

Testimony by Harris Corporation

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Before the Senate Communications and Technology, Law and Justice, Veterans Affairs and  
Emergency Preparedness, and Transportation Committees

Chairmen Folmer, Pippy, Baker, and Rafferty

Joint Public Hearing on the Statewide Radio System





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Good morning Chairman Rafferty, Pippy, Folmer, Baker and members of the committees.

**Harris Corporation** appreciates the opportunity to speak with you today about our 12-year partnership with the Commonwealth of Pennsylvania and our ongoing support for your critical communication needs. The original statewide radio project was distributed among 4 primary suppliers and the Commonwealth served as the project's general contractor. The other 3 suppliers to the state provided critical system build-out in the areas of Towers, Microwave and Consulting. Only the radio equipment portion of the statewide project was signed in 1999 with M/A-COM, Inc., then a division of Tyco Electronics, and had an original contract value of \$95M. Several years later, the Commonwealth amended the contract to add \$40M for the purchase and delivery of additional infrastructure equipment. In 2009, Harris Corporation purchased the Public Safety and Professional Communications group from Tyco Electronics and continues to provide maintenance and site construction services to the Commonwealth of Pennsylvania

Harris Corporation is an international communications and information technology company serving government and commercial markets in more than 150 countries. It is one of the only companies that specializes in advanced technology for capturing, aggregating, distributing and analyzing any type of communications or information, including voice, video, data and imaging. Harris is a known leader in several key areas:

#### DEFENSE COMMUNICATIONS

To understand our deep experience in this marketplace, it is important to understand our background. Harris Corporation is the leading supplier of tactical radios to the U.S. Department of Defense and NATO, ensuring that soldiers are always connected in the most demanding environment of a networked battlefield. Also, Harris is supporting the U.S. Navy on the Navy Marine Corps Intranet, which is the largest managed network in the world and connects more than 700,000 users and supports ongoing communication that reaches 100 million emails per month.

#### CIVILIAN GOVERNMENT

Harris designed and manages the largest and most reliable non-DoD U.S. Government communications network. The Harris-built Federal Aviation Administration Telecommunications Infrastructure provides voice, data and video communications for nearly 50,000 FAA employees and supports the critical information that enables the travel of more than 2 million passengers a day.



## PUBLIC SAFETY AND PUBLIC SERVICE

Some of the largest public safety systems in North America have been designed, built and supported by Harris. These systems provide lifesaving communications for thousands of agencies and millions of users, and meet the requirements of a wide variety of terrain and configuration challenges. Harris transportation and transit data networks help airport operations provide safety and security to passengers in some of the world's largest airports, and an integrated voice and data network from Harris helped move 26 million passengers through the Vancouver regional transit authority during the 2010 Winter Olympic Games. Harris provides critical communications systems to many of the nation's utilities, including coverage over 11 states and 250,000 square miles. Harris security technology provides secure frequency jamming avoidance technology to nuclear power plants.

## SATELLITE COMMUNICATIONS

Harris owns and manages the largest global satellite network in the world, with teleports on six continents that serve customers in 140 countries. Harris delivers reliable communications to every ocean region using the industry's largest and most comprehensive platform of satellite and terrestrial services. More than 400 vessels navigating the seas worldwide rely on Harris turnkey voice, video, administrative data and Internet applications.

### THE STARNET SYSTEM – *10 years of uninterrupted network service*

Harris is a proud partner in the development and deployment in Pennsylvania of one of the largest public safety systems in the U.S. The STARNet system remains one of the nation's most advanced systems to deliver voice and data in a spectrum efficient manner that exceeds even the P25 standards. Importantly, the core statewide network has had no unscheduled interruptions in service during its more than 10 years of operation. The system architecture not only provides voice and data on a single radio, but it also provides statewide in-building coverage for every trooper or other agency user who has a vehicular repeater. This capability far exceeds the level of capability provided by mobile-only systems in other states. While other state systems require users to purchase two separate radios to have voice and data capability, Pennsylvania STARNet users need to purchase only one. In other states, user agencies must pay public carrier phone companies each month for data service, but agencies using Pennsylvania STARNet pay nothing for data services. These two advantages alone have saved Pennsylvania approximately \$25M over the last 10 years.

Over the last 3 years, Harris has continued to incorporate system enhancements to the PA STARNet system to improve the operational effectiveness for state agencies. Some of the major enhancements include:

- Deployment of the Statewide UHF Overlay – Supports direct interoperability with local and county government entities as well as entities from outside the state that may be providing mutual aid.
- Deployment of the Statewide P25 Aircraft Overlay – Provides performance capabilities for fixed-wing and rotary aircraft to operate seamlessly with PA STARNet users on the ground.



Agencies such as PSP and DMVA use this capability to allow standard aircraft radio systems to communicate with users on the ground. The core network is uniquely capable of supporting simultaneous P25 in the air and STARNet on the ground.

- Deployment of Statewide VHF Overlay for DCNR – Provides portable VHF communications for every state park and forest district and direct interoperability with other state agencies on PA STARNet as well as federal fire fighter resources that may assist with wildfires.
- Intelligent Highway System Data Radios – Currently being evaluated by the PA Turnpike and other agencies for use with sign controllers and gate access systems. Eliminates the recurring costs associated with public carrier telephone company charges to the Commonwealth.
- Enhanced Backhaul Technologies – Lowers the overall cost for backhauling voice, data and video by eliminating public carrier telephone company charges to the Commonwealth.
- P25 Interoperability and Migration – The core network supports P25 operations through add-on sites such as the Statewide Aircraft Overlay system and Inter-Subsystem Interface for connecting other P25 systems.
- Flexibility for New Technologies – The current network also supports newer, emerging technologies that are shaping public safety communications for first responders. For example, the new 4G broadband LTE network – FirstNet – will be federally funded with \$7B and will be deployed over the next several years across the nation. Among all states, Pennsylvania is in a unique position to benefit from this new capability because the network technology behind STARNet is the same as LTE. This means that Pennsylvania will be able to smoothly and more cost-effectively integrate the newest technology with their existing investment. Pennsylvania will be able to support mission critical voice and data – as it does on STARNet today – and greatly enhance STARNet with very high speed data and video capability from FirstNet. Significantly, all the enhancements listed previously, including Pennsylvania's P25 overlay system, will integrate into the same enhanced statewide network. Harris can also provide the highest level of interoperability between state and local users with its multiband Unity radio technology that simultaneously supports all frequency bands used in the Commonwealth of Pennsylvania.

Further, STARNet will be able to reach out to commercial cellular networks when desired simply by using Harris BeOn<sup>®</sup> technology that allows users on a commercial cellular system to communicate securely with users on the PA STARNet system as well as with those on the new LTE technology. In short, the investment decisions Pennsylvania made over the last decade have saved the Commonwealth tens of millions of dollars in the long run and also prepared it for a cost-effective adoption of new technology that will define the next decade of public safety communications.

Today's STARNet system must meet the challenge of the varied and sometimes extreme terrain in Pennsylvania, which places unique demands on the design of a public safety system. Unlike



commercial cellular systems, public safety systems must deliver a far greater level of coverage. The Pennsylvania STARNet design was a collaborative effort between the Pennsylvania Office of Public Safety Radio Services and (M/A-COM)/Harris. Many decisions were made early on to reduce the quantity of mountain-top tower locations and increase the quantity of more flexible cell site locations. Just to clarify, the mountain-top tower locations provide a broader area of coverage and are "hardened" with microwave backhaul and significant generators. On the other hand, smaller cell site locations are optimal for providing coverage in difficult terrain but are typically equipped with 24 hours of battery backup and often utilize telephone connections for backhaul. Harris is proud of the ongoing reliability of the core network and site equipment, and we believe that the current steps being taken by OPRS to improve the reliability of the connection provided by the telephone linkages will pay dividends in the perception of improved coverage once telephone outages are addressed.

User perceptions of system coverage can also be affected by the quality and frequency of the users' vehicle maintenance program. Harris does not currently maintain any of the agencies' vehicles. Harris has worked with many customers to implement a regular maintenance schedule for their vehicles as well as provide documentation on proper installation techniques to insure peak operational performance.

Sufficient and comprehensive user training also can impact the users' perception of how well a system works. Harris offers a wide variety of classroom and on-line training programs for all of our radio platforms and recommends that users undergo training and refreshment training periodically. The Harris on-line training program was used by PSP and other agencies during the recent roll-out of P7200 portables that were provided the federally-mandated rebanding program. These on-line programs provide the easiest and least intrusive method of delivering training to users and were very effective during this most recent introduction of portable radios.

The PA STARNet system, built on the Harris VIDA technology, has a demonstrated track record of reliability. However, as we have discussed, that reliability can be impacted by a lack of coverage, telephone circuit and power disruptions, infrequent user training and vehicle maintenance. Harris stands behind our equipment and its performance and we continue to evaluate ways to help the Commonwealth improve the overall perception and functionality of the system.

As we have been for more than a decade, Harris remains a committed partner to the Commonwealth of Pennsylvania for the STARNet system. The public safety users and the citizens of Pennsylvania have a cost-effective, reliable and future-ready critical communications system that has saved tens of millions of dollars by eliminating or reducing data charges and redundant radios. And just as important, they have a system that is capable – and ready – to support the new broadband technology for public safety applications. No other state is as well prepared, or as well served, by a statewide communications system.

Thank you. I will be happy to take any of your questions.