

2006 NASCIO Award Submission
Category: Information Communications Technologies

Project:
Commonwealth of Virginia Interoperable Communications:
Improving Communications to Save Lives

Executive Summary

Roadblocks to effective first responder communication have long plagued public safety organizations; in some emergency scenarios, shortfalls in this area have impeded performance of mission critical public safety duties.

The problem often has been framed solely as a technology problem, arising from the inability of disparate vendor's proprietary systems to communicate with others. Historically, public safety organizations at the local, state and federal level have developed individual strategies based on their own needs and resources – and then cannot communicate with each other via voice and/or data during an emergency.

To best achieve much-needed communications interoperability, the Commonwealth of Virginia first reframed the problem. Planners realized that interoperable communications require cooperation more than technology, and shifted the focus to development of a comprehensive, overarching statewide strategy based on partnerships.

The first step was a locally driven strategic planning process, in partnership with the U.S. Department of Homeland Security's SAFECOM Program and the U.S. Department of Justice's National Institute of Justice (NIJ). Statewide focus groups captured local first responder perspectives on the current state, case for change, future state, strategies and barriers. These commonalities were used to drive definition of mission, vision and key initiatives.

A dedicated office, the Commonwealth Interoperability Coordinator's Office (CICO), was established to guide action in 2004. CICO reports directly to the Assistant to the Governor for Commonwealth Preparedness and facilitates development of the state's overarching strategy for communications interoperability.

Since its establishment, the CICO in conjunction with practitioners across the state have accomplished major objectives in pursuit of interoperable communications, including:

- Established practitioner-based Initiative Action Teams to focus on 800 MHz rebanding, common language and operational protocols, technical standards, mutual aid channels, the statewide 700 MHz Plan, and equipment listings on state contracts;
- Distributed over \$4.1 million for local interoperability projects;
- Assisted localities in securing over \$7.4 million in federal interoperability grants; and
- Hosted two Statewide Interoperable Communications Conferences to bring together stakeholders and industry.

The [Commonwealth Strategic Plan for Statewide Interoperable Communications](#) is now the guiding document statewide; its ten-step planning methodology and experience has been adopted and published by the Department of Homeland Security's SAFECOM program as a roadmap to assist other states. Technological, strategic, tactical and cultural change is now being achieved to the benefit of all, including the most important stakeholders - citizens in crisis and the first responders who aid them.

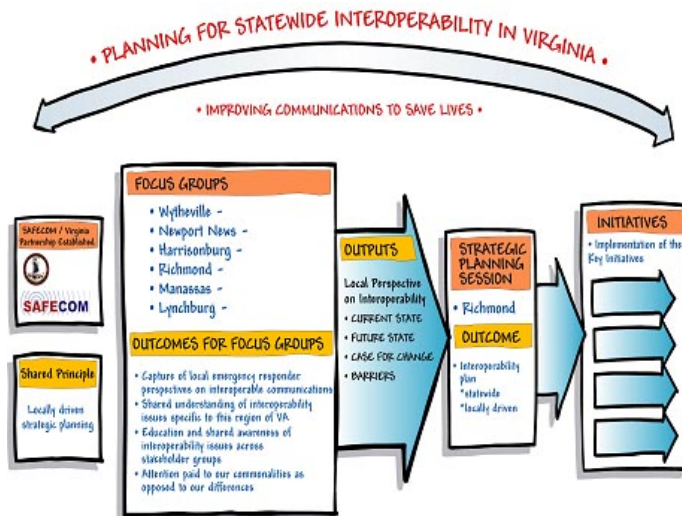
Description of the business problem and solution

In times of crisis, public safety communications can make a bad situation better – or make it worse. Emergency responders from one county may define a code number as an all clear – and another county may use the same number to indicate significant danger. When responders unite to tackle a crisis, these simple practices can become life threatening.

As the need for coordinated disaster public safety response has grown, first responders have prioritized creation of interoperable systems where public safety agencies talk across disciplines and jurisdictions via radio communications, exchanging voice and/or data with one another on demand, in real time, when needed and when authorized.

To achieve a meaningful interoperability solution in Virginia, the Commonwealth first reframed the problem. Planners realized that interoperable communications require cooperation more than technology, and shifted the focus to development of a comprehensive, overarching statewide strategy based on partnerships.

An information-share partnership was formed with SAFECOM, a division of the U.S. Department of Homeland Security, and a locally driven strategic planning process was launched. Six regional focus groups were held beginning in January 2004 to initiate development of a statewide action plan. Stakeholder input came from more than 146 regional and local participants from 39 localities and represented law enforcement, fire, emergency medical services, transportation, IT, communications, public health, forestry, and hospitals.



This locally driven process provided capture of local perspectives and allowed first responders from many different arenas to share problems, needs and successes. This new approach provided significant information, identified commonalities and provided real, actionable goals.

Output from regional focus groups defined the current state, case for change, barriers, and desired future state. A subsequent strategic planning session in Richmond used this information to develop the statewide plan and define initiatives.

A dedicated office, the Commonwealth Interoperability Coordinator's Office (CICO), was established to guide action and facilitate development of the state's overarching strategy. Virginia was the first state in the nation to hire a full time Interoperability Coordinator to focus solely on interoperable communications.

As a direct result of this process, the Commonwealth's first [Strategic Plan for Statewide Interoperable Communications](#) was signed in October 2004. Annual updates and implementation are now required by the *Code of Virginia*. Today, planning, governance, funding, training, exercises, technology and standards are coordinated and standardized across localities and regions in the Commonwealth and with the federal government.

Statewide Agencies Radio System Enabled

One of the most notable of the enterprise interoperable initiatives, the Statewide Agencies Radio System (STARS), now is coming online across the Commonwealth. STARS unites 20 participating state agencies in an upgrade of the existing Virginia State Police (VSP) land, mobile and microwave radio networks. The goal of the program is to create an integrated, seamless, statewide wireless voice and data communications system interoperable with local governments and various state and federal agencies.

A VHF high band digital trunked system with 800 MHz vehicle repeaters allows for some direct interoperability between local and regional 800 MHz systems and provides a patch to all 134 localities. On completion, STARS will consist of 80 microwave sites, 45 land mobile sites, and VOIP, P25 compliant with open architecture for voice and data. STARS provides field responders remote access to law enforcement databases, intra- and inter-agency text messaging, interface with the VSP Computer Aided Dispatch and GPS support for Automated Vehicle Location (AVL). Roll out began with the capital area in December 2005; scheduled completion statewide is September 2009.

STARS positions Virginia as one of first states to employ an integrated Voice and Data (IV&D) land mobile radio architecture that uses the same mobile radio for both voice and mobile communications. The integration of voice and data networks saves the Commonwealth the expense of a separate data infrastructure.

Commonwealth's Link to Interoperable Communications (COMLINC)

The CICO, SIEC and STARS are all coordinating on the COMLINC project that will allow disparate communications systems to communicate using Voice over Internet Protocol (VoIP) technology. COMLINC will allow the localities with different communication systems to communicate and will also allow these localities to communicate with STARS. COMLINC will allow local dispatchers to establish four patches, regardless of what frequency band the system uses, to connect within the jurisdiction or to other localities; one patch to STARS can then connect to the 20 participating state agencies.

Thus far 41 localities have implemented or are in the process of implementing COMLINC. This technology leverages the existing investments in communication systems while also establishing interoperability. This collaborative effort between the CICO, SIEC, STARS and the localities is a testament to the coordination currently taking place in Virginia to improve interoperable communications.

Community of Interest = Community of Excellence

The pursuit of interoperability has produced regular interaction in the first responder community. Practitioners' input is heard, used, and acted upon in the form of the Strategic Plan. Localities and regions now follow the plan and utilize the standards for both long- and short-term activities. This is their plan – they own it, so there is no need to sell it to them.

In addition to annual conferences, the CICO has produced multiple resources for this community of interest. A Web site, www.publicsafety.interoperability.virginia.gov, is used to distribute information about grants, projects and standards. A Listserv enhances communication and online registration has been created for conferences and workshops.

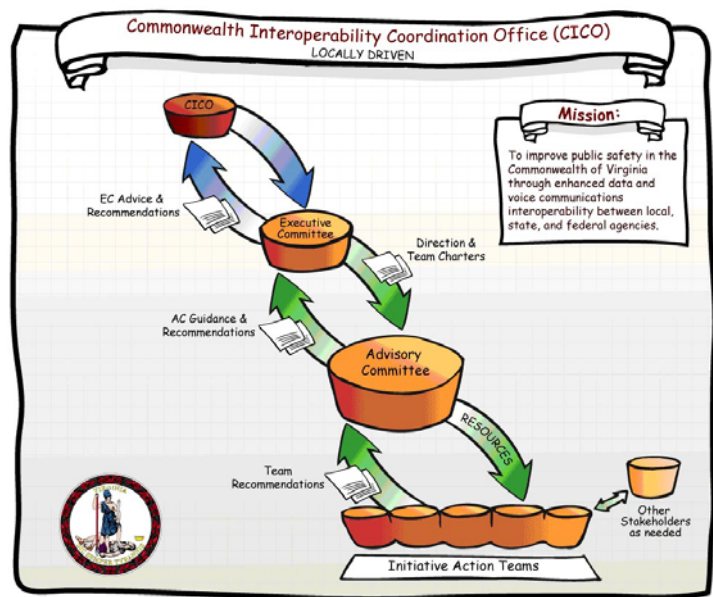
A Lessons Learned Clearinghouse includes reporting from grantees and contact information for local projects. All areas of the Commonwealth are able to benefit when any one region or locality receives funding and/or training. Recently, for example, the Northern Virginia/National Capital region received information and training on cache radio maintenance – which they shared with their colleagues in the Hampton Roads region.

Significance to the improvement of the operation of government

The Commonwealth has created an effective governance, management and communication structure united in pursuit of interoperability. All efforts are based on the experience and needs of the local first responder – an important new approach that provides real, actionable goals.

Virginia is the only state in the nation that has a State Interoperability Executive Committee (SIEC), comprised primarily of local first responders, that conducts a competitive grant process to identify local projects to receive funding. The SIEC is specifically tasked with participating on Initiative Action Teams (IATs), considering policy recommendations and elevating them to executive and legislative decision makers.

The State Interoperability Advisory Group provides recommendations and specific practitioner expertise to SIEC; it staffs and manages IATs and is directly responsible for effective implementation of the Strategic Plan. IATs develop specific tasks for and implement initiatives of the plan; they tap into national, state, and local expertise.



CICO provides overarching collaboration that spans all public safety and state agencies. It builds consensus among public safety disciplines, provides a direct conduit to the Commonwealth's Preparedness Office and Governor, manages knowledge and work, facilitates key meetings, and keeps effort focused on practitioners and their needs.

This locally driven governance structure produces a shared understanding of interoperability issues, capture of local emergency responder perspectives, coordinated educational and planning opportunities, and a common mission and vision. Regular communication and conferences facilitate timely planning and initiatives.

Importantly during this time of rapid technological change, this enterprise governance structure supports localities, regions and state agencies in identifying and obtaining grant dollars. From guiding procurements and developing RFP templates to gathering reporting information from local grantees and evaluating grant proposals for awards, the process ultimately improves public safety. All agencies and localities must comply with and achieve consistency with the Strategic Plan by July 1, 2015 in order to remain eligible to receive state and/or federal funds for communications programs and systems.

The Commonwealth's ten-step planning methodology has been adopted and published by the Department of Homeland Security's SAFECOM program as a roadmap to assist other states. DHS and SAFECOM have also now published a second guiding document, "Lessons Learned from the Commonwealth of Virginia: One Year Later," to further aid interoperable wireless communication development in the states.

Benefits realized by service recipients, taxpayers, agency or state

- CICO develops, distributes and promotes interoperability information for elected officials, responders and citizens.
- SEIC standardizes grant coordination by developing RFP templates and supports localities, regions and state agencies in identifying and obtaining grant dollars.
- Group planning leverages state buying power for products and services.
- Strategic Plan establishes clear, measurable objectives shared by all stakeholders.
- Existing and future communication system investments are maximized by leveraging COMLINC and other VoIP solutions that will allow disparate systems to become interoperable.
- Localities now have a common benchmark, communication channels and an advocate to help them achieve common standards.
- The ultimate benefit is an improved response to citizens in crisis - and the safety of first responders who protect them.

Realized return on investment, short-term/long-term payback

- The Commonwealth Preparedness Working Group (CPWG) recently allocated funding for the statewide plan, marking the first time that Office of Domestic Preparedness funds have been used to implement a statewide interoperability program. \$1.7 million was distributed in local interoperability grants through the SIEC, which solicited, evaluated and prioritized 62 separate grant proposals from localities. 20 localities received up to \$100,000 each to support local interoperability projects.
- In 2005 the SIEC identified six local projects and distributed \$460,500 for local interoperability demonstration projects funded by a NIJ Interoperability Grant.
- The CICO assisted the Virginia Beach Metropolitan Statistical Area (MSA) in obtaining \$6 million in interoperability grants from COPS; the CIC worked with the locality to ensure that applications complied with the Strategic Plan, showed a clear link to STARS and focused on a regional approach that included all localities within the MSA.
- The CICO and SIEC recommended that Region 1 be awarded a \$1.5 million Office of Domestic Preparedness Grant by the CPWG to link 14 of the 25 localities within the region; the project was completed in June 2006.

- The Lynchburg MSA/Region 3 area was awarded \$1,393,894 and the Roanoke MSA/Region 6 area was awarded \$866,570 via U.S. Dept. of Justice COPS FY 2005 grants to implement COMLINC. The CICO worked with both localities during the grant submission process.
- The CICO and SIEC have focused on maximizing existing and future communication system investments by leveraging COMLINC and other VoIP solutions that will allow disparate systems to become interoperable.
- CICO facilitated meetings between STARS and Amelia County prior to the county building a VHF High Band communication system. These meetings resulted in Amelia County becoming a primary user of STARS, producing a \$7 million savings for Amelia County.
- In June 2006 Governor Kaine announced \$2 million in federal funding to support 28 more local interoperable communications initiatives evaluated by the SIEC through the State Homeland Security Grant Program; localities will receive funds in July 2006. Of those 28, three local interoperability projects were funded at \$75,000 each and await more information before being fully implemented.

By working together, the public safety community has placed Virginia on a secure path to interoperable communications; the long-term payback will be provided to citizens and first responders in every public safety response.