio hardware and controller software in 2003; completed 30-day system acceptance testing in 2010.

Pennsylvania Statewide Radio Network

Public Safety Radio for Pennsylvanians

PA-P25: Overview and Fact Sheet



Infrastructure: 85 VHF sites, 30 800-MHz sites

Fully Operational: 06/30/2021 (Final Statewide Acceptance)

On October 3, 2016, the P25 Land Mobile Radio (LMR) contract was awarded to Motorola Solutions to upgrade from a proprietary technology to P25 public safety open standards. The cost to upgrade the statewide land mobile radio infrastructure is \$44.5 million. All previous investments in high profile radio towers and the statewide microwave network will continue to be leveraged. Due to procurement challenges, the initiative to upgrade the LMR system was delayed. However, this project remains a priority for the Commonwealth and is on an aggressive timeline.

Pilot I

Pilot 1 Detailed Design Review	Completed
Pilot 1 Approval of detailed design documentation	Completed
Pilot 1 Completion of staging Factory Acceptance Test	Completed
Pilot 1 Delivery of equipment and software to PA	Completed
Pilot 1 Installation, programming, and coverage test	Completed
Pilot 1 Start of 60-day Proof of Concept Test	Completed
Final Acceptance of Pilot 1	Completed



Pilot II (2017-2018)

Pilot 2 Detailed design review	
Pilot 2 Completion of staging	
Pilot 2 Delivery of equipment and software to PA	
Pilot 2 Installation, programming, and coverage test	
Pilot 2 Start of 30-day Proof of Concept Test	
Final Acceptance of Pilot 2	12/30/2017



Initial Statewide Rollout Phase (2017-2018)

Initial statewide Detailed design documentation deliverable	
Initial statewide Completion of staging	
Initial statewide Delivery of equipment and software to PA	
Initial statewide Installation, programming, and coverage test	
Initial statewide Start of 30-day Proof of Concept Test	
Final Acceptance of initial statewide rollout phase	06/30/2018



As of June 2017: The Statewide Radio Network Division's P25 project team successfully completed Pilot 1 rollout and coverage testing which verified 97% mobile coverage in Warren County. The number of radio sites required for coverage was reduced from 32 to 3 and will eliminate approximately \$164,000 in tower rental costs in the future.