

Commonwealth Link to Interoperable Communications (COMLINC) EVALUATION



NOVEMBER 2018

COMLINC EVALUATION

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As the project progressed it became evident the heroes of this report are the VSP communications technicians who have faithfully kept an un-resourced system viable through grit, imagination, and a dedication to serving the needs of public safety in the Commonwealth.

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EXECUTIVE SUMMARY

Radio communications interoperability safeguards and saves lives and property by closing gaps inherent in public safety all-hazard communication networks. Public safety all-hazard communication networks comprise all public and private stakeholders with interest in the public's safety and prosperity. COMLINC is Virginia's interoperability solution with the capability to establish "links" between disparate public safety radio networks.

The 9/11 commission report identified interoperability failures as a primary culprit for the loss of hundreds of citizens and first responders. Subsequent disaster reports have consistently identified interoperability failures. Virginia listened and took action. The General Assembly recognized and codified the Commonwealth's commitment to interoperability.

The Commonwealth's interoperability solution is COMLINC and RIOS is the technology that powers that solution. However, it was resourced in an ad hoc fashion using a number of funding sources and fell short of full implementation. Since its inception, COMLINC has not received adequate sustainment funding or resources, resulting in technology obsolescence, inattention to training, and a steady decline in effective usage. In its current state the system is no longer supportable and near complete collapse.

COMLINC modernization, sustainment, and expansion is the solution. This report provides an explanation of COMLINC, identifies system strengths and weaknesses, and presents scalable programmatic and fiscal solutions to re-establish the radio interoperability requirements set forth in § 2.2-222.2, Code of Virginia.

Ownership for COMLINC modernization, sustainment, and expansion should reside at the state government level in order to ensure equipment maintenance and accountability. COMLINC resourcing should not burden already fully encumbered localities by placing them in a position to assume greater risk in local operability in order to resource statewide interoperability.

Summary Report Recommendations

- *Governance:*
 - Institute a permanent standing COMLINC Governance Council from SIEC membership with authority and responsibility to advocate for localities, as well as set and enforce SOP, technology, training, and usage standards.
 - Designate Virginia State Police as the Operational owner of COMLINC.
 - Expand availability to all public safety all-hazard stakeholders.
 - Institute a stakeholder Memorandum of Understanding process.
- *SOP:*
 - Institute statewide standing operating procedures.
 - Ensure that COMLINC SOP, technology, training, and usage aligns with and complements the National Incident Management System (NIMS).
- *Technology:*
 - Modernize the COMLINC technology platform.
 - Resource COMLINC modernization and sustainment costs from state funds.
 - Align COMLINC cyber security standards to industry and state requirements.
 - Ensure adequate locality internet capacity to support COMLINC.
 - Align technology with human factors.
 - Increase sustainment human resources

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- *Training & Exercises:*
 - Establish a statewide training program and standards.
 - Incorporate COMLINC into state exercise plans.

- *Usage:*
 - Set statewide usage requirements.
 - Apply imagination and initiative.
 - Assess Dispatcher staffing requirements.

If properly modernized and sustained through state funding, COMLINC will fulfill the interoperability requirement set forth in § 2.2-222.2, Code of Virginia.

1 INTRODUCTION

In August 2015, a reporter and a photojournalist were shot and killed while broadcasting live. The suspect fled the scene and travelled the highways of Virginia for five (5) hours and nearly two hundred (200) miles, crossing multiple jurisdictions before he was stopped. His estimated movements were passed to responders via telephone landline communications. The gaps inherent in this method of communication allowed the perpetrator to remain ahead of law enforcement as he crossed from jurisdiction to jurisdiction. The denial of effective situational awareness was the perpetrator's greatest advantage and the public's greatest peril. Effective use of COMLINC would have enabled jurisdictions to immediately link their efforts for coordinated awareness and response.

Charlottesville 2018. Following the tragic violence and public safety disruption associated with the Unite the Right (UTR) rally of 2017, Commonwealth all-hazard planners and responders approached threats associated with the one (1) year anniversary of UTR with shared vision and unity of effort. Their plans and structure were governed by the National Incident Management System (NIMS). Leaders leveraged COMLINC to complement that structure and enable a highly complex communications plan that bridged every public safety all-hazard organization with simplicity and ease of use. It facilitated unprecedented coordination, shared situational awareness, and unity of effort. COMLINC was a critical element of the nationally recognized successful management of a clear and present threat to public safety—exactly as the General Assembly has envisioned and directed.

The complexity of all-hazard¹ operations and the nature of the current threat environment demands an interoperability² solution for multijurisdictional operations. While an interoperability system is not expected to be the day to day means of communications among all-hazard responders and planners; it can be the single most important thread that ties them together in times of disaster.

Understanding this need, the Code of Virginia articulated the importance and urgency of statewide interoperability:

§ 2.2-222.2. Additional duties related to review of statewide interoperability strategic plan; state and local compliance.

The Secretary through the Commonwealth Interoperability Coordinator shall ensure that the annual review and update of the statewide interoperability strategic plan is accomplished and implemented to achieve effective and efficient communication between state, local, and federal communications systems.

All state agencies and localities shall achieve consistency with and support the goals of the statewide interoperability strategic plan by July 1, 2015, in order to remain eligible to receive state or federal funds for communications programs and systems.

In 2007, the Commonwealth determined that to meet § 2.2-222.2, Code of Virginia, an interoperability strategy must be developed. Commonwealth Link to Interoperable Communications (COMLINC) was established and intended to be a reliable interoperability solution to provide or improve communication between state and local responders, using disparate radio systems, during an emergency response. COMLINC has since been realized as the singular

¹ <https://vacode.org/44-146.14/> To provide for rendering of mutual aid among the political subdivisions of the Commonwealth and with other states, and to cooperate with the federal government with respect to the carrying out of emergency service functions.

² https://www.govregs.com/regulations/title47_chapterI_part90_subpartA_section90.7 FCC Title 47 Chapter 1 Part 90 Subpart A Section 90.7 – Definitions for “Interoperability”

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interoperability solution with the broad potential to link all manner of responders and planners, both in response and anticipation of all-hazard threats.

COMLINC is the name of the Commonwealth's radio communication interoperability solution and is independent of a specific technology. Currently, the technology that drives the solution is the SyTech Corporation's Radio Interoperability System (RIOS)³. With the fully supported engine of RIOS, COMLINC is an agile, adaptable, scalable, and affordable interoperability system that bridges all-hazard interoperability on demand. If properly modernized, sustained and expanded, COMLINC will fulfill the interoperability requirement set forth in § 2.2-222.2, Code of Virginia.

The Office of Public Safety and Homeland Security, on behalf of the Statewide Interoperability Executive Committee (SIEC)⁴, contracted with Commonwealth Spectrum Management Services (CSMS) in partnership with CTA Consultants, LLC to perform an evaluation of statewide interoperability, based upon currently deployed technologies, and make recommendations for a sustainable interoperability strategy moving forward.

The Secretary of Public Safety and Homeland Security shall submit a report detailing costs associated with the upgrade to achieve statewide interoperability to the Governor, the Chairmen of the House Appropriations and Senate Finance Committees, and the Department of Planning and Budget by November 1, 2018, to fulfill interoperability requirements set forth in §2.2-222.2, Code of Virginia, and to assess and prioritize the systems that require upgrade to ensure the Commonwealth's goals for interoperability.

This report's foundation is the interoperability continuum⁵, a Department of Homeland Security (DHS) model designed to assist in the planning and implementation of interoperability solutions. The continuum identifies five (5) critical elements: governance, standard operating procedures (SOPs), technology, training and exercises, and usage. The COMLINC gaps, findings, and recommendations in this report are framed upon the interoperability continuum.

The Commonwealth has invested in multiple technologies to implement interoperability over the years and this document chronicles that journey in section 2, Interoperability in Virginia.

This document provides the following information on COMLINC throughout the Commonwealth:

Section 2 Interoperability in Virginia	Section 6 COMLINC Cost Estimates
Section 3 COMLINC Current Environment	Section 7 COMLINC Findings
Section 4 COMLINC Gaps	Section 8 COMLINC Recommendations
Section 5 COMLINC IT/Security	

³ <https://www.sytechcorp.com/products/rios-radio-interoperability-systems/> Radio Interoperability System product of SyTech [Additional information provide in Appendix A, Glossary]

⁴ <https://www.pshs.virginia.gov/homeland-security/interoperability/> The Statewide Interoperability Executive Committee (SIEC) defined [Additional information provide in Appendix A, Glossary]

⁵ <https://www.dhs.gov/publication/interoperability> Homeland Security Interoperability Continuum defined [Additional information provide in Appendix A, Glossary]

2 INTEROPERABILITY IN VIRGINIA

Public safety agencies⁶ and other all-hazards stakeholders⁷ throughout the Commonwealth must work together to improve multijurisdictional communications to detect and prevent terrorism-related activity, to improve response to natural disasters and other emergencies, or to enhance coverage of special events. When these situations occur, multiple agencies across the Commonwealth, who are often operating with incompatible radio equipment, are required to communicate effectively in order to respond to the threat properly.

As public safety communications systems were developed, the vendor community used proprietary methods and equipment in their development, which inherently caused a lack of interoperability between systems. Over the last 10 years, vendors have developed standards-based public safety communications systems; however, the development and implementation of the standards has been a lengthy process and the cost of a new standards-based system can be difficult for many localities to purchase and maintain. Lack of ubiquitous standards-based communications systems is the most significant gap in achieving interoperability and creates a need for alternative interoperability solutions.

The Commonwealth has created an *interoperability toolbox* for state agencies and localities to address the need for interoperability solutions. Sections 2.1 – 2.4 provides a historical and maturity overview of interoperability systems in Virginia prior to the introduction of COMLINC. Section 2.5 outlines interoperability in Virginia and how the COMLINC platform became what it is today.

2.1 Statewide Interdepartmental Radio System (SIRS)	2.5 Commonwealth’s Link to Interoperable Communications (COMLINC)
2.2 National Interoperability Channels	2.5.1 Overlay Regional Inter-Operability Network (ORION)
2.3 Statewide Agencies Radio System (STARS)	2.5.2 Motorola Motobridge
2.4 Commonwealth Communications Caches	2.5.3 SyTech Corporation - RIOS
	2.5.4 COMLINC Implementation

2.1 Statewide Interdepartmental Radio System (SIRS)

In 1977, the Virginia Statewide Interdepartmental Radio System (SIRS) Advisory Board was created to improve coordination between state and local law enforcement agencies. At that time, no direct radio link existed between these agencies. The Commonwealth licensed the low-band VHF radio frequency of 39.54 MHz providing statewide access for agencies utilizing SIRS. Additionally, the FCC has set aside a Very High Frequency (VHF) of 155.475

⁶ <https://law.lis.virginia.gov/vacode/title9.1/chapter8/section9.1-801/> State Code of Virginia §9.1-801 Public Safety officer defined [Additional information provide in Appendix A, Glossary]

⁷ All-hazards stakeholders include traditional and non-traditional users such as the following: the Red Cross, utilities, nurses, college police, railroads/railroad police, and other all-hazard organizations.

MHz (wideband⁸) and 155.4825 MHz⁹ (narrowband) as VHF interoperability channels to be used by law enforcement statewide. The SIRS Advisory Board manages both the Commonwealth set aside low band and the two (2) FCC VHF law enforcement interoperability frequencies as described in this section.

Currently, all Statewide Agencies Radio System (STARS) law enforcement vehicles are equipped with an independent low band (39.54 MHz) SIRS radio. This radio is independent of the STARS radio and is always available to send and receive radio transmissions.

While SIRS is a valuable tool in the interoperability toolbox, and continues to be used by many *rural* localities, it is only a single channel (talk path) to be used for isolated mobile to mobile communications. SIRS is a tactical form of communications allowed *to be used by law enforcement only* as a means to communicate when no other form of communications is available.

2.2 National Interoperability Channels

The Federal Communications Commission (FCC) has designated interoperability channels, in the VHF, UHF, 700 MHz, and 800 MHz spectrums, to be used for “two or more different entities to interact with one another and to exchange information ...”¹⁰. These frequencies are managed by the Commonwealth Statewide Interoperability Coordinator (SWIC) and the FCC designates these channels be licensed by approved public safety coordinators.

To use these frequencies on a permanent basis, a state agency or locality must install frequency specific equipment on towers, which is often cost prohibitive. To use these frequencies on an ad hoc basis, temporary repeaters can be employed. Currently there is not widespread infrastructure in place, due in large part to the cost involved, which limits the use of the national interoperability channels throughout the Commonwealth.

The national interoperability channels are a valuable tool in the interoperability toolbox, as they provide users the ability to communicate, using their own radio, with another state agency or locality when physically within that state agency or localities’ radio system footprint¹¹ or radio coverage area. It is important that all state agencies and localities incorporate the national interoperability channels into radio programming to take full advantage of these channels if/when they are available.

2.3 Statewide Agencies Radio System (STARS)

The STARS Program was envisioned in the mid nineteen-nineties as an upgrade to the Virginia State Police's (VSP) antiquated 1977 land mobile radio system. As planning progressed, both technology advancements and direction from state government led the program to be developed into a shared statewide system for state agencies.

In 1997 Virginia Tech assessed the current needs of state agencies and local public safety agencies, as well as the

⁸ As of 2013, the FCC mandated all public safety VHF and UHF frequencies to be narrow-banded.

⁹ These frequencies are available nationwide for use in police emergency communications networks operated under statewide law enforcement emergency communications plans as per FCC, Part 90.20 rule section.

¹⁰ https://www.govregs.com/regulations/title47_chapterI_part90_subpartA_section90.7 FCC Title 47 Chapter 1 Part 90 Subpart A Section 90.7 – Definitions for “Interoperability”

¹¹ Footprint is a radio term indicating the physical area that defines reliable communications.

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level of interest in a statewide system. They also researched and evaluated current technologies to determine what types of systems would meet the needs of the majority of potential users. They recommended upgrading the existing Department of State Police communications system infrastructure for use as a statewide shared land mobile radio system serving 19 state agencies in public safety, transportation and natural resources, along with federal partners. While the participation of localities on the statewide system was considered, a definitive recommendation was not developed.

In 1998, the Commonwealth of Virginia General Assembly directed that a plan be developed to implement a statewide shared land mobile radio system for use by state agencies and localities. This plan was to ensure state public safety, transportation, and natural resource agencies could share the benefits and efficiencies of an improved and effective communications infrastructure. The Secretary of Public Safety, using general fund and non-general fund appropriations from 13 different agencies, contracted with Virginia Tech to complete a plan.

STARS was officially established by Executive Order Seventy-six (76), signed by Governor Gilmore on June 20, 2001. The Executive Order created the STARS Management Group, which is composed of the Secretaries of Public Safety, Technology, Transportation, Natural Resources, and Finance and the Deputy Chief of Staff for Operations. The Executive Order also created a STARS Users Group (previously known as the User Agencies Review Committee (UARC) and the STARS Project Management Team, which is located at the Virginia State Police Headquarters.

STARS is an integrated wireless voice and data communications system designed to meet the needs of state agencies engaged in public protection or safety and the joint state and local police communication system established pursuant to State Code of Virginia Chapter 3, Title 52¹². After much consideration of Commonwealth financial constraints and frequency shortages (which created capacity challenges), state agencies and legislators elected to upgrade only the existing VSP land mobile radio (LMR) and microwave (MW) infrastructure as the network for STARS. The STARS network could pursue adding localities to the network if the locality could provide sufficient VHF frequencies to support the capacity added to the network. Generally, the VHF frequency licenses held by the localities were coordinated such that use in the STARS network was limited. *The decision to only upgrade the existing VSP sites left a gap in implementing interoperability between state agencies and the localities.*

To maintain the concept of implementing interoperability with localities, the STARS network technical design included a single interface link to each of the counties and independent cities to introduce interoperability at no cost to the jurisdiction. As STARS was implemented, tower loading/capacity constraints and continued frequency challenges caused this solution to become impractical and the STARS Project Management Team, began considering a Voice over Internet Protocol (VoIP) based interoperability solution, in lieu of the single interface link architecture, to bridge the interoperability gap between state agencies and the localities.

Moving forward, STARS continues to be a critical tool in the interoperability toolbox. Any interoperability solution implemented in the Commonwealth will require a connection to STARS to meet the requirements set forth in the State Code of Virginia § 2.2-222.2.

¹² <https://law.lis.virginia.gov/vacode/title52/chapter3/section52-16/> Code of Virginia §52-16 Governor may establish and maintain radio and teletype system to aid police.

2.4 Commonwealth Communications Caches

The Commonwealth established¹³ five Strategic Communications Caches located across the Commonwealth:

- Hampton Roads (City of Chesapeake / City of Hampton)
- Fairfax County
- Harrisonburg / Rockingham County
- Montgomery County (VA)
- Lunenburg County

The Commonwealth's communications cache is available to support public safety communications needs within the Commonwealth for emergency incidents or scheduled events. A request for activation of one or more communications cache units is initiated with VDEM. Requests for planned radio cache deployments must be received by VDEM thirty (30) calendar days in advance. Emergency radio cache deployment requests will be received by VDEM at any time. Within two (2) hours of receiving an emergency deployment notification through VDEM, the cache team will be deployed to the requesting agency with support staff that includes a Communications Unit Leader (COML), Communications Technicians (COMT), and equipment. When activated through VDEM on an emergency deployment, the team will have the ability to be completely self-sustaining for forty-eight (48) hours.¹⁴



The Commonwealth Communications Caches are a valuable tool in the interoperability toolbox. Much of the Communications Cache equipment is at end of life and will need to be replaced.

2.5 Commonwealth's Link to Interoperable Communications (COMLINC)

The Commonwealth Link to Interoperable Communications (COMLINC) was established and intended to be a reliable interoperability solution to provide or improve communication between state agencies and localities, using disparate systems, during an emergency response. Funding for COMLINC came from federal grants, which only provided for initial implementation, and once these funds were expended no additional funding was provided for the sustainment of this interoperability solution.

The success of COMLINC, in a given locality, is highly dependent upon their knowledge of how best to use COMLINC and level of training and regular practical use of this interoperability tool.

COMLINC is an interoperability concept. This concept requires technology to make it functional. This section outlines the history of technologies used, to date, to implement COMLINC.

¹³ Communications Cache was established in 2008.

¹⁴ <https://www.vacache.org> Operational information obtained from the Virginia Communications Cache Website.

2.5.1 Overlay Regional Inter-Operability Network (ORION)

In 2003, the Hampton Roads area established an interoperability network called the Overlay Regional Inter-Operability network (ORION). This system provides regional interoperability for command, control and communications, using the Hampton Roads Tactical Regional Area Network (HRTacRAN) as the backbone and supporting structure. This system uses Project 25 (P25)¹⁵ 700/800 MHz radios and is programmed with ORION talk-groups and national interoperability channels. ORION provides first responders in the region with a shared standards-based wide-area interoperable network. This network was originally grant-funded, without a plan for sustainment, and is often not operational because it is facing the challenge of aged infrastructure. Additionally, the system has reached capacity and will be overwhelmed if heavily used during an emergency. *ORION is providing diminished value to localities in the Hampton Roads area and it does not serve the interoperability needs of those outside of this geographic area.*

2.5.2 Motorola Motobridge

In 2005, subsequent to the completion of the STARS design, STARBridge was developed to *bridge the interoperability gap between state agencies and localities*, which resulted in a pilot program with the Motorola Motobridge technology in VSP Division 1. Motobridge is bandwidth dependent technology which requires T1 lines to run efficiently. The Commonwealth used grant funding to establish T1 connections to the localities within the Division, and to maintain them for the first year. In addition, VSP investigated establishing MW links to the localities to avoid the continuing costs of the T1 connections, but found this solution to be cost prohibitive. *Motobridge is no longer used as part of COMLINC.*

2.5.3 SyTech Corporation - RIOS

In 2006, with support of the STARS Management Team, the Lynchburg and Roanoke Metropolitan Statistical Area (MSA) jointly received a grant for Interoperability and chose to solicit an interoperability technology by competitive procurement. SyTech Corporation was awarded the resulting contract, and they implemented the RIOS system as the interoperability solution throughout the Lynchburg and Roanoke MSA. This technology provides programmable temporary connections (patches) between jurisdictions made using VoIP.

RIOS is the current technology platform in use for COMLINC.

SyTech RIOS is a Mesh Network¹⁶ with no central hub. RIOS converts analog audio to VoIP and allows resulting VoIP to be distributed over the internet, based upon the ad hoc programming that is defined by the user. The RIOS system is protected and managed by three (3) critical information routers, two of which are located in Alexandria, Virginia and one (1) in Cincinnati, Ohio to ensure redundancy and security.

¹⁵ <http://www.project25.org> Association of Public Safety Communications Officials (APCO) Project 25 interoperability standards [Additional information provide in Appendix A, Glossary]

¹⁶ <https://www.techopedia.com/definition/24398/mesh-networking> Mesh networking is a type of network topology in which a device (node) transmits its own data, as well as serving as a relay for other nodes. Routers are used to provide the best and most efficient data path for effective communication.

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This interoperability technology is an agile, adaptable, scalable, and affordable interoperability system that supports all-hazards operations on demand. It can be used as a fixed radio interoperability gateway, tactical interoperability gateway, client software, and RIOS LiTE smartphone application.

In 2007, the RIOS the default deployment¹⁷ was comprised of the following components:

RACKMOUNT HARDWARE
2 RIOS Configured Windows XP Servers
2 SyTech Input / Output Chassis
1 Pullout keyboard and monitor
1 CISCO 2800 Series Router
1 CISCO 2200 Switch
1 Keyboard, Video, and Mouse Switch (KVM)
1 or 2 SyTech Tone Control Interface (TCI) Chassis depending on radio connections
SyTech TCI Cards x number of radios
2 Fail Over Control Power Controllers
1 Uninterrupted Power Supply (UPS)
SyTech Radio Interface Cables x Number of Radios



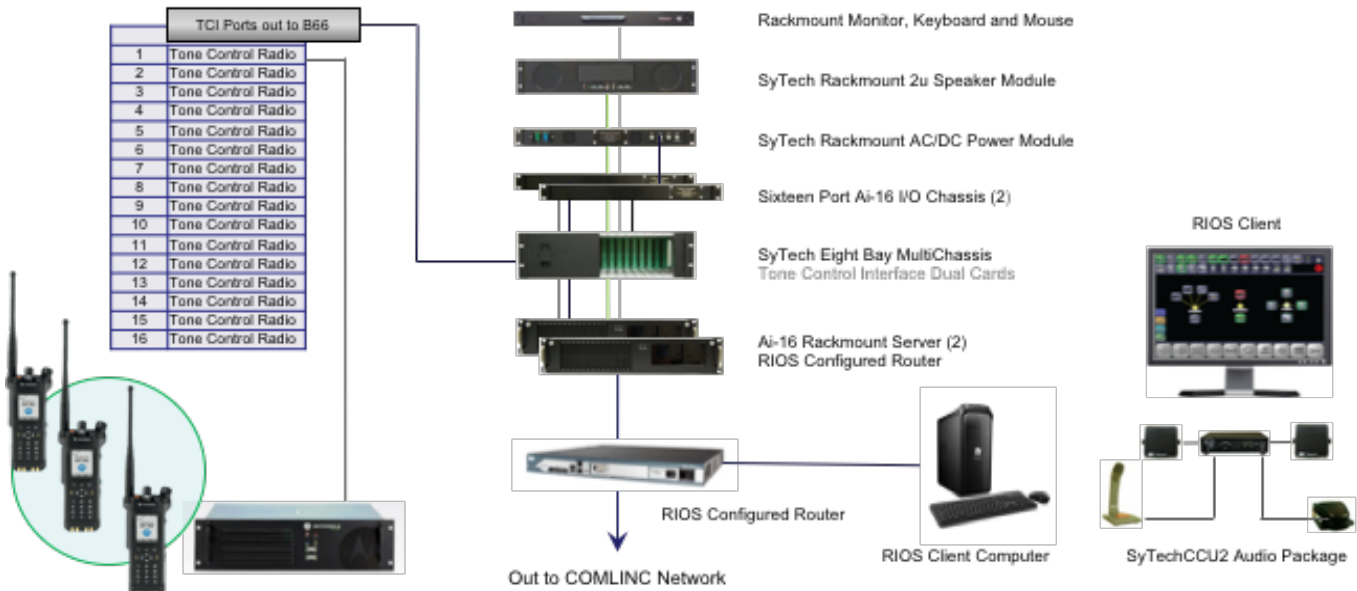
¹⁷ While the standard deployment was for two (2) client servers, the localities were given the option of additional client servers provided the cost was covered by the grant or the locality funded the additional costs.

COMLINC EVALUATION

RIOS CLIENT WORKSTATIONS

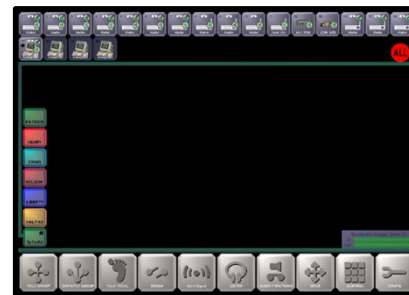
2 Windows-Based Personal Computers	2 Audio Package, speakers and microphone Rackmount Speaker Module
2 Mouse	2 Keyboard

The following is a pictorial of the RIOS system as a standard implementation:



This implementation utilizes a Graphical User Interface (GUI) to allow an operator to use the system to connect one or more local and/or remote radio systems together for interoperable communications as needed. Through this GUI the operator has access to the following functionality:

FUNCTION CONTROL	
Patching	Push to Talk
Voice Over IP	Recording
Instant Recall	Chat among Sites
Alerts	Audio Adjustments and Tuning

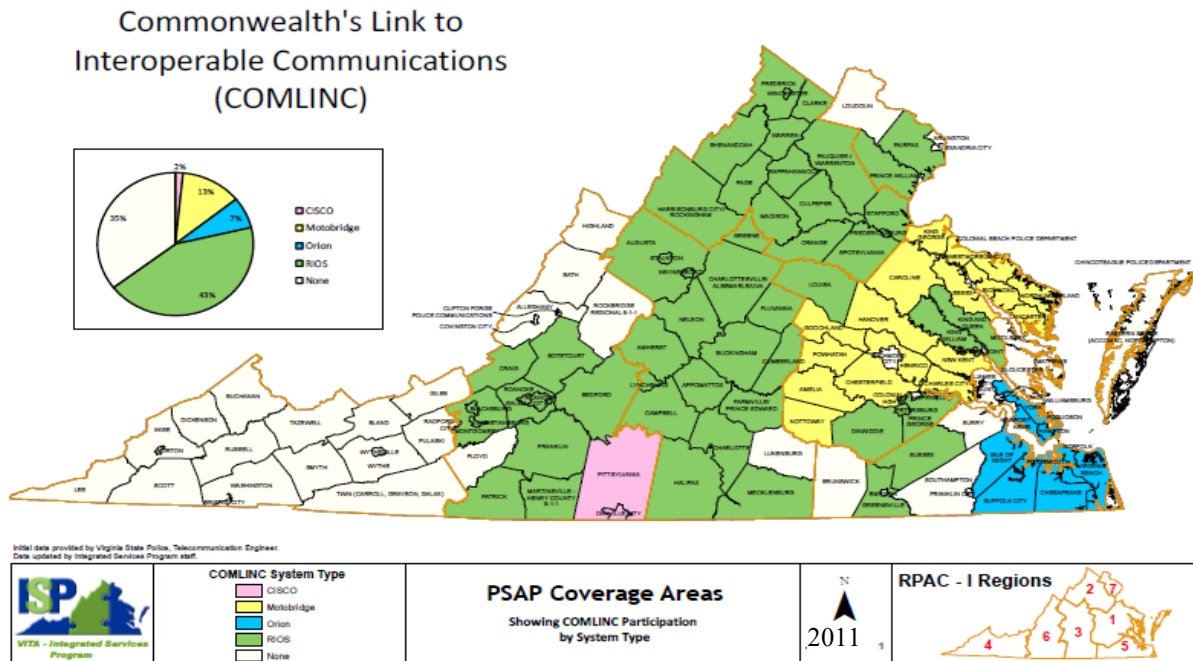


This system has been monitored and managed by SyTech for over ten (10) years. *SyTech RIOS technology can meet the prime objective to bridge the interoperability gap between state agencies and localities and it is evident this solution can also bridge all-hazard interoperability on demand.*

2.5.4 COMLINC Implementation

COMLINC is an agile, adaptable, scalable, and affordable interoperability system that supports all-hazards operations on demand. The complexity of all-hazards operations and the nature of the threat environment demands on-call interoperability for multijurisdictional operations. Operationally, COMLINC was originally intended to bridge the interoperability gap between state agencies and localities.

COMLINC was created by the implementation of multiple technologies¹⁸ such as Motorola Motobridge, ORION, and SyTech RIOS. Initially the Commonwealth implemented 108 COMLINC sites across the state, in 93 jurisdictions and organized the deployment according to VDEM Regional Preparedness Advisory Committee for Interoperability (RPAC-I)¹⁹ regions. By 2011, much of the Commonwealth had some form of interoperability solution in place, as depicted in the map below:



Due to the high cost of required bandwidth, the Motobridge deployments, which are shown in yellow above, were replaced with RIOS. Due to the high cost of infrastructure, the ORION system, which are shown in blue above, did not progress beyond the Hampton Roads area. In an effort to expand interoperability in the Commonwealth, with lower costs for bandwidth and infrastructure, *RIOS became the interoperability solution of choice throughout the Commonwealth.*

The concept and deployment of COMLINC was advanced in an ad hoc way, funded by DHS grants following 9/11. It was not established as a formal program, even while it continued to expand among state agencies and localities.

¹⁸ The City of Danville implemented a CISCO interoperability solution in the early stages of COMLINC. It is no longer operational.

¹⁹ <https://www.pshs.virginia.gov/homeland-security/interoperability/> Regional Preparedness Advisory Committee for Interoperability (RPAC-I) defined [Additional information provide in Appendix A, Glossary]

COMLINC EVALUATION

COMLINC is currently a gateway that bridges the interoperability gap between state agencies and local to local, operating on disparate radio systems. This form of interoperability is strategic versus tactical. COMLINC allows localities to talk with state agencies and to each other, provided they are within their communications footprint or coverage area. This form of interoperability also allows dispatchers to continue to monitor communications, thereby promoting situational awareness. While certainly a benefit during times of emergency, this form of interoperability also provides an efficient and effective means of communications during planned events, eliminating the complexity of exchanging or reprogramming radios.

COMLINC is not limited by propriety radio equipment; therefore, it is capable of bridging all-hazards interoperability on demand. This strategy is a significantly improved interoperability tool in the toolbox, as it does not require the exchange of radio equipment. *The current COMLINC technology deployed statewide is SyTech RIOS.*

3 COMLINC CURRENT ENVIRONMENT

Based upon interviews and surveys, this section provides statistical and narrative descriptions of the following:

3.1 Data Collection Methodology
3.2 COMLINC Network
3.3 Age & Condition of COMLINC Systems
3.4 Localities not Using COMLINC
3.5 Synopsis of RPAC-I Regions/State Agencies COMLINC Environment

3.1 Data Collection Methodology

To assess the current environment, VDEM provided results from a survey issued by the Department of Homeland Security (DHS) Office of Emergency Services (OES)²⁰. OES developed a survey form which was pushed out to participants in the Commonwealth via the internet. Responses²¹ were received from the passive survey, of which only a subset were usable. It is unknown how many survey requests were sent out. The following presents the metrics of responses received:

57 TOTAL RESPONSES
14 incorrect contact / duplicate / did not know information
4 provided no information beyond equipment was installed
39 responses provided usable data to evaluate

CSMS engaged in an active interview/survey process to obtain the necessary usable data and properly assesses the current environment, gaps in interoperability, and make recommendations. The CSMS team developed interview questions, revised the survey document²² and reached out to each of the Public Safety Answering Points (PSAP) in the Commonwealth.

²⁰ OES survey form provided in Appendix B.

²¹ OES survey responses provided in Appendix C.

²² CSMS revised survey form provided in Appendix D. CSMS survey responses are provided in Appendix E. CSMS interview responses are provided in Appendix F.

COMLINC EVALUATION

The following is a summary of how many localities were interviewed or returned a survey²³:

102 TOTAL RESPONSES (83%)
RPAC-I Region 1 – 21 of 26 localities were interviewed/completed survey (81%)
RPAC-I Region 2 – 13 of 14 localities were interviewed/completed survey (93%)
RPAC-I Region 3 – 14 of 18 localities were interviewed/completed survey (78%)
RPAC-I Region 4 – 16 of 16 localities were interviewed/completed survey (100%)
RPAC-I Region 5 – 15 of 21 localities were interviewed/completed survey (71%)
RPAC-I Region 6 – 15 of 19 localities were interviewed/completed survey (79%)
RPAC-I Region 7 – 8 of 9 localities were interviewed/completed survey (89%)

The CSMS team also reached out to all twenty (20) appointees on the SIEC, three (3) VDEM staff personnel, one (1) stakeholder, one (1) technology vendor, and OES:

RPAC-I Chair Region 1 [Hanover]	RPAC-I Chair Region 2 [Spotsylvania]
RPAC-I Chair Region 3 [Lynchburg]	RPAC-I Chair Region 4 [Tazewell County]
RPAC-I Chair Region 5 [York-Poquoson-Williamsburg]	RPAC-I Chair Region 6 [Roanoke County]
RPAC-I Chair Region 7 [Prince William County]	Department of Military Affairs
VA State Police	VA Department of Emergency Management
VA Department of Emergency Management Emergency Coordinator	VA Department of Health - Emergency Operations Manager
VA Department of Health - Public Health Preparedness Systems Manager	VA Department of Transportation
VA Information Technology Agency	VA Department of Fire Programs
VA Association of Public Safety Communications Officials	VA Municipal League
Radio Amateur Civil Emergency Service (RACES)	Virginia Communications Cache
York County	OEC Survey
HSD Cyber Program Manager	HSD Grants and Budget
Stakeholder – Charles Werner	SyTech

It is important to note that interview or survey results are dependent upon when an interview or survey was completed and by whom, and therefore may not reflect the entirety of the COMLINC experience over the last ten plus years. While there may be variances in information provided by different people, this does not change the current common operating picture of COMLINC.

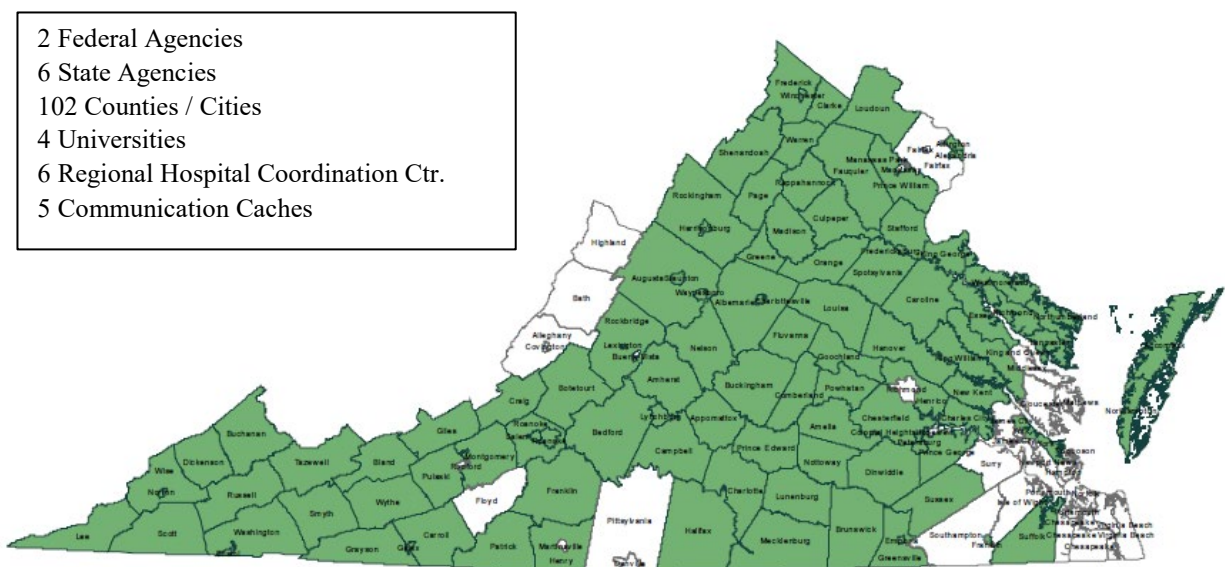
²³ A list of individuals contacted, and the response date are provided in an Appendix G.

COMLINC EVALUATION

Findings and recommendations are based upon the September 2018 OES survey results and CSMS interview and survey results and reflect the *current* COMLINC environment and may not necessarily reflect past trends. It is within reason to expect that usage of COMLINC may have been higher when first installed, as the hardware was in better working condition.

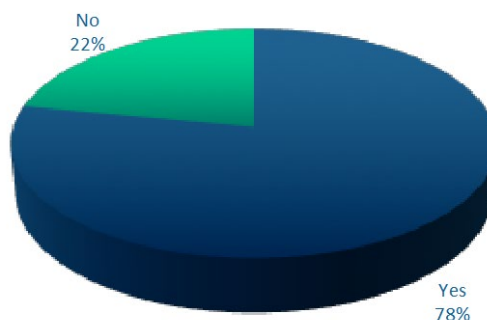
3.2 COMLINC Network

COMLINC is widely distributed across the Commonwealth, serving state agencies, localities, federal agencies, universities, regional hospitals, and the communications caches. The following graphic illustrates the current installations of RIOS throughout the Commonwealth.

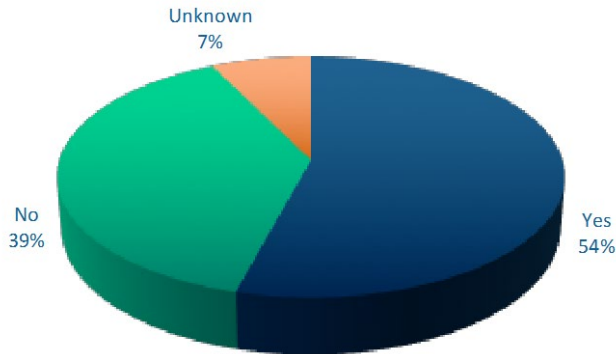


Localities with COMLINC

One hundred twenty-three (123) localities were interviewed/surveyed and ninety-six (96) report they have COMLINC equipment on the premises. Twenty-seven (27) report not having COMLINC equipment on the premises. Section 3.5 details how COMLINC equipment is utilized.

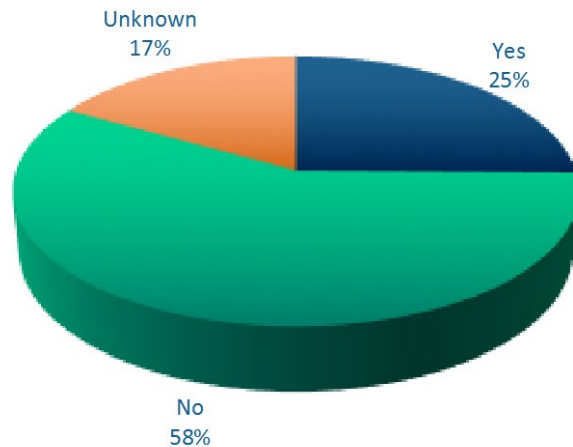


Localities use COMLINC



Of the ninety-six (96) localities that have COMLINC, fifty-two (52) state they use COMLINC either on a regular basis, for daily or weekly testing, or for an occasional planned event. Thirty-seven (37) report they do not use COMLINC and seven (7) did not report on usage. Section 3.5 details how COMLINC is utilized.

Localities use COMLINC with State Agencies



Of the ninety-six (96) localities that have COMLINC, twenty-four (24) localities report regularly using COMLINC for the *intended primary objective, to bridge the interoperability gap between state agencies and localities*. Fifty-six (56) report they do not use COMLINC to talk with state agencies, and the remaining sixteen (16) are unknown. Section 3.5 details COMLINC communications with state agencies.

Nine (9) state agencies/departments, as represented on the Commonwealth SIEC, were interviewed. Seven (7) have COMLINC equipment and seven (7) utilize COMLINC. Section 3.5 details how that COMLINC equipment is utilized.

The use case for an interoperability solution can be difficult to quantify as its primary use is during unusual and infrequent events. Therefore, *the lack of COMLINC use does not necessarily correlate to its inherent value to the user and the community. It is critical for the interoperability solution to be available and operational when it is needed.*

3.3 Age & Condition of COMLINC Systems

A majority of SyTech RIOS systems were deployed from 2007 to 2008. When initially deployed, the systems utilized current-day hardware that provided the most robust platforms to support the system design. Over the last ten years, technology has evolved, rendering the existing RIOS system obsolete and necessitating a system upgrade for better *security, reliability, and speed*.

Current hardware limitations include:

SERVER HARDWARE
▪ Security and performance issues related to Windows XP ²⁴ operating system
▪ Limited support for drivers, operating system patches, and Microsoft .NET
▪ Majority of localities are running RIOS Server software version 3.14.8, with a handful of localities running 3.43.48 ²⁵
▪ Limited hard drive space
▪ Audio issues related to processor/RAM capacity
▪ Replacements and replacement parts no longer available
CISCO ROUTER
▪ End of Life of 2800 and 2900 Series routers
▪ Limited memory capacity
▪ Security vulnerabilities
CLIENT HARDWARE
▪ Security and performance issues related to Windows XP operating system
▪ Limited support for drivers, operating system patches, and Microsoft .NET
▪ Replacements and replacement parts are no longer available

According to SyTech records, many of the original RIOS devices installed in the Commonwealth are still running on Windows XP devices and need to have significant hardware and software updates performed. These Windows XP devices cannot accept the required updates, leaving them open to significant security vulnerabilities.

An audit of trouble tickets for maintenance calls to VSP technicians indicate common maintenance requests. Failure items as identified by VSP maintenance records include:

²⁴ Windows XP is no longer supported by Microsoft and security updates can no longer be performed. Using a Windows XP machine violates both Virginia Information Technology Agency (VITA) and the Criminal Justice Information Service (CJIS) security policies.

²⁵ Current RIOS software version is 3.44 and the localities with the highest version of 3.43.48 cannot be upgraded to the current version without equipment refresh.

COMLINC EVALUATION

SERVERS
<ul style="list-style-type: none"> ▪ Hard drive failures
<ul style="list-style-type: none"> ▪ Audio card failures
<ul style="list-style-type: none"> ▪ Network Interface Card (NIC) failures
<ul style="list-style-type: none"> ▪ Corrupt data crashes
ROUTERS
<ul style="list-style-type: none"> ▪ According to SyTech, most of the routers in the system are no longer supported and need to be replaced.
<ul style="list-style-type: none"> ▪ The trouble tickets do not indicate a high number of router failures, but they should be replaced with updated devices which are supported and have features that make the network more robust and able to be secured.
POINTING DEVICE
<ul style="list-style-type: none"> ▪ Multiple tickets issued for failure of the pointing device.
<ul style="list-style-type: none"> ▪ The reasons varied from the cable being unplugged to failure of drivers, interface cards, or the pointing device itself, drivers or the interface card.
SOFTWARE
<ul style="list-style-type: none"> ▪ Server operating systems need to be at the same revision.
<ul style="list-style-type: none"> ▪ Hardware limitations prevent many systems from accepting the upgrades.

3.3.1 Counties Without COMLINC

Based upon SyTech site visits and survey information provided by localities, the following fourteen (14) Counties do not have an independent COMLINC equipment in the PSAP:

<ul style="list-style-type: none"> ▪ Allegany County 	<ul style="list-style-type: none"> ▪ Bath County
<ul style="list-style-type: none"> ▪ Fairfax County 	<ul style="list-style-type: none"> ▪ Floyd County
<ul style="list-style-type: none"> ▪ Gloucester County²⁶ 	<ul style="list-style-type: none"> ▪ Highland County
<ul style="list-style-type: none"> ▪ Isle of Wight County 	<ul style="list-style-type: none"> ▪ James City County¹⁷
<ul style="list-style-type: none"> ▪ Lunenburg County 	<ul style="list-style-type: none"> ▪ Mathews County
<ul style="list-style-type: none"> ▪ Middlesex County 	<ul style="list-style-type: none"> ▪ Pittsylvania County
<ul style="list-style-type: none"> ▪ Southampton County 	<ul style="list-style-type: none"> ▪ Surry County

3.3.2 Cities Without COMLINC

Based upon SyTech site visits and survey information provided by localities the following eight (8) Cities do not have COMLINC equipment in the PSAP:

<ul style="list-style-type: none"> ▪ Chesapeake City 	<ul style="list-style-type: none"> ▪ Covington City
<ul style="list-style-type: none"> ▪ Danville City 	<ul style="list-style-type: none"> ▪ Hampton City
<ul style="list-style-type: none"> ▪ Norfolk City 	<ul style="list-style-type: none"> ▪ Newport News City
<ul style="list-style-type: none"> ▪ Portsmouth 	<ul style="list-style-type: none"> ▪ Virginia Beach City

²⁶ Gloucester and James City County currently have access to COMLINC thru the York County system. In the future it would be beneficial for these two counties to have independent RIOS deployment in the PSAPs.

3.3.3 State Agencies and Other Critical Partners Without COMLINC

Based upon SyTech site visits and survey information provided by state agencies and other critical partners, the following three (3) State Agencies, three (3) private entities²⁷, and one (1) federal entity have expressed interest in participating COMLINC:

▪ North Anna Nuclear Site	▪ Virginia Department of Forestry
▪ Surry Nuclear Site	▪ Virginia Port Authority
▪ Wallops Island - NASA	▪ US Coast Guard
▪ Virginia Department of Game and Fisheries	

3.4 Synopsis of RPAC-I Regions / State Agencies COMLINC Environment

Throughout most of the Commonwealth, COMLINC is not used on a consistent basis. This lack of use has increased over the years due primarily to *hardware failures and software obsolescence*. The *lack of ongoing and consistent training and exercises* creates an inconsistent level of knowledge and readiness to use the system. Consequently, *COMLINC has become a technically and operationally unreliable system*. In an effort to provide increased granularity on how COMLINC is used in the Commonwealth, the usage charts for each region (Do you use COMLINC column) notates whether COMLINC is used on a routine basis (Yes), for testing only (Testing), very infrequently (Rarely), and not at all (No).

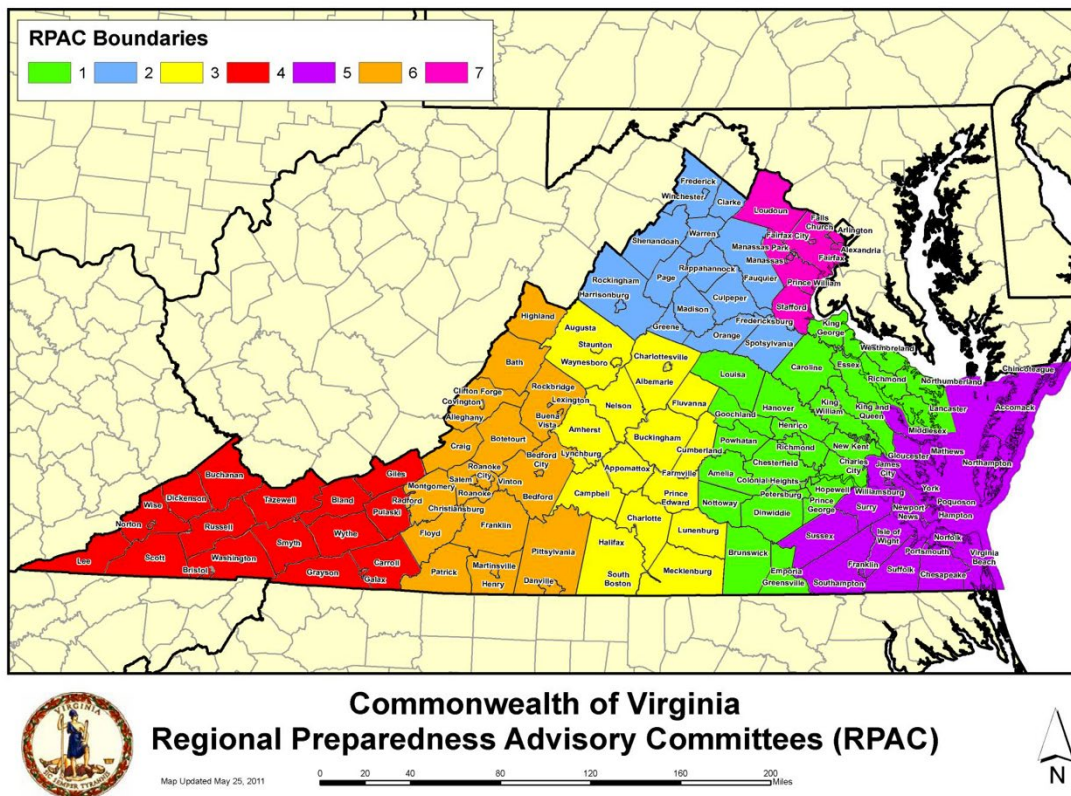
In some cases, localities have cooperated with each other and with state agencies to fulfill interoperability needs. While this may not always be the most efficient method, those localities make their solutions work well enough to meet basic communications needs. The success of COMLINC in each locality is based upon how much they know about how COMLINC can be used through best practices, and the availability of ongoing training and practical use with neighboring localities and state agencies.

Localities need a way to establish communications with state agencies and their neighbors; however, many localities throughout the Commonwealth continue to struggle to achieve baseline operability within their locality, which is a necessary foundation upon which to build interoperability. While COMLINC can provide interoperability between localities and state agencies, it cannot provide extended coverage beyond the locality or state agency existing communications system. It does not improve the user's reliable radio range, therefore, it is critical for these localities to resolve operability issues, so they have the necessary coverage to make an interoperability solution a viable tool in their communications toolbox.

²⁷ Only the three (3) state agencies have been included in the cost estimates.

COMLINC EVALUATION

Based upon the data received from the interviews and surveys, the following sections provide a synopsis of the current environment. These regions for the purpose of illustration are organized by VDEM RPAC-I regions.



3.4.1 RPAC-I Region 1

RPAC-I Region 1 includes large and small regional systems and some independent locality-driven radio systems. Based upon the compiling of surveys and the SyTech records, all localities in RPAC-I Region 1 have COMLINC equipment (RIOS Gateway). The majority of localities do not use COMLINC on a regular basis. With regard to the primary objective of COMLINC, the majority of localities in this region do not use COMLINC to communicate with state agencies.

COMLINC EVALUATION

RPAC-I Region 1	Do you have COMLINC	Do you use COMLINC	Do you use COMLINC with State Agencies
Amelia	Yes	No	No
Caroline	Yes	Testing	No
Charles City	Yes	Rarely	No
Chesterfield	Yes	Testing	No
Colonial Heights	Yes	Yes	No
Dinwiddie	Yes	No	No
Essex	Yes	No	No
Goochland	Yes	No	No
Hanover	Yes	Rarely	No
Henrico	Yes	No	Yes
Hopewell	Yes	No	No
King and Queen	Yes	No	No
King George	Yes	Testing	
King William	Yes	No	No
Lancaster	Yes	No	No
Louisa	Yes	Yes	
New Kent	Yes	Rarely	No
Northumberland	Yes	No	No
Nottoway	Yes	No	No
Petersburg	Yes	No	No
Powhatan	Yes	Rarely	No
Prince George	Yes		
Richmond Ambulance Authority	Yes	Yes	Yes
Richmond City	Yes	Rarely	Yes
Richmond County	Yes	No	No
Westmoreland	Yes	Yes	Yes

RPAC-I Region 1 does not fully utilize the capability of COMLINC to talk from locality to locality. The primary reasons for localities not using COMLINC are:

- Equipment does not work due to technical reasons
- Equipment is not reliable
- Equipment is not currently installed or connected
- Localities around them do not utilize COMLINC
- Lack of ongoing training
- Physical location of COMLINC client is too remote

There are a wide range of operational situations in RPAC-I Region 1. Localities want to talk to state agencies and each other, and the disparity of communications environments makes it difficult in some circumstances. Localities internally patch radios, share radios, or communicate via SIRS. COMLINC is not the interoperability tool of choice for this region. Finally, it should be noted that Lancaster County elected to be part of RPAC-I Region 1 and not RPAC-I Region 5. COMLINC can bring value by bridging public safety agencies to other all-hazards stakeholders within the region.

COMLINC EVALUATION

3.4.2 RPAC-I Region 2

Based upon the compiling of surveys and the SyTech records, all localities in RPAC-I Region 2 have COMLINC equipment (RIOS Gateway). With regard to the primary objective of COMLINC, the majority of localities in this region do not use COMLINC to communicate with state agencies, except for testing.

RPAC-I Region 2	Do you have COMLINC	Do you use COMLINC	Do you use COMLINC with State Agencies
Clarke	Yes	No	No
Culpeper	Yes	Yes	
Fauquier	Yes	Testing	Yes
Frederick	Yes	No	No
Fredericksburg	Yes	Testing	Yes
Harrisonburg-Rockingham	Yes	Yes	Yes
Madison	Yes	Testing	Yes
Orange	Yes	Testing	No
Page	Yes	No	No
Rappahannock	Yes	Yes	
Shenandoah	Yes		
Spotsylvania	Yes	Yes	Yes
Warren	Yes	Yes	
Winchester	Yes	No	No

RPAC-I Region 2 holds a Bi-Weekly testing with Prince William County (RPAC-I Region 7), Stafford County (RPAC-I Region 7), Fauquier County, King George County (RPAC-I Region 1), Louisa County, Culpepper County, Orange County, City of Fredericksburg, and the Virginia State Police. COMLINC testing is from RIOS gateway to RIOS gateway; there is no radio patching involved with testing in RPAC-I Region 2.

RPAC-I Region 2 does not fully utilize the capability of COMLINC to talk from locality to locality. The primary reasons for localities not using COMLINC are:

- Equipment does not work due to technical reasons
- Equipment is not reliable
- Equipment is not currently installed or connected
- Need improved connection
- Localities around them do not utilize COMLINC
- Lack of ongoing training
- Physical location of COMLINC client is too remote

Several localities utilize COMLINC for situational awareness; where they monitor a neighbor's radio frequency for situational awareness. Also, Spotsylvania County utilizes COMLINC to communicate with the Department of Game and Inland Fisheries.

The Harrisonburg-Rockingham system has upgraded to the new RIOS revision 3.44 and is using RIOS LiTE (an app on an Android or Apple smartphone). The app allows the user to tie into a selected radio system through the use of a smartphone, including Push-To-Talk (PTT) functionality.

COMLINC EVALUATION

With respect to interoperability, the majority of localities in RPAC-I Region 2 utilize shared radios, shared frequencies, phone, SIRS and in some cases, a Regional radio system as the means of interoperability. (Regional radio systems span multiple jurisdictions and possible Regional boundaries).

COMLINC is not the tool of choice for interoperability in RPAC-I Region 2. Finally, it has been suggested that COMLINC may be best suited for planned events in this region provided all the equipment is upgraded to the same level. COMLINC can bring value by bridging public safety agencies to other all-hazards stakeholders within the region.

3.4.3 RPAC-I Region 3

RPAC-I Region 3 is comprised of many smaller individual radio systems and some larger regional radio systems. Based upon the compiling of surveys and the SyTech records, all localities in RPAC-I Region 3 have COMLINC equipment (RIOS Gateway), with the exception of Lunenburg. With regard to the primary objective of COMLINC, the majority of localities in this region do not use COMLINC to communicate with state agencies, with the exception of Charlottesville-UVA-Albemarle County.

With regard to utilizing COMLINC to talk directly with state agencies there have been instances where there is a desire to connect with state agencies, however state dispatcher manpower or some other personnel related issues caused the interoperability attempt to fail. This lack of personnel is also an issue for smaller localities who only have one or two dispatchers on a shift.

RPAC-I Region 3	Do you have COMLINC	Do you use COMLINC	Do you use COMLINC with State Agencies
Amherst	Yes	No	No
Appomattox	Yes	Rarely	No
Augusta	Yes	Yes	Yes
Buckingham	Yes	No	Yes
Campbell	Yes	Rarely	No
Charlotte	Yes	No	No
Charlottesville-UVA-Albemarle	Yes	Yes	Yes
Cumberland	Yes		
Farmville	Yes	Rarely	Yes
Fluvanna	Yes	No	No
Greene	Yes		
Halifax	Yes	No	No
Lunenburg	No	No	No
Lynchburg	Yes	Rarely	No
Mecklenburg	Yes	Rarely	No
Nelson	Yes	Rarely	Yes
Staunton	Yes		
Waynesboro	Yes	Rarely	No

RPAC-I Region 3 does not fully utilize the capability of COMLINC to talk from locality to locality. The primary reasons for localities not using COMLINC are:

- Equipment does not work due to technical reasons
- Equipment is not reliable
- Equipment is not installed or connected

COMLINC EVALUATION

- The system uses too much bandwidth
- Localities around them do not utilize COMLINC
- Lack of ongoing training
- Physical location of COMLINC client is too remote
- Incorrect direction provided about how and when to utilize COMLINC

As a side note with regard to RPAC-I Region 3, Charlottesville-UVA-Albemarle County system has upgraded to RIOS version 3.44 and is actively using RIOS LiTE and COMLINC. (RIOS LiTE is an app on an Android or Apple smartphone). The app allows the user to tie into a selected radio system through the use of a smartphone. This includes PTT (Push-To-Talk) functionality.

RPAC-I Region 3 has a wide range of operational situations and while localities want to talk to state agencies and each other, the difference of communications environments makes it difficult. Localities share radios, share frequencies, phone, radio system patching, or communicate via SIRS.

Most jurisdictions in RPAC-I Region 3 want to cooperate and talk to each other and state agencies; however, COMLINC has not become the interoperability tool of choice for this region. COMLINC can bring value by bridging public safety agencies to other all-hazards stakeholders within the region.

3.4.4 RPAC-I Region 4

Based upon the compiling of surveys and the SyTech records, all localities in RPAC-I Region 4 have COMLINC equipment (RIOS Gateway). With regard to the primary objective of COMLINC, localities in this region do not use COMLINC to communicate directly with state agencies because they are not allowed to talk directly to a trooper in this region. However, there is a protocol with state agencies to allow dispatch to monitor locality channels for situational awareness during a planned or unplanned event. Moreover, it has been suggested that there are some localities that would like to talk directly to agencies such as VDOT.

RPAC-I Region 4	Do you have COMLINC	Do you use COMLINC	Do you use COMLINC with State Agencies
Bland	Yes	No	No
Bristol	Yes	Yes	
Buchanan	Yes	No	No
Dickenson	Yes	No	No
Giles	Yes	No	No
Lee	Yes	No	No
Norton	Yes	Yes	Yes
Pulaski	Yes	Rarely	Yes
Russell	Yes		
Scott	Yes	Testing	Yes
Smyth	Yes	No	No
Tazwell County	Yes	Yes	No
Twin County*	Yes	Testing	No
Washington	Yes	Rarely	Yes
Wise	Yes	Rarely	Yes
Wythe	Yes	Yes	Yes

* Twin County is comprised of Grayson, Galax, and Carroll

RPAC-I Region 4 does not fully utilize the capability of COMLINC to talk from locality to locality. The primary reasons for localities not using COMLINC are:

- Equipment does not work due to technical reasons
- Equipment is not reliable
- Equipment is not installed or connected
- Physical location of COMLINC client is too remote

Although many localities do not use COMLINC on a regular basis, there are others that use COMLINC for planned or unplanned events, primarily with the RIOS mobile setup. In RPAC-I Region 4, there are portable RIOS set-ups. These units can be quickly set up for emergency situations and for planned events.

There are other successes in RPAC-I Region 4 too. For instance, the City of Bristol uses COMLINC to talk to surrounding agencies and Washington County. Tazewell uses COMLINC for situational awareness. Twin Counties use RIOS Mobile for unplanned emergencies and planned events. There are couple of localities utilizing COMLINC for gateway-to-gateway testing.

In RPAC-I Region 4, using COMLINC for interoperability can be problematic for jurisdictions with three or less radio frequencies/channels as it ties up a large amount of radio resources. As an alternative, localities monitor radio traffic in other jurisdictions, giving the dispatchers real-time situational awareness, which is passed on to the first responders in the field.

The majority of localities in RPAC-I Region 4 utilize shared radios, shared frequencies, phone, SIRS, and interoperability and mutual aid channels. Most jurisdictions in RPAC-I Region 4 want to cooperate and talk to each other and state agencies; however, COMLINC has not become the interoperability tool of choice for this region. COMLINC can bring value by bridging public safety agencies to other all-hazards stakeholders within the region.

3.4.5 RPAC-I Region 5

Based upon the compiling of surveys and the SyTech records, 33% of the localities in RPAC-I Region 5 have COMLINC equipment (RIOS Gateway), and those that have the equipment are not actively using the system. With regard to the primary objective of COMLINC, the localities in this region do not use COMLINC to communicate with state agencies, with the exception of Greenville.

The City of Suffolk has a bus or command vehicle that has COMLINC, but they do not use it on a daily basis. Hampton is reported not to use COMLINC as they have ORION.

The Eastern Shore 911 PSAP in Accomack has COMLINC. Currently they have eight (8) potential patch capabilities, but only six (6) of the eight (8) work well. Attempts have been made to correct the issue on the two (2) that lack functionality. However, efforts have not been successful to date. The Accomack system lacks sustainment funding and upkeep to be effective.

COMLINC EVALUATION

RPAC-I Region 5	Do you have COMLINC	Do you use COMLINC	Do you use COMLINC with State Agencies
Brunswick	Yes	No	No
Chesapeake	No	No	No
Eastern Shore*	Yes	Rarely	Yes
Emporia	Yes	No	No
Franklin City	No	No	No
Gloucester	No	No	No
Greensville	Yes	Rarely	Yes
Hampton	No	No	No
Isle of Wight	No	No	No
James City	No	No	No
Mathews	No	No	No
Middlesex	No	No	No
Newport News	No	No	No
Norfolk	No	No	No
Portsmouth	No	No	No
Southampton	No	No	No
Suffolk	Yes	Yes	
Surry	No	No	No
Sussex	Yes	No	No
Virginia Beach	No	No	No
York-Poquoson-Williamsburg	Yes	No	No
* Eastern Shore is comprised of Accomack and Northampton			

There are regional systems throughout this region. The presence of these regional radio systems makes radio interoperability achievable with adjoining jurisdictions; however, not without costs and planning. Additionally, the Hampton Roads area utilizes an interoperability overlay called ORION. VSP uses the ORION network on a limited basis to talk to localities. Furthermore, the Commonwealth of Virginia Port Authority (VPA) is currently utilizing this network. ORION was implemented without a sustainability plan and is facing the challenges of technical obsolescence and a funding deficit.

RPAC-I Region 5 does not fully utilize the capability of COMLINC to talk from locality to locality, yet the need for interoperability in RPAC Region 5 does exist. The primary reasons for localities not using COMLINC are:

- Equipment does not work due to technical reasons
- Equipment is not reliable
- Equipment is not installed or connected
- Lack of ongoing training
- Physical location of COMLINC client is too remote

Jurisdictions in the greater Hampton Roads area of RPAC-I Region 5 communicate with each other and state agencies by utilizing shared radios, SIRS (limited basis), ORION, and regional systems. The remainder of RPAC-I Region 5 has a wide range of operational situations, and while localities want to communicate with each other and state agencies, the disparity of communications environments makes it difficult. COMLINC can bring value by bridging public safety agencies to other all-hazards stakeholders within the region.

COMLINC EVALUATION

3.4.6 RPAC-I Region 6

Based upon the compiling of surveys and the SyTech records, slightly over 60% of the localities in RPAC-I Region 6 have COMLINC equipment (RIOS Gateway). With regard to the primary objective of COMLINC, the majority of localities in this region do not use COMLINC to communicate with state agencies, except for testing.

Localities utilize shared radios, shared frequencies, phone, and SIRS as the means of interoperability. There is also a regional system in the Roanoke area.

RPAC-I Region 6	Do you have COMLINC	Do you use COMLINC	Do you use COMLINC with State Agencies
Alleghany	No	No	No
Bath	No	No	No
Bedford	Yes	Rarely	Yes
Botetourt	Yes	Yes	Yes
Covington	No	No	No
Craig	Yes	No	No
Danville	No	No	No
Floyd	No	No	No
Franklin County	Yes	Testing	No
Highland	No	No	No
Martinsville-Henry	Yes	Yes	
New River Valley	Yes	No	No
Patrick	Yes	No	No
Pittsylvania	No	No	No
Radford	No	No	No
Roanoke City	Yes	Yes	No
Roanoke County	Yes	Yes	Yes
Rockbridge	Yes	Yes	Yes
Salem	Yes	Testing	No

RPAC-I Region 6 does not fully utilize the capability of COMLINC to talk from locality to locality.

The primary reasons for localities not using COMLINC are:

- Equipment does not work due to technical reasons
- Equipment is not reliable
- Equipment is not installed or connected
- Need improved connection
- Localities around them do not utilize COMLINC
- Lack of ongoing training
- Physical location of COMLINC client is too remote

Jurisdictions in the Roanoke area of RPAC-I Region 6 communicate with each other and state agencies by utilizing shared radios, shared frequencies, phone, mutual aid channels, and regional systems. RPAC-I Region 6

COMLINC EVALUATION

has a wide range of operational situations and while localities want to talk to each other and state agencies, the disparity of communications environments makes it difficult. COMLINC is used for roll calls and events in the Roanoke Valley, but it is not the interoperability tool of choice for this region. COMLINC can bring value by bridging public safety agencies to other all-hazards stakeholders within the region.

3.4.7 RPAC-I Region 7

Based upon the compiling of surveys and the SyTech records, the localities in RPAC-I Region 7 all have COMLINC equipment (RIOS Gateway), with the exception of Fairfax, Falls Church, and Manassas Park. The majority of localities in this region do not use COMLINC to communicate with state agencies, with the exception of Prince William County, who participates in roll calls and testing with RPAC-I Region 2. With regard to the primary objective of COMLINC, localities in this region do not use COMLINC to communicate directly with state agencies.

RPAC-I Region 7	Do you have COMLINC	Do you use COMLINC	Do you use COMLINC with State Agencies
Alexandria	Yes	No	No
Arlington	Yes	No	No
Fairfax	No	No	No
Falls Church	No	No	No
Loudoun	Yes		
Manassas	No	No	No
Manassas Park	No	No	No
Prince William County	Yes	Testing	No
Stafford	Yes	Testing	No

Localities in RPAC-I Region 7 have worked together to program talk groups into each other’s radio systems. The majority of the localities have P25 radio systems, providing them radio interoperability with surrounding Commonwealth localities. Furthermore, the interoperability extends to include Montgomery County Maryland, Prince Georges County Maryland and the District of Columbia.

RPAC-I Region 7 does not fully utilize the capability of COMLINC to talk from locality to locality. The primary reasons for localities not using COMLINC are:

- Equipment is not installed or connected
- Localities around them do not utilize COMLINC

Due to the sophistication of the RPAC-I Region 7 public safety radio systems and the built-in high capacity factor, COMLINC may not be the most efficient means of interoperability amongst the areas primary public safety partners. However, COMLINC (versus other technologies such as ISSI interface) can bring value by bridging public safety agencies to other all-hazards stakeholders within the region.

COMLINC EVALUATION

3.4.8 State Agencies

Based upon the compiling of surveys and the SyTech records, 89% of the state agencies/departments, as represented on the Commonwealth SIEC, have COMLINC equipment (RIOS Gateway). Five (5) regularly use COMLINC and one (1) rarely use COMLINC.

STATE AGENCIES	Do you have COMLINC	Do you use COMLINC
Department of Fire Programs	No	No
Department of Military Affairs	Yes	Yes
Virginia Department of Emergency Management	Yes	Yes
Virginia Communications Caches*	Yes	Yes
Virginia Department of Health	Yes	Yes
Virginia Department of Transportation	Yes	Rarely
Virginia Information Technologies Agency	No	No
Virginia State Police	Yes	Yes
* Virginia Communications Cache is not a state agency, it falls under the control and operation of VDEM.		

3.4.8.1 Department of Fire Programs

The Department of Fire Programs does not utilize COMLINC. This state agency has a training mission, not an operational mission.

While the use of COMLINC may not be of institutional value, this agency could provide the critically needed ongoing training component to ensure the success of COMLINC.

3.4.8.2 Department of Military Affairs

The Department of Military Affairs does not use COMLINC often, but when an emergency arises, it is a critical communications tool. In the case of an emergency, they use COMLINC to talk with small, disparate systems.

Military Affairs contends COMLINC should fall under a single agency, such as VSP, to make it easier to set up when a disaster occurs. This allows continuity of coordination and operations during times of emergency.

Lack of ongoing training is cited as a contributing factor to COMLINC's lack of use.

3.4.8.3 Virginia Department of Emergency Management (VDEM)

VDEM has recently installed RIOS version 3.44, to include RIOS LiTE. VDEM typically uses COMLINC as a situational awareness tool rather than utilizing it to patch different entities or groups together. VDEM also uses COMLINC for planned events. VDEM does not consider COMLINC a mission-critical tool and has had about a fifty percent (50%) success rate with the RIOS LiTE smartphone app.

VDEM has experienced technical issues after SyTech RIOS sends out updates; although they report the technical problems have been diminishing since the installation of the upgraded system.

The Virginia Communications Caches are part of VDEM. The Caches are an all-hazards team, and as such, utilize several tools to complete their mission. When the need for a gateway is identified, the solution selected and utilized is often the system that meets or exceeds the scenario presented to the teams. Some scenarios require a low-tech solution while other scenarios may offer a more complex integration to a larger communications system. The VCC does not endorse one solution over another and will always select the best gateway that supports the needs of their mission.

COMLINC is a gateway that has been utilized multiple times to fulfill an interoperability requirement. In some cases, the system was used as a true gateway, such as the civil unrest events in Charlottesville VA in 2017 and 2018. The teams have also learned how to adapt it into a tactical dispatch console, as demonstrated by the 2016 VP Debate in Farmville, Virginia. The RIOS product has also been used as a tactical communications recorder at an incident scene so that an accurate account of activities could be made available through FOIA or court case.

3.4.8.4 Virginia Department of Health (VDH)

Usage of the COMLINC system varies by Virginia Hospital and Healthcare Association (VHHA) Region from daily to infrequently. The VHHA represents the hospitals collectively to VDH. Each of the six (6) VDH regions has a Primary Regional Hospital Coordinating Center (RHCC) and an Alternate RHCC, except the Far Southwest, where an Alternate site is yet to be determined. Each Primary and Alternate site has a COMLINC gateway. When the Public Safety Interoperable Communications (PSIC) Project was completed, 104 hospitals each had a RIOS client to connect to the primary and alternate gateway in the region. Each of the COMLINC gateways was equipped with a radio with the same programming as the hospitals in that region.

Only the hospitals that housed gateways received a client computer for the Hospital Coordination Center (HCC). All other hospitals were provided a computer for the RIOS Client. The hospitals provide internet connections and IT support for the gateways and computer clients on a voluntary basis. VDH does not have the authority to require hospitals use the COMLINC System, though it is highly recommended.

3.4.8.5 Virginia Department of Transportation (VDOT)

VDOT primarily uses COMLINC to monitor localities and STARS, so the COMLINC system is used as primarily a radio receiver resource. COMLINC is not frequently used as a patch to localities, but as a radio transmit (PTT—Push-To-Talk) resource.

With regard to the Regional Traffic Operations Centers, VDOT has five (5) Regional Traffic Operations Centers around the Commonwealth; four (4) of the five (5) Traffic Operations Centers utilize COMLINC as a dispatch tool. VDOT has COMLINC set to a specific STARS talk group.

VDOT also has the capability via COMLINC to patch VDOT LOW Band operations to a STARS operational talk group. In that regard, there is a success story in the Hampton Roads area. VDOT tied in their low band system to a STARS talk group, which was left in as a permanent patch early this year, for about five (5) to six (6) months with great success.

3.4.8.6 *Virginia Information Technology Agency (VITA)*

VITA does not have COMLINC equipment.

VITA has extensive contact with localities and notes that localities have cobbled together different ways to talk with those around them. What these localities do not know is what possibilities interoperability could create. Localities have a great need for a daily-use option to establish communications with neighbors, however many localities need to achieve operability before interoperability.

VITA believes COMLINC is a good concept, but it is not implemented well due to starting as a way to spend unsustainable grant money. VITA believes Commonwealth Interoperability should be a “three-legged stool” of linked systems: COMLINC, Radio Caches, and Interoperability Channels.

3.4.8.7 *Virginia State Police (VSP)*

VSP use of COMLINC is operationally dependent, limited to major events and the localities in Region 3, 4, and 7. VSP currently dispatches for twenty-one (21) state agencies, with over six thousand (6,000) users and often COMLINC cannot be used to patch because VSP only has two (2) dispatchers on duty and they do not have the capacity to use the COMLINC terminal.

COMLINC is part of the dispatcher in-services training which takes place every two years. While any training is beneficial, VSP believes additional dispatcher training is needed to realize the full potential of COMLINC. VSP also acknowledges integrating roll calls for each shift helps all dispatchers (state and localities) become more proficient using COMLINC.

VSP recognizes there are dispatcher operational changes that need to occur to utilize COMLINC to its fullest potential. This includes developing Standard Operating Procedures that are adopted consistently and used by all COMLINC participants.

VSP does not fully utilize the capability of COMLINC to talk to localities. The primary reasons for not using the system are:

- Lack of ongoing training
- Physical location of COMLINC client is too remote
- Lack of dispatchers

VSP uses ORION to talk to the Virginia Port Authority (VPA), Virginia Beach, and most of the Hampton Roads area localities. VSP also uses SIRS in rural areas.

VSP currently uses COMLINC to communicate with the Federal Bureau of Investigations (FBI) and has a need to communicate with other federal partners such as the Drug Enforcement Administration (DEA), Immigration and Customs Enforcement (ICE), Federal Marshalls Office, and the Bureau of Alcohol Tobacco Firearms and Explosives (ATF).

VSP is very concerned about the security of COMLINC, as the equipment is outdated and it uses outdated software and security protocols that do not meet VITA Information Technology Resource Management (ITRM)

COMLINC EVALUATION

Policies, Standards & Guidelines Information Security guidelines SEC 501²⁸.

VSP is agreeable to maintain COMLINC, which is an efficient and effective solution, as they currently have technicians across the Commonwealth maintaining STARS. However, funding for staff to properly maintain COMLINC is essential. As COMLINC has been implemented across the Commonwealth, VSP technicians have found it problematic to properly maintain COMLINC in addition to the daily responsibilities of maintaining STARS. When COMLINC was initially created, VSP requested four (4) full time equivalent positions to properly maintain COMLINC statewide and these positions have not yet been authorized and funded.

VSP personnel have been supporting COMLINC on a regular basis over the last eleven (11) years. While VSP has taken on this responsibility, to help keep a critical and aged statewide interoperability system operational, it does not go without notice that deprived of the necessary funding, even the best efforts of already overburdened VSP technicians will not be sufficient to keep the current or an upgraded COMLINC network operational.

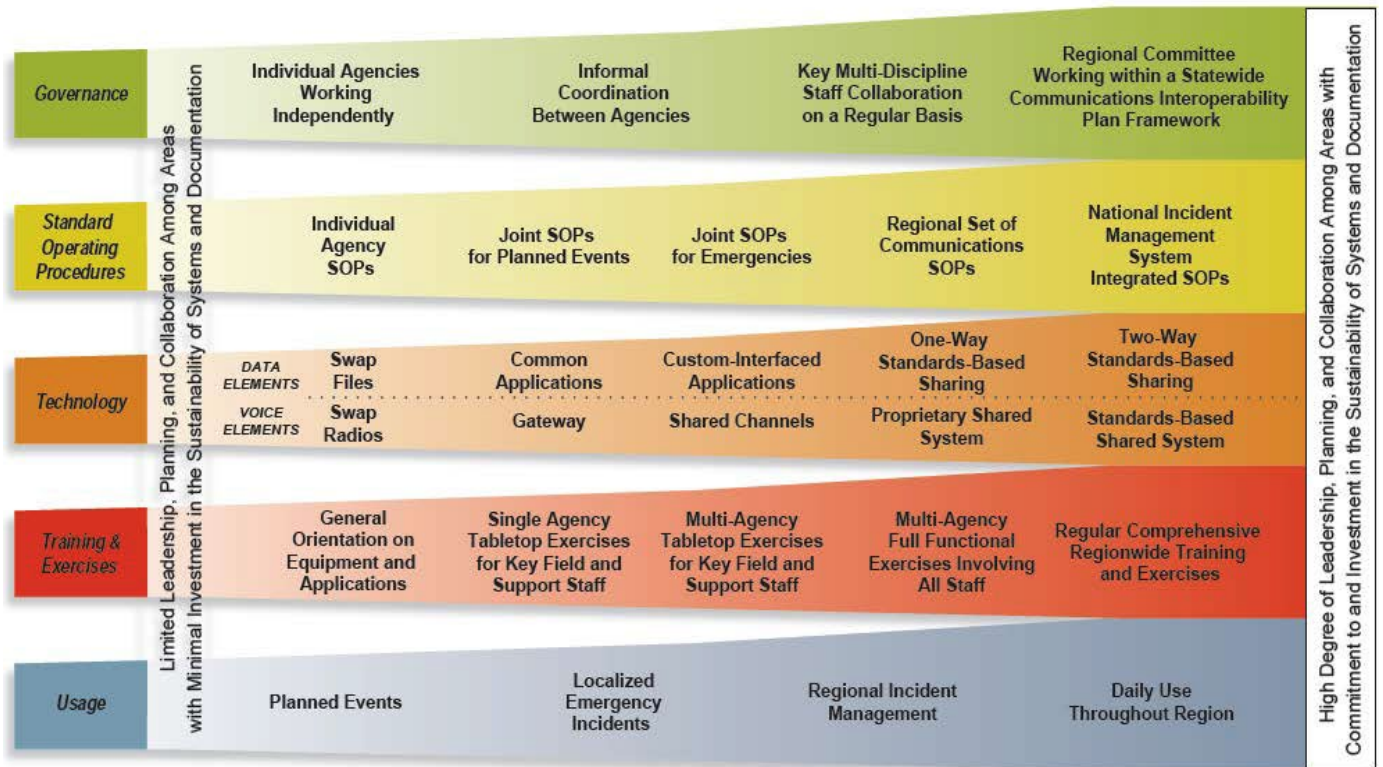
²⁸ https://www.vita.virginia.gov/media/vitavirginiagov/commonwealth-security/docs/Information_Security_Standard_SEC501-10.pdf The intent of this Information Security Standard is to establish a baseline for information security and risk management activities for agencies across the Commonwealth of Virginia (COV).

4 COMLINC GAPS

This section addresses the gaps in Governance, Standard Operating Procedures, Technology, Training & Exercise, and Usage for each region and the state agencies:

4.1 RPAC-I Region 1
4.2 RPAC-I Region 2
4.3 RPAC-I Region 3
4.4 RPAC-I Region 4
4.5 RPAC-I Region 5
4.6 RPAC-I Region 6
4.7 RPAC-I Region 7
4.8 State Agencies

The Interoperability Continuum is the foundational model for interoperability standards and is designed to guide emergency response agencies and policy makers to plan and implement interoperability solutions for data and voice communications. This tool identifies five (5) critical success elements that must be addressed to achieve a sophisticated interoperability solution: governance, standard operating procedures (SOPs), technology, training and exercises, and usage of interoperable communications.



Jurisdictions across the Nation can use the Interoperability Continuum to track progress in strengthening interoperable communications.²⁹ While the COMLINC RIOS system falls under the Gateway technology, its implementation requires consideration of each lane of the Interoperability Continuum to fully evaluate the gaps in successful implementation and use. The goal of the Interoperability Continuum is to move communications to the right of the continuum which represents full interoperability – both politically and operationally.

COMLINC is an agile, adaptable, scalable, and affordable interoperability system that supports all-hazards operations on demand. From a technology perspective, COMLINC can be programed in an ad hoc manner, allowing the gateways to be configured as needed. Additionally, the systems connected can be completely disparate regarding spectrum or operating systems (P25, analog, trunked, proprietary operating systems, etc.). Technical execution and gaps are evaluated on the Interoperability Continuum Technology Lane.

From an operational perspective COMLINC strategically allows for multi-agency communications (*primarily state agencies to localities*) in the event of a critical situation and also during pre-planned events. Operational execution and gaps are evaluated on the remaining lanes of the Interoperability Continuum.

4.1 *RPAC-I Region 1*

4.1.1 *Governance*

RPAC-I Region 1 does not have formal MOUs in place for the use of COMLINC and this is a barrier to continuity of operations. As a large region with a wide variety of operational situations, some Individual Agencies Work Independently and many have Informal Coordination Between Agencies as defined on the Interoperability Continuum Governance Lane.

4.1.2 *Standard Operating Procedures (SOP)*

RPAC-I Region 1 does not have formal SOPs in place for the use of COMLINC, which is a barrier to efficiently and effectively creating and maintaining a patch when an emergency occurs. Individual Agencies SOPs are utilized as defined on the Interoperability Continuum Standard Operating Procedures Lane.

4.1.3 *Technology*

Across the Commonwealth, the age and failing condition of the RIOS equipment creates a barrier to the reliable performance of COMLINC. Multiple localities operate in new dispatch or radio environments and COMLINC was not reinstalled in the new environment. An additional technology challenge is that many localities have only a single talk path, which is insufficient to support interoperability. Localities need more capacity to properly utilize COMLINC, or any interoperability system.

Dependent upon the locality, they either swap radios, occasionally use the COMLINC gateway, shared channels or talkgroups, or utilize SIRS as defined on the Interoperability Continuum Technology Lane.

²⁹https://www.dhs.gov/sites/default/files/publications/interoperability_continuum_brochure_2.pdf Homeland Security Interoperability Continuum Explained

COMLINC EVALUATION

4.1.4 Training & Exercises

In RPAC-I Region 1, initial training was provided; however, proved to be insufficient in most localities. Localities recognize the lack of ongoing training and exercises creates a barrier for the users to be comfortable with COMLINC and incorporate it into regular routines. Localities received General Orientation on Equipment and Applications as defined on the Interoperability Continuum Training & Exercise Lane.

4.1.5 Usage

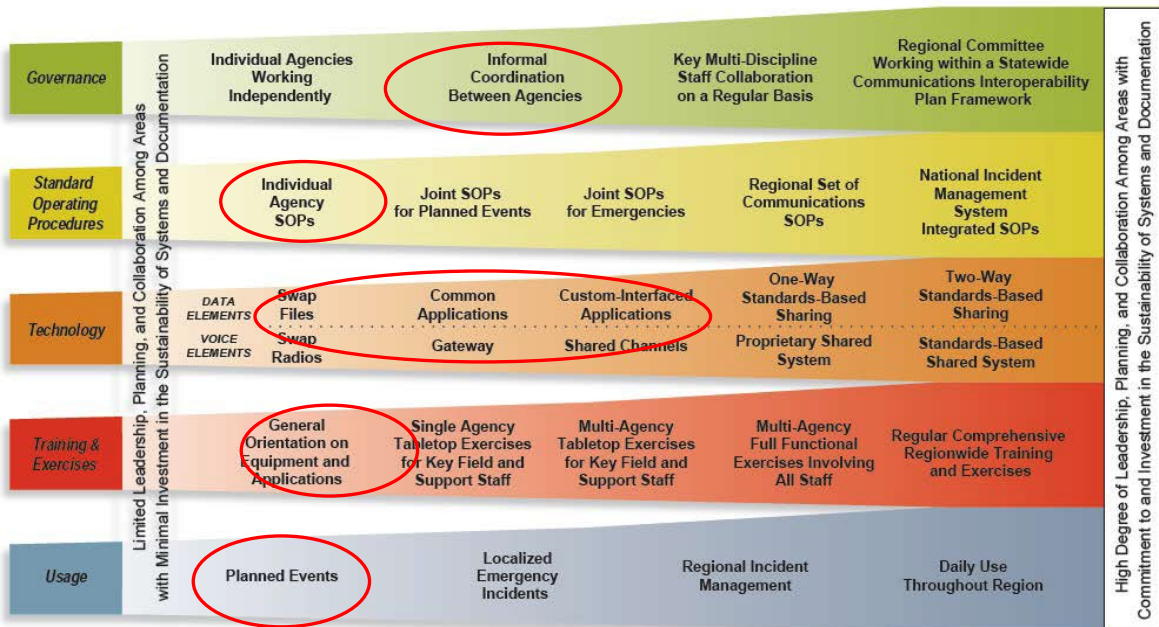
In RPAC-I Region 1, multiple localities test COMLINC on a semi regular basis; however, the use of COMLINC as an interoperability tool has not been incorporated into daily use throughout the region. Standardizing COMLINC’s Governance, Standard Operating Procedures, Technology implementation, and Training & Exercises will overcome the Usage barrier of COMLINC in this region.

Localities use COMLINC for testing and the occasional Planned Event as defined on the Interoperability Continuum Usage Lane.

4.1.6 Summary

In summary with regard to COMLINC use, RPAC-I Region 1 is in the beginning stages of the Interoperability Continuum and are making a good faith effort to work together.

With improved interoperability tools and a cohesive Regional Plan, RPAC-I Region 1 Plan, they can achieve interoperability with state agencies and other localities according to their needs.



4.2 *RPAC-I Region 2*

4.2.1 *Governance*

RPAC-I Region 2 does not have formal MOUs in place for the use of COMLINC and this is a barrier to continuity of operations. This is a smaller region and there is Informal Coordination Between Agencies as defined on the Interoperability Continuum Governance Lane.

4.2.2 *Standard Operating Procedures (SOP)*

RPAC-I Region 2 does not have formal SOPs in place for the use of COMLINC, which is a barrier to efficiently and effectively creating and maintaining a patch when an emergency occurs. Individual Agencies SOPs are utilized as defined on the Interoperability Continuum Standard Operating Procedures Lane.

4.2.3 *Technology*

In RPAC-I Region 2, the age and failing condition of the RIOS equipment creates a barrier to the reliable performance of COMLINC, with the notable exception of Harrisonburg-Rockingham who recently implemented the latest version of RIOS and RIOS LiTE. Many localities are on a shared system.

Dependent upon the locality, they either swap radios, occasionally use the COMLINC gateway, shared channels or talkgroups, and Standards Based Systems as defined on the Interoperability Continuum Technology Lane.

4.2.4 *Training & Exercises*

In RPAC-I Region 2, initial training was provided; however, proved to be insufficient in most localities. Localities recognize the lack of ongoing training and exercises creates a barrier for the users to be comfortable with COMLINC and incorporate it into regular routines. Localities received General Orientation on Equipment and Applications as defined on the Interoperability Continuum Training & Exercise Lane.

4.2.5 *Usage*

In RPAC-I Region 2, multiple localities test COMLINC on a regular basis; however, the use of COMLINC as an interoperability tool has not been incorporated into daily use throughout the region. Standardizing COMLINC's Governance, Standard Operating Procedures, Technology implementation, and Training & Exercises will overcome the Usage barrier of COMLINC in this region.

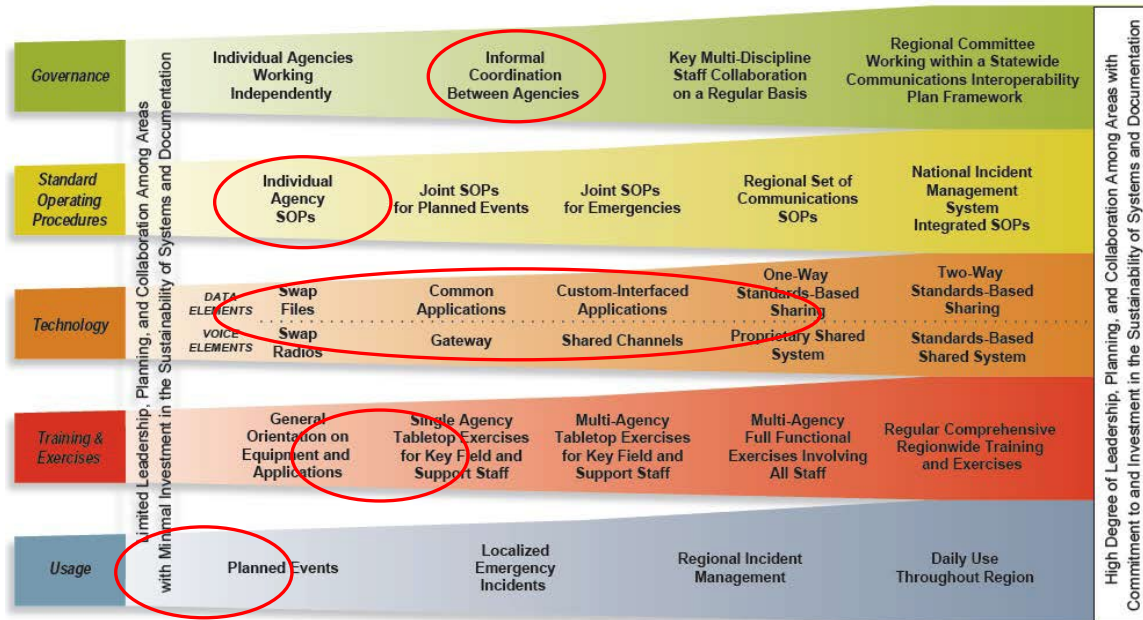
Localities use COMLINC for testing and the occasional Planned Event as defined on the Interoperability Continuum Usage Lane.

4.2.6 *Summary*

In summary with regard to COMLINC use, RPAC-I Region 2 is making good progress in Governance and technology and is working on the remaining lanes of the Interoperability Continuum. Additionally, RPAC-I, Region 2 is making a good faith effort to work together.

COMLINC EVALUATION

With improved interoperability tools and a cohesive RPAC-I, Region 2 Regional Plan, they can advance on the Interoperability Continuum lanes.



4.3 RPAC- I Region 3

4.3.1 Governance

RPAC-I Region 3 does not have formal MOUs in place for the use of COMLINC and this is a barrier to continuity of operations. As a medium sized region there are a wide variety of operational situations. Some Individual Agencies Work Independently and many have Informal Coordination Between Agencies as defined on the Interoperability Continuum Governance Lane.

4.3.2 Standard Operating Procedures (SOP)

RPAC-I Region 3 does not have formal SOPs in place for the use of COMLINC, which is a barrier to efficiently and effectively creating and maintaining a patch when an emergency occurs. Individual Agencies SOPs are utilized as defined on the Interoperability Continuum Standard Operating Procedures Lane.

4.3.3 Technology

In RPAC-I Region 3, the age and failing condition of the COMLINC systems creates a barrier to the reliable performance of this technology, with the notable exception of Charlottesville-UVA-Albemarle, who recently implemented the latest version of RIOS and RIOS LiTE. Multiple localities are on a shared system. Some localities need more capacity to properly utilize COMLINC.

Dependent upon the locality, they either swap radios, share channels or talkgroups, occasionally use the COMLINC gateway, or utilize SIRS as defined on the Interoperability Continuum Technology Lane.

COMLINC EVALUATION

4.3.4 Training & Exercises

In RPAC-I Region 3, initial training was provided; however, proved to be insufficient in many localities. Localities recognize the lack of ongoing training and exercises creates a barrier for the users to be comfortable with COMLINC and incorporate it into regular routines. Localities received General Orientation on Equipment and Applications as defined on the Interoperability Continuum Training & Exercise Lane. No sustainable ongoing training is currently offered.

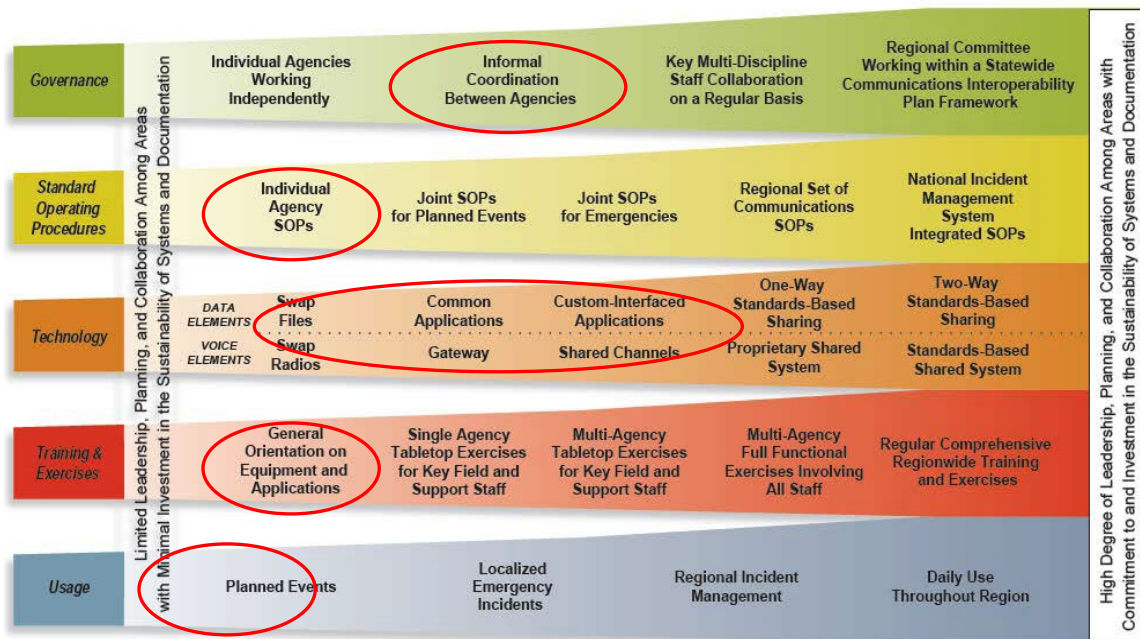
4.3.5 Usage

In RPAC-I Region 3, localities were initially testing COMLINC on a regular basis; however, as the systems became more unreliable, the testing stopped. The use of COMLINC as an interoperability tool has not been incorporated into daily use throughout the region. Standardizing COMLINC's Governance, Standard Operating Procedures, Technology implementation, and Training & Exercises will overcome the Usage barrier of COMLINC in this region.

Charlottesville-UVA-Albemarle recently utilized COMLINC in a large scale planned event staffed and supported by the VA Cache and VSP Communications technicians. Details of this usage are provided in section 7.1 COMLINC Success. Despite limitations, the COMLINC RIOS technology connected those that needed to be connected. Localities use COMLINC for the occasional Planned Event as defined on the Interoperability Continuum Usage Lane.

4.3.6 Summary

In summary with regard to COMLINC use, RPAC-I Region 3 is making some progress in Governance and is in the beginning stages of the remaining lanes of the Interoperability Continuum, making a good faith effort to work together. With improved interoperability tools and a cohesive Region 3 Regional Plan, they can advance on the overall Interoperability Continuum lanes.



4.4 RPAC-I Region 4

4.4.1 Governance

RPAC-I Region 4 does not have formal MOUs in place for the use of COMLINC and this is a barrier to continuity of operations. As a medium sized region with a wide variety of operational situations, Individual Agencies Work Independently as defined on the Interoperability Continuum Governance Lane.

4.4.2 Standard Operating Procedures (SOP)

RPAC-I Region 4 does not have formal SOPs in place for the use of COMLINC, which is a barrier to efficiently and effectively creating and maintaining a patch when an emergency occurs. Individual Agencies SOPs are utilized as defined on the Interoperability Continuum Standard Operating Procedures Lane.

4.4.3 Technology

In RPAC-I Region 4, the age and failing condition of the RIOS equipment creates a barrier to the reliable performance of COMLINC. Multiple localities operate in new dispatch or radio environments and COMLINC was not reinstalled in the new environment. An additional technology challenge is many localities only have a single talk path, which is insufficient. Localities need more capacity to properly utilize COMLINC.

Dependent upon the locality, they either swap radios, occasionally use the COMLINC gateway, share frequencies, and SIRS as defined on the Interoperability Continuum Technology Lane.

4.4.4 Training & Exercises

In RPAC-I Region 4, initial training was provided; however, proved to be insufficient in most localities. Localities recognize the lack of ongoing training and exercises creates a barrier for the users to be comfortable with COMLINC and incorporate it into regular routines. Localities received General Orientation on Equipment and Applications as defined on the Interoperability Continuum Training & Exercise Lane.

4.4.5 Usage

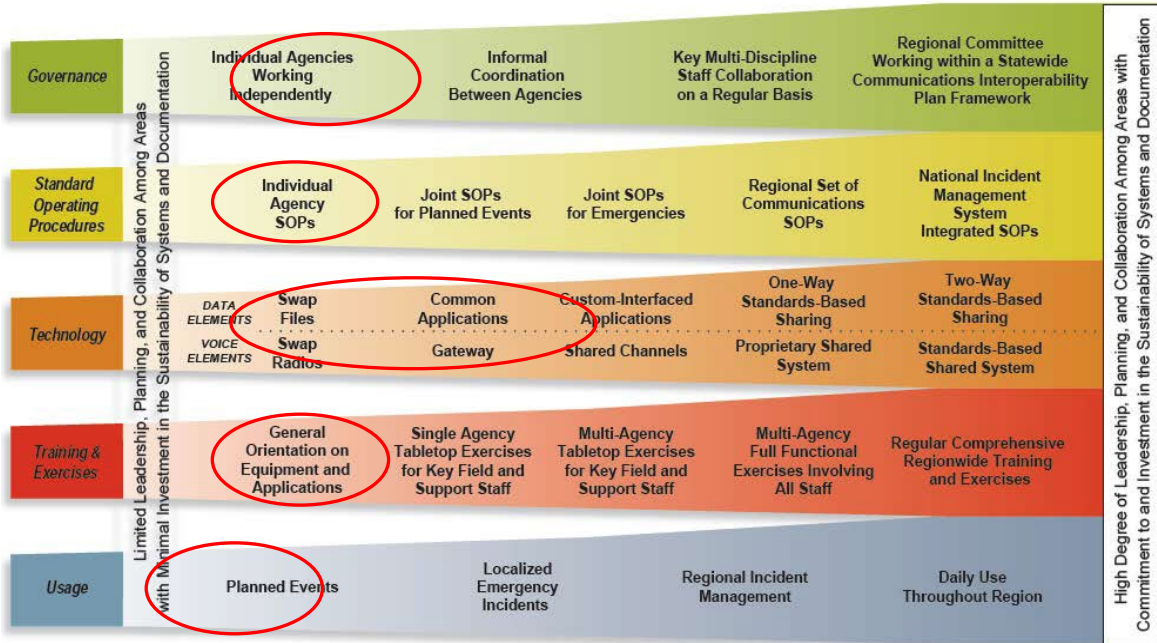
In RPAC-I Region 4, multiple localities occasionally test COMLINC and some localities tend to use COMLINC more than others. Standardizing COMLINC's Governance, Standard Operating Procedures, Technology implementation, and Training & Exercises will overcome the Usage barrier of COMLINC in this region.

Localities use COMLINC for testing and the occasional Planned Event as defined on the Interoperability Continuum Usage Lane.

COMLINC EVALUATION

4.4.6 Summary

In summary with regard to COMLINC use, RPAC-I Region 4 is in the beginning stages of the Interoperability Continuum and are making a good faith effort to work together. With improved interoperability tools and a cohesive Regional Plan, they can achieve full interoperability.



4.5 RPAC-I Region 5

4.5.1 Governance

RPAC-I Region 5 does not have formal MOUs in place for the use of COMLINC and this is a barrier to continuity of operations. There is a subset of localities in the region that work together and utilize the ORION Overlay for interoperability. This a large region and there is Informal Coordination Between Agencies for those not using ORION, and Key Multi-Discipline Staff Collaborating on a Regular Basis for those using ORION as defined on the Interoperability Continuum Governance Lane.

4.5.2 Standard Operating Procedures (SOP)

RPAC-I Region 5 does not have formal SOPs in place for the use of COMLINC, which is a barrier to efficiently and effectively creating and maintaining a patch when an emergency occurs. There are a group of localities in the Hampton Roads area that work together and utilize the ORION Overlay for interoperability. Individual Agencies SOPs are utilized for those not using ORION, and for those that are using ORION, Joint SOPs have been developed as defined on the Interoperability Continuum Standard Operating Procedures Lane.

4.5.3 Technology

In RPAC-I Region 5, the predominate issue is most localities do not have COMLINC equipment available to them. For those that do have COMLINC, the age and failing condition of the COMLINC systems creates a barrier to the reliable performance of this technology, with the notable exception of Suffolk who recently implemented the latest version of RIOS. The localities in the Hampton Roads area are on a shared system.

COMLINC EVALUATION

Dependent upon the locality, they either swap radios, occasionally use the COMLINC gateway, share channels, or share systems as defined on the Interoperability Continuum Technology Lane.

4.5.4 Training & Exercises

In RPAC-I Region 5, initial training was provided to the localities receiving COMLINC. Those meetings and information sessions have mostly dissolved due to lack of participation, funding, or interest. Localities recognize the lack of ongoing training and exercises creates a barrier for the users to be comfortable with COMLINC and incorporate it into regular routines. Localities received General Orientation on Equipment and Applications as defined on the Interoperability Continuum Training & Exercise Lane.

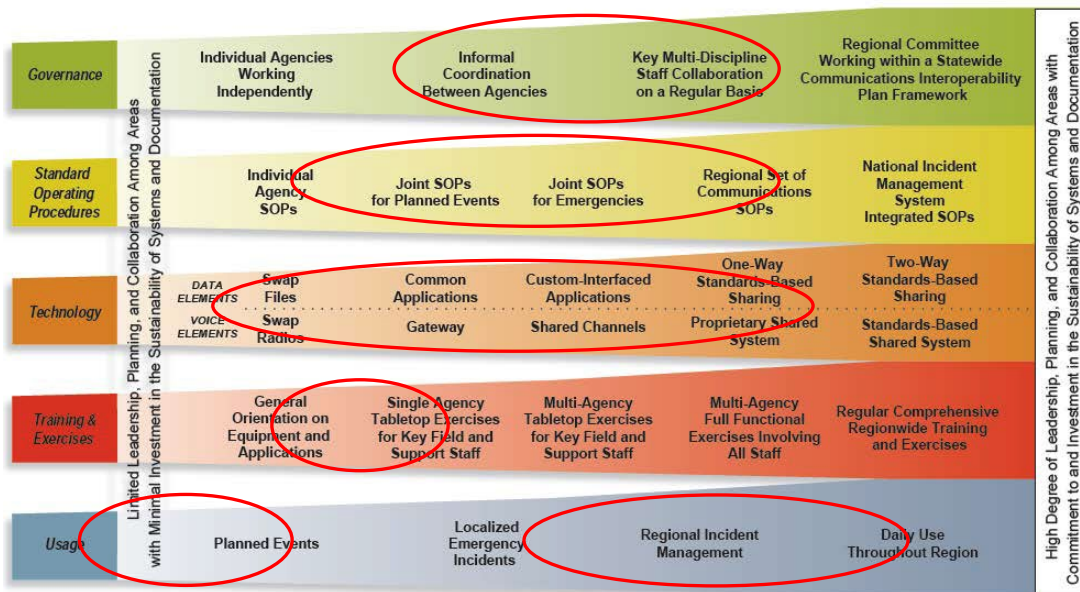
4.5.5 Usage

In RPAC-I Region 5, only a handful of localities rarely use COMLINC, and accordingly, the use of COMLINC as an interoperability tool has not been adopted in this region. The primary reason for this choice in the Hampton Roads area is the implementation of the ORION overlay. If COMLINC is to be adopted in RPAC-I Region 5, Standardizing COMLINC's Governance, Standard Operating Procedures, Technology implementation, and Training & Exercises will overcome the Usage barrier of COMLINC in this region.

The majority of localities do not use COMLINC and therefore do not register on the Interoperability Continuum Usage Lane. The localities in Hampton Roads that use ORION would be considered as fulfilling Localized Emergency Incidents and Regional Incident Management as defined on the Interoperability Continuum Usage Lane.

4.5.6 Summary

In summary with regard to COMLINC use, RPAC-I Region 5 is working well together and have a high level of interoperability, while the remainder of RPAC-I Region 5 is making progress in Governance and is in the beginning stages of the remaining lanes of the Interoperability Continuum and are making a good faith effort to work together. With improved interoperability tools and a cohesive Regional Plan, they can achieve full interoperability.



4.6 RPAC-I Region 6

4.6.1 Governance

RPAC-I Region 6 does not have formal MOUs in place for the use of COMLINC and this is a barrier to continuity of operations. As a large region with a wide variety of operational situations, some Individual Agencies Work Independently and many have Informal Coordination Between Agencies as defined on the Interoperability Continuum Governance Lane.

4.6.2 Standard Operating Procedures (SOP)

RPAC-I Region 6 does not have formal SOPs in place for the use of COMLINC, which is a barrier to efficiently and effectively creating and maintaining a patch when an emergency occurs. Individual Agencies SOPs are utilized as defined on the Interoperability Continuum Standard Operating Procedures Lane.

4.6.3 Technology

In RPAC-I Region 6, the age and failing condition of the RIOS equipment creates a barrier to the reliable performance of COMLINC. An additional technology challenge is that many localities have limited, insufficient talk paths. Localities need more capacity and improved system coverage to properly utilize COMLINC.

Dependent upon the locality, they either swap radios, occasionally use the COMLINC gateway, share channels, SIRS, and Regional Systems as defined on the Interoperability Continuum Technology Lane.

4.6.4 Training & Exercises

In RPAC-I Region 6, initial training was provided; however, proved to be insufficient in most localities. Localities recognize the lack of ongoing training and exercises creates a barrier for the users to be comfortable with COMLINC and incorporate it into regular routines. Localities received General Orientation on Equipment and Applications as defined on the Interoperability Continuum Training & Exercise Lane.

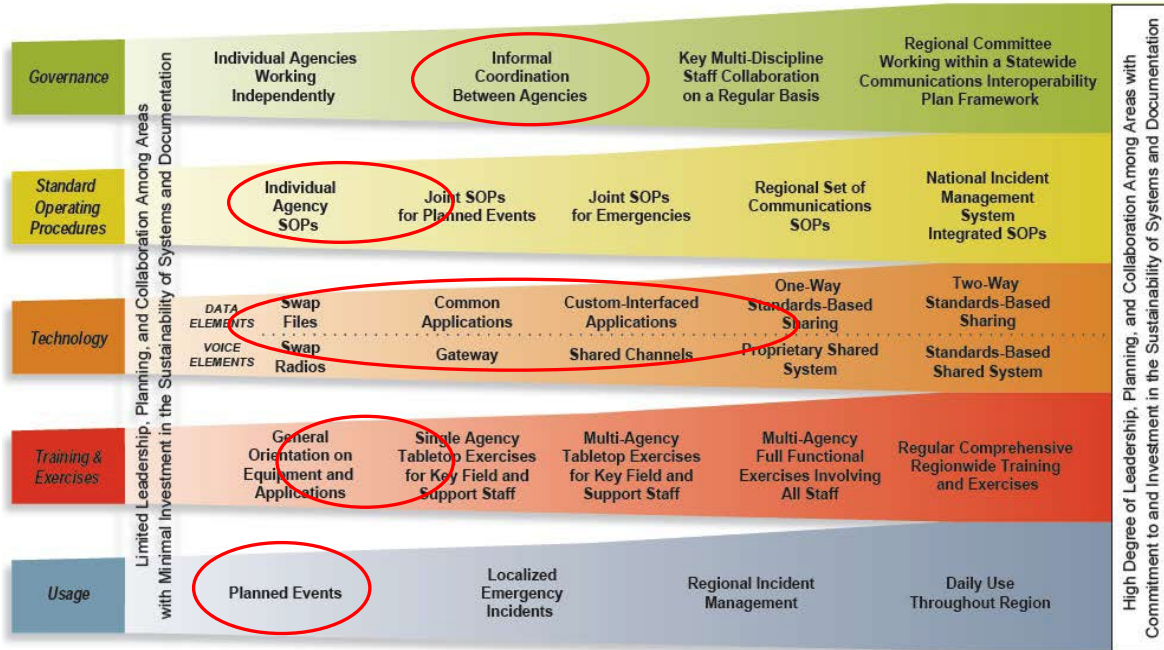
4.6.5 Usage

In RPAC-I Region 6, multiple localities in and around the Roanoke Valley test COMLINC on a daily basis; however, the use of COMLINC as an interoperability tool has not been incorporated into daily use throughout the region. It was noted that usage has increased over the last five years. Standardizing COMLINC's Governance, Standard Operating Procedures, Technology implementation, and Training & Exercises will overcome the Usage barrier of COMLINC in this region. Localities use COMLINC for testing and the occasional Planned Event as defined on the Interoperability Continuum Usage Lane.

COMLINC EVALUATION

4.6.6 Summary

In summary with regard to COMLINC use, RPAC-I Region 6 is in the beginning stages of the Interoperability Continuum and are making a good faith effort to work together. With improved interoperability tools and a cohesive Regional Plan, Region 6 can advance on the overall Interoperability Continuum lanes.



4.7 RPAC-I Region 7

4.7.1 Governance

RPAC-I Region 7 does not have formal MOUs in place for the use of COMLINC and this is a barrier to continuity of operations. This is a smaller region with very cohesive regional radio systems. However, with respect to COMLINC, there is Informal Coordination Between Agencies as defined on the Interoperability Continuum Governance Lane.

4.7.2 Standard Operating Procedures (SOP)

RPAC-I Region 7 does not have formal SOPs in place for the use of COMLINC, which is a barrier to efficiently and effectively utilizing COMLINC. Individual Agencies SOPs are utilized as defined on the Interoperability Continuum Standard Operating Procedures Lane.

4.7.3 Technology

In RPAC-I Region 7, slightly over half of the localities have COMLINC and the age and deteriorating condition of these systems creates a barrier to the reliable performance of this technology. Localities are on a shared standards-based system.

COMLINC EVALUATION

Dependent upon the locality, they either swap radios, occasionally use the COMLINC gateway, share channels, and standards-based systems as defined on the Interoperability Continuum Technology Lane.

4.7.4 Training & Exercises

In RPAC-I Region 7, initial training was provided; however, proved to be insufficient in most localities. Localities recognize the lack of ongoing training and exercises creates a barrier for the users to be comfortable with COMLINC and incorporate it into regular routines. Localities received General Orientation on Equipment and Applications as defined on the Interoperability Continuum Training & Exercise Lane.

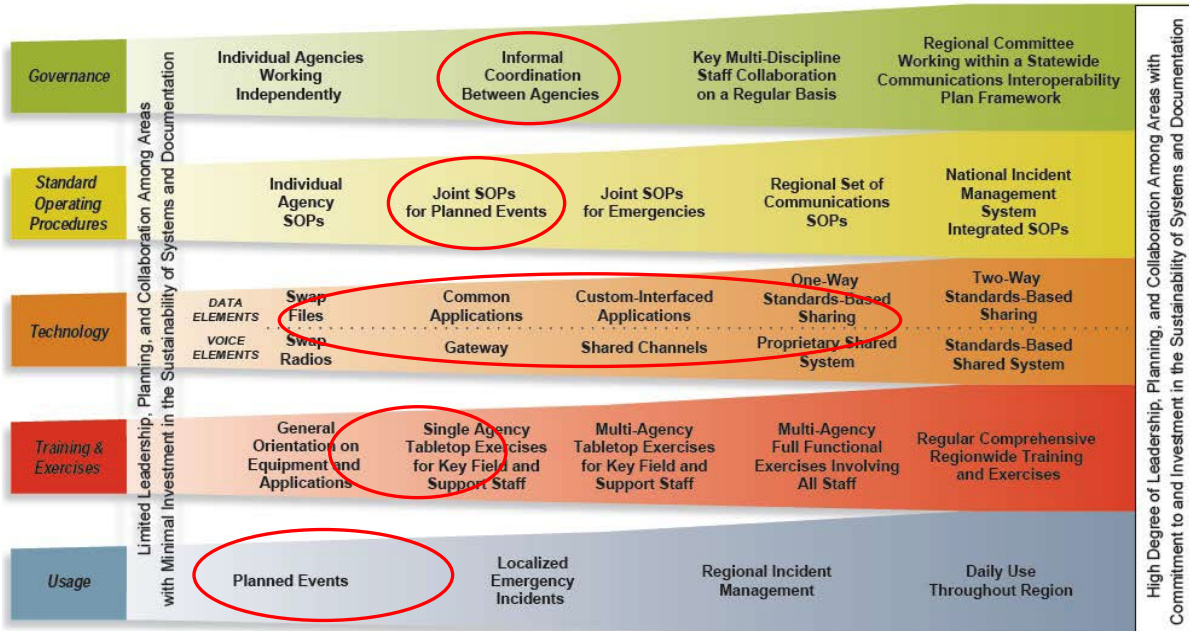
4.7.5 Usage

In RPAC-I Region 7, several localities test COMLINC with RPAC-I Region 2 on a regular basis; however, the use of COMLINC as an interoperability tool has not been incorporated into daily use throughout the region. Standardizing COMLINC's Governance, Standard Operating Procedures, Technology implementation, and Training & Exercises will overcome the Usage barrier of COMLINC in this region.

Localities use COMLINC for testing as defined on the Interoperability Continuum Usage Lane.

4.7.6 Summary

In summary with regard to COMLINC use, RPAC-I Region 7 has made good progress in Governance and Technology and is working on the remaining lanes of the Interoperability Continuum and are making a good faith effort to work together. With improved interoperability tools and a cohesive Regional Plan, they can move to the right within the interoperability Continuum.



4.8 State Agencies

4.8.1 Governance

In 2012, VSP developed a MOU for all participants on COMLINC. To date VSP has record of less than half of the localities having executed this MOU. It is also notable that the vast majority of *localities do not utilize COMLINC for interoperability with VSP*, therefore the MOU process has not measurably improved Interoperability in the Commonwealth. It is the struggle to implement the Governance piece of COMLINC that is the *most significant barrier to interoperability between state agencies and localities*.

State agencies are in the Informal Coordination Between Agencies as defined on the Interoperability Continuum Governance Lane.

4.8.2 Standard Operating Procedures (SOP)

State Agencies currently do not have formal SOPs in place for the use of COMLINC, which is a barrier to efficiently and effectively creating and maintaining a patch when an emergency occurs. Individual Agencies SOPs are utilized as defined on the Interoperability Continuum Standard Operating Procedures Lane.

4.8.3 Technology

For State Agencies, the age and failing condition of the COMLINC systems creates a barrier to the reliable performance of this technology.

Dependent upon who the state agency needs to talk with, they either swap radios, occasionally use the COMLINC gateway, or use SIRS as defined on the Interoperability Continuum Technology Lane.

4.8.4 Training & Exercises

State Agencies received initial training; however, this proved to be insufficient in most cases. State Agencies recognize the lack of ongoing training and exercises creates a barrier for the users to be comfortable with COMLINC and incorporate it into regular routines. State Agencies received General Orientation on Equipment and Applications as defined on the Interoperability Continuum Training & Exercise Lane.

4.8.5 Usage

State Agencies test COMLINC within several regions; however, the use of COMLINC as an interoperability tool has not been incorporated into daily use throughout all State Agencies. Standardizing COMLINC's Governance, Standard Operating Procedures, Technology implementation, and Training & Exercises will overcome the barrier to Usage of COMLINC for State Agencies.

State Agencies use COMLINC for testing and the occasional Planned Event as defined on the Interoperability Continuum Usage Lane.

COMLINC EVALUATION

4.8.6 Summary

In summary, State Agencies are making progress in Governance by issuing the MOU and they are in the beginning stages of the remaining lanes of the Interoperability Continuum and are making a good faith effort to work together. With improved interoperability tools and a cohesive Statewide Plan, they can achieve full interoperability.



5 COMLINC INFORMATION TECHNOLOGY (IT) / SECURITY

This section reviews the IT and Security guidelines and requirement for COMLINC.

5.1 IT Standards

5.2 Cyber Security

5.1 IT Standards

According to §2.2-2009 of the Code of Virginia, the Chief Information Officer (CIO) is charged with providing for the security of state government electronic information systems. As provide by the Commonwealth of Virginia Information Technology Resource Management Policy (GOV102-02) the CIO of the Commonwealth, directs the formulation and promulgation of Information Technology Resource Management (ITRM) policies, standards, and guidelines (PSGs) and other technology related PSGs as required by legislation or other mandates. The CIO directs the development of PSGs for the effective management of information technology investments throughout their entire life cycles, including, but not limited to, project definition, procurement, development, implementation, operation, performance evaluation, and enhancement or retirement.³⁰

The ITRM Framework provides the logical areas and sub-areas of control that together define a comprehensive information technology resource management program for the Commonwealth. The framework consists of four categories titled Security, Enterprise Architecture (EA), Project Management Division (PMD) and Information Technology Management. Within these broad categories, ITRM PSGs are developed and promulgated as needed.³¹

PSGs and supporting documents can also be separated into four tiers:

0. Enabling and cross-category documents – create and support the framework for IT Governance
1. The most important (highest level) documents for each category defined within the IT Governance framework
2. Additional policies, standards and guidelines for each framework category specific
3. IT Governance framework supporting documents that are not PSGs (templates, checklists, etc.)

The following diagram shows the current ITRM PSGs with their supporting documents separated by category and by tier.

³⁰ ITRM Policy GOV102-02 (<https://www.vita.virginia.gov/media/vitavirginiagov/it-governance/psgs/pdf/ITRMPolicyGO10202.pdf>)

³¹ COV ITRM Policies, Guidelines, Standards (PSGs) Brief & Supporting Documents (https://www.vita.virginia.gov/media/vitavirginiagov/it-governance/psgs/pdf/ITRMPSG_Brief_Supportdocs.pdf)

COMLINC EVALUATION

Commonwealth of Virginia Information Technology Resource Management (ITRM) Document Map for Policies, Standards, Guidelines & Supporting Documents: October 2015				
Category	Security	Enterprise Architecture (EA)	Information Technology Investment Management (ITIM)	Project Management (CPM)
Tier 0	ITRM Policy [01] ITIM Technology Management Policy [15] ITRM Governance Document Development Process Standard [02] ITRM Glossary [03] (Supporting Document)			
Tier 1	Security Policy [11] Security Standard [12] <u>Standards</u>	EA Policy [13] EA Standard [14]	ITIM Standard [16]	Project Management Standard [17] Program Management Standard [18]
Tier 2	Audit [21] Use of Non-Commonwealth Computing Devices to Telework [22] Removal of Commonwealth Data from Electronic Media [23] Secure Remote Access to Online Court Documents [24] Virginia Real Property Electronic Recording [25] IT Risk Management [36] <u>Guidelines</u> Security [26] Audit [27] Information Systems Facilities Security [28] Contingency Planning [29] Data Protection [30] Logical Access Control [31] Personnel Security [32] Risk Management [33] Threat Management [34] Asset Management [35]	Accessibility Standard [51] Model Virginia Map Accuracy Standards Guideline [53] VGIN Administrative Boundary Data Standard [54] Emergency Medical Services (EMS) Data Standard [55]		Project Manager Selection and Training Standard [71] Commonwealth Project Management Guideline [72] Commonwealth Program Management Guideline [73]
Tier 3	Templates [41]	EA Reports [61] EA Checklist [62] Data Dictionaries [63] Data Models [64]		Templates [74]

The Virginia Information Technologies Agency (VITA) supports the CIO in the development and adoption of PSGs:

- For the effective and efficient management of information technology;
- For the procurement of information technology and telecommunications goods and services of every description;
- For the efficient exchange of electronic information and technology, including infrastructure, between the public and private sectors in the Commonwealth; and,
- To promote efficiency and uniformity for information technology and related systems through the development of statewide technical and data standards.

5.2 Security

5.2.1 Cyber Security

Agency information security programs are built on the concept of public trust. An agency information security program provides a sustainable consistent approach to information safeguards that can be replicated across

paper and electronic files, systems, and transactions. The COV Information Security Program provides the framework and practices for agencies to use in securing their information. The COV Information Security Program is designed to provide direction and assistance to agencies in developing and implementing agency information security programs that reduce the risk to COV information irrespective of the medium containing the information.³²

The Commonwealth relies increasingly on electronic records utilizing information technology (IT) for the effective delivery of government services. Rapid and continuing technical advances have increased the dependence of COV agencies on IT and their reliance on various security measures to protect agency electronic information. This policy establishes the COV Information Security Program as a comprehensive framework for agencies to follow in developing agency security programs that protect their information.

The following principles guide the development and implementation of the COV Information Security Program.

1. COV sensitive information is:
 - A. A critical asset that shall be protected; and
 - B. Restricted to authorized personnel for official use.
2. Information security is:
 - A. A cornerstone of maintaining public trust;
 - B. Managed to address both business and technology requirements;
 - C. Risk-based and cost-effective;
 - D. Aligned with agency and COV priorities, industry best practices, and government requirements;
 - E. Directed by policy but implemented by business owners;
 - F. Applied holistically irrespective of medium.

5.2.2 Current Security Environment

Several factors have created a heightened security risk to the current COMLINC environment. A vulnerability to a single endpoint can produce a risk to the entire network, creating a need for improved security moving forward. Factors identified as contributing to this increased risk are:

Lack of Security Governance - From a security perspective, the current environment lacks the appropriate policies and oversight for the implementation, management, and operation of the COMLINC network. This increases the risk to the overall network for a variety of reasons, including equipment misuse, varying implementations of security controls, and differing configurations of endpoint systems.

Outdated Software - Limited funding for the COMLINC has led to many of the endpoint systems having outdated software. In fact, most of the endpoints are still running Windows XP, an operating system that Microsoft stopped supporting in April 2014. This creates a significant security risk in that since the end of support date, Microsoft no longer patches vulnerabilities identified within the operating system.

Gaps in Security Controls - COMLINC also has gaps in essential security controls that would benefit the overall protection of the network when corrected. This is primarily due to limited funding coupled with a lack of security governance to procure, direct the implementation of, and maintain these controls.

³² IT Information Security Policy SEC 519-00 (<https://www.vita.virginia.gov/media/vitavirginiagov/it-governance/psgs/pdf/InformationsecuritypolicySEC51900.pdf>)

5.2.3 *Future State of Security*

The Code of Virginia §2.2-603 mandates that each Agency Head is responsible for the security of the agency's electronic information, and for establishing and maintaining an agency information security program that is compliant with this policy and meets all of the requirements established by COV ITRM Security Standards.

COMLINC must pass sensitive data in a timely manner, thus it is critical to maintain data confidentiality and availability. To address the gaps identified with the current network, it is critical that a robust security governance structure be put in place to establish, implement, and enforce security policies for users and administrators of COMLINC. Further, as VSP is in a position to accept the role of operational owner, to manage and maintain COMLINC, they have provided a list of security requirements that need to be implemented to provide for data confidentiality and availability:

- Establish a network that is segmented from VSP network
- Restrict modification of COMLINC workstations to prevent alteration
- Provide VSP with the ability to patch endpoints and supporting systems to current levels within 7 days
- Implement antivirus that is updated within 1 day
- Implement server and workstation host-based firewalls
- Restrict local admin rights to only VSP support staff
- Provide VSP with a capability to scan and monitor for vulnerabilities
- Building in redundancy across network to mitigate single points of failure
- Implement data encryption at rest and in transit (AES 256 or better)
- Restrict router access to only vendor and VSP support staff
- Provide monitoring capability to continuously evaluate security health of COMLINC network (patching, antivirus, firewalls, other security tools)
- Support by workstation and/or server replacement
- Enable securely provisioned (authenticated and authorized) remote support by VSP support staff
- Provide VSP with the ability to change support and admin passwords
- Pre-identified ports and protocols to define access
- COMLINC network segment must be firewalled (VSP defined access control lists)
- Provide 24x7 security operations monitoring
- Provide 24x7 incident response capabilities

In addition to these controls, it is critical that Memorandums of Understanding (MOU) are in place to ensure all participants understand the security requirements to which they must adhere. This effort should be initiated and managed by the state agency that takes operational ownership of COMLINC; therefore, if it is decided that VSP will not be the operational owner, the Future State of Security must be revised by the operational owner.

6 COMLINC COST ESTIMATES

This section provides cost estimates for a 10-Year Life Cycle of COMLINC. The 10-Year Life Cycle costs are further broken out by year to provide an Annual Budget for financial planning purposes. Details are also shown in three major categories: modernization sustainment, and replacement.

6.1 COMLINC 10-Year Life Cycle Estimate
6.2 COMLINC 10 Year Annual Budget
6.3 RIOS Modernization Estimate
6.4 RIOS Sustainment Estimate
6.5 RIOS Replacement Estimate

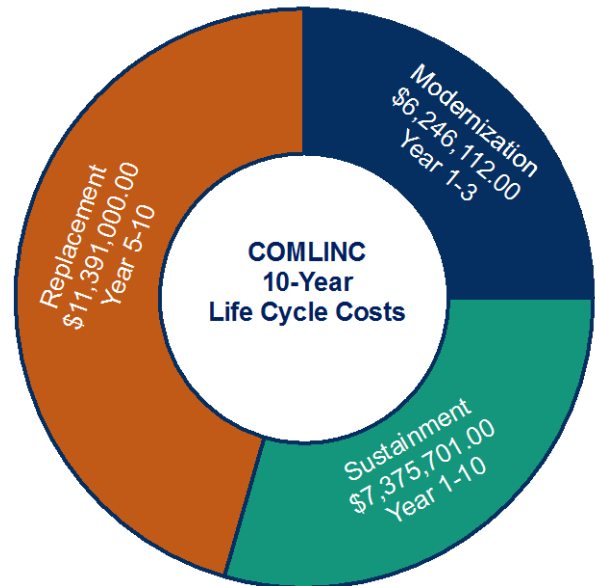
A description of the three categories of the COMLINC system are:

- Modernization estimate – this category provides estimates to refresh the existing RIOS system, including costs for equipment, spares, training, and expanding to include cities and counties that current do not have COMLINC. This category also includes the addition of state agencies and others that have expressed interest in COMLINC.
- Sustainment estimate – this category provides estimates to maintain the RIOS system and will provide details for both SyTech and VSP, both of which will be required to properly maintain the system.
- Replacement estimate – this category provides estimates to replace the client workstations as they will need replacement prior to a full system replacement. This category also provides estimates to replace the entire system, as is best industry practice, prior to the end of its useful life expectancy.

Each budgetary category is characterized by a consistent color, throughout this section, for ease of identification:

- Modernization – Blue
- Sustainment – Green
- Replacement – Orange

The total budgetary cost estimates for each of the COMLINC categories are:



COMLINC EVALUATION

6.1 10-Year Life Cycle Estimate

The 10-Year Life Cycle Estimate reflects the total required cost to refresh the current COMLINC RIOS system statewide, to include spare, training, expansion, and ten (10) years of maintenance.

COMLINC 10-Year Life Cycle Estimate	
\$25,012,813.00	
COMLINC Modernization Estimate	\$ 6,246,112.00
RIOS System Refresh Estimate	\$4,017,032.00
Fixed Site Hardware/Software Refresh	\$ 3,548,000.00
Mobile Command Vehicle Hardware/Software Refresh	\$ 335,352.00
Tactical RIOS Hardware/Software Refresh	\$ 133,680.00
RIOS System Spares Estimate	\$258,180.00
Recommended Spares Package	\$258,180.00
RIOS System Training Estimate	\$402,900.00
Onsite Training - Refresher	\$ 64,800.00
Onsite Training - Half Day Pre-Test, Two Full Days	\$ 313,600.00
Interactive Training Module (Unlimited Usage)	\$ 24,500.00
RIOS System Expansion Estimate	\$1,568,000.00
Counties Without COMLINC	\$ 840,000.00
Cities Without COMLINC	\$ 504,000.00
Additional Sites	\$ 224,000.00
COMLINC Sustainment Estimate	\$ 7,375,701.00
RIOS Tier 1 Maintenance - VSP	\$ 3,361,030.00
RIOS Tier 2 Maintenance - SyTech	\$ 4,014,671.00
COMLINC Replacement Estimate	\$ 11,391,000.00
Client Workstation Replacements	\$ 666,000.00
Full System Replacement	\$ 10,725,000.00

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6.2 Modernization 10-Year Annual Budget

The following table depicts the expected annual expenditure for the COMLINC RIOS Modernization, which will take three (3) years to complete:

COMLINC MODERNIZATION ANNUAL BUDGET				
\$6,246,112.00				
Budget Line Item	TOTAL COSTS	YEAR 1	YEAR 2	YEAR 3
RIOS System Refresh Estimate	\$ 4,678,112.00	\$ 1,618,734.00	\$ 1,594,234.00	\$ 1,465,144.00
RIOS Hardware/Software	\$ 4,017,032.00	\$ 1,339,010.67	\$ 1,339,010.67	\$ 1,339,010.67
RIOS System Spares	\$ 258,180.00	\$129,090.00	\$129,090.00	
RIOS System Training	\$ 402,900.00	\$ 150,633.33	\$ 126,133.33	\$ 126,133.33
RIOS Expansion Estimate	\$ 1,568,000.00	\$ 380,800.00	\$ 649,600.00	\$ 537,600.00
RIOS CITY/COUNTY EXPANSION	\$ 1,344,000.00	\$ 268,800.00	\$ 537,600.00	\$ 537,600.00
RIOS ADDITIONAL SITES EXPANSION	\$ 224,000.00	\$ 112,000.00	\$ 112,000.00	
TOTAL		\$ 1,999,534.00	\$ 2,243,834.00	\$ 2,002,744.00

The next sub-sections will provide the details for each line item in the modernization budget estimate.

6.2.1 RIOS Refresh Estimate

6.2.1.1 RIOS Hardware/Software Estimate

The original manufacturer of RIOS, SyTech Corporation, recommends a partial hardware refresh to the existing COMLINC system. With this approach, SyTech will replace all computer and router components while continuing to support and maintain the existing radio interfaces.

This approach will allow locations to continue using COMLINC, reduce the overall system replacement cost, and resolve the existing security and performance vulnerabilities.

The advantages of this refresh methodology are:

- Elimination of XP computers
- Radio interfaces remain intact
- Cisco vulnerabilities are resolved
- Costs are limited to only replace obsolete hardware
- Server and client are now able to operate updated SyTech RIOS software
- Expanded capabilities and interoperability with smartphone devices
- Removal and installation can be expedited, and project completion accelerated

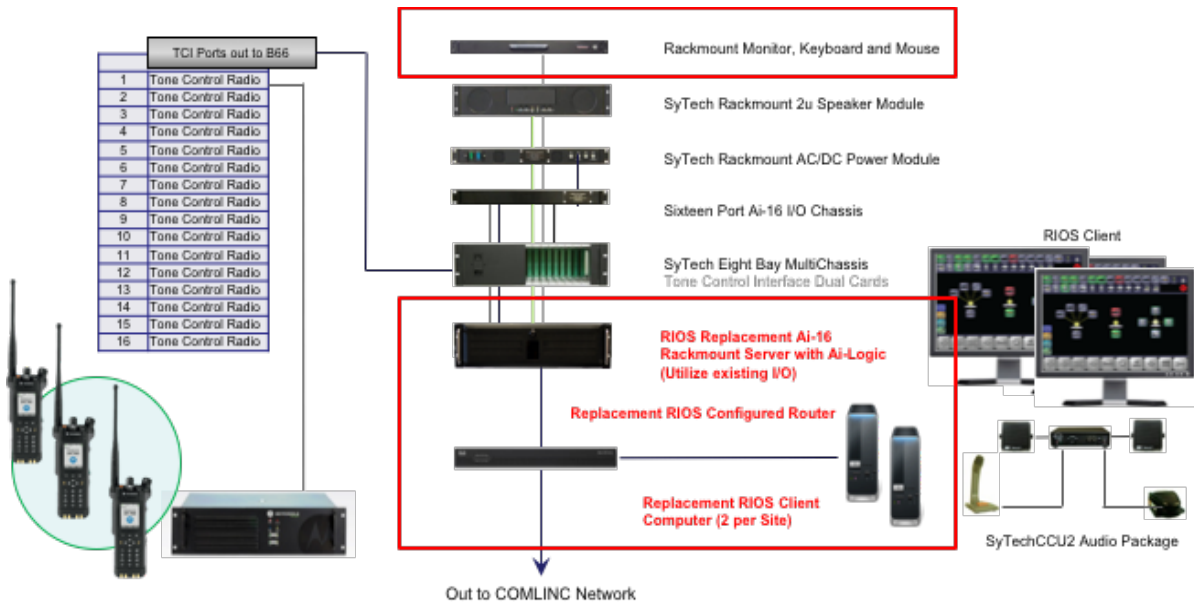
COMLINC EVALUATION

The estimated costs for the RIOS System Refresh are:

RIOS System Refresh Estimate	
\$4,017,032.00	
Fixed Site Hardware/Software Refresh	\$3,548,000.00
<p style="text-align: center;">RIOS Fixed Site Server Hardware Includes Windows 10 Rackmount Computer, Pullout Monitor, Installation, Four (4) Additional Virtual Licenses, RIOS LiTE Profile. To be operated with existing I/O Chassis.</p>	\$ 2,636,160.00
<p style="text-align: center;">RIOS Client (2 per Fixed Site) Includes Windows 10 Client Computer, Monitor, Mouse, Keyboard, Updates, RIOS Configuration and Setup, Shipping and Installation.</p>	\$ 484,840.00
<p style="text-align: center;">RIOS Configured Routers Cisco Router with Multiport VLAN, RIOS COMLINC Configured VPN</p>	\$ 427,000.00
Mobile Command Vehicle Hardware/Software Refresh	\$335,352.00
<p style="text-align: center;">RIOS Mobile Command Vehicle Hardware RIOS Rackmount Server, Pullout Monitor, Replacement SuperRIB I/O Chassis.</p>	\$ 293,352.00
<p style="text-align: center;">RIOS Mobile Command Vehicle Routers Cisco Router with Multiport VLAN, RIOS COMLINC Configured VPN</p>	\$ 42,000.00
Tactical RIOS Hardware/Software Refresh	\$133,680.00
<p style="text-align: center;">RIOS Tactical Retro Fit Includes Replacement Ruggedized Computer, Pelican Case and I/O Metal Work with Cabling.</p>	\$ 91,680.00
<p style="text-align: center;">RIOS Configured Cisco Routers Cisco Router with Multiport VLAN, RIOS COMLINC Configured VPN</p>	\$ 42,000.00

COMLINC EVALUATION

The image below diagrams SyTech's recommend approach to hardware refresh. With this approach the server hardware, router, and client workstations are replaced, and this approach will require the following modifications (outlined in red) to the current COMLINC system³³:



The following is a direct comparison of the existing COMLINC system configuration and the proposed 2018 proposed COMLINC system refresh:

	Existing System	Proposed Refresh (As of 2018)
Minimum Server Operating System	Windows XP (86 Locations)	Windows 10
Minimum Server RAM	1.97 GM RAM (86 Locations)	16 GB
Minimum Client Operating System	Windows XP (86 Locations)	Windows 10
Router Hardware	Cisco 2800 Series - 86 Locations (End of Life, Cisco will no longer repair, maintain, or test. Product Obsolete 2016)	Cisco 4331 or greater
RIOS Version	Maximum 3.43.48	Minimum 3.44
Smartphone Compatible	No (Limited)	Yes
Android	No	Yes
iPhone	No	Yes
First Net Capable Devices	No	Yes
Channels Graphical User Interface	No	Yes
Smartphone Mapping	No	Optional
Stream Video	No	Optional

³³ System refresh component detail and site by site details are provided in Appendix G.

COMLINC EVALUATION

The replacement of the hardware will include updated SyTech RIOS server and client software, to include the capability to operate the RIOS LiTE Smartphone profile for Apple iPhone and iPad as well Android devices:

- PTT Individual Smartphone Users
- GPS Tracking with Emergency Location Notification
- Two-way streaming video capable
- Off-line notifications
- Integration of First Net capable devices



RIOS LiTE for Android and iOS



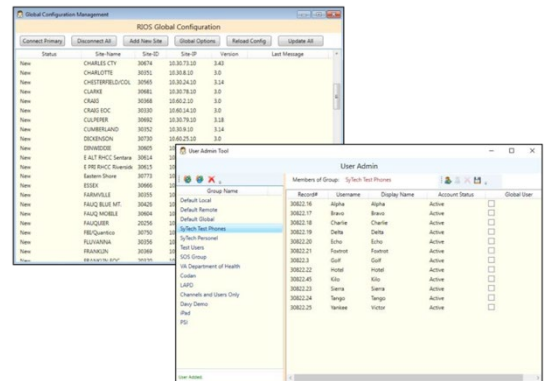
RIOS LiTE can be used on Band 14³⁴/First Net devices such as the Sonim XP7, XP8 and Samsung S9. The image below depicts RIOS LiTE operating on the Sonim XP7.

It is acknowledged there are sites that currently have more than two (2) client workstations, to help control cost, SyTech recommends two client workstations per site. Individual sites may purchase additional workstations in accordance with the provided pricing. Additionally, any current client workstation licenses can be converted to a RIOS LiTE license.

The proposed hardware refresh provides a variety of benefits to both system administrators and end users. Some of the benefits are:

System Administrator

- Enhanced cyber security (Windows and Cisco)
- Upgrade path to new RIOS releases - 3.44 and higher
- Re-write of Global Configuration and User Administrator³⁵
- Enhanced archive recording with RIOS ADACS
- Enhanced logging for smartphones and system events.
- Channels interface and capability
- File transfer
- IP Camera interfacing (optional)
- IP Video interface (optional)
- GIS Mapping with Google Maps/ESRI/and others (optional)



RIOS Global Configuration and User Administration - 3.44

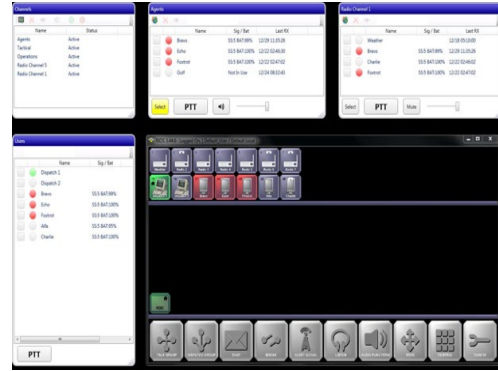
³⁴ Band 14 is exclusive to FirstNet and not available with any other carrier.

³⁵ For RIOS 3.44, SyTech improved the methods for how RIOS pushes global configuration to the remote sites as well as how the system administrators manage users within the system. The images below provide a graphic for these improved interfaces.

COMLINC EVALUATION

End User Benefits

- Users and Channels Interface
- Enables the dispatcher to directly PTT to a created RIOS Channel
- Enables the RIOS LiTE User to select from multiple radio interfaces to PTT
- Enables the dispatcher and RIOS LiTE User to select an individual for PTT communications



SyTech continues to enhance their product offering to include the possibility of a more integrated operational experience for the user. Enhancements such as this will not be available for approximately eighteen (18) months and accordingly cannot be fully described and estimated at this time.

6.2.1.2 RIOS System Spares Estimate

Spares are a critical component of a successful sustainability plan. The following are the SyTech recommended spares, and the estimated costs, for a statewide COMLINC deployment:

RIOS System Spares Estimate				
\$258,180.00				
Item #	Description	Qty	Extended	Total
R-SERV-RCKMNT-SPR	RIOS Rackmount Server	15	\$6,800.00	\$102,000.00
R-TCI-C	Tone Control Interface Card	20	\$399.00	\$7,980.00
I-INT-MLTCH8-5V	8 Bay MultiChassis	10	\$1,500.00	\$15,000.00
R-WRKST-PC	Windows PC with Monitor, Keyboard and Mouse	20	\$1,475.00	\$29,500.00
R-NET-RTR-X	RIOS Configured Router	10	\$3,500.00	\$35,000.00
R-INT-MON-NON-TS	Rackmount Monitor, Keyboard, and Mouse - Non Touchscreen	20	\$1,599.00	\$31,980.00
R-INT-SPK	SyTech Rack mount Shielded Speaker 2U Module	10	\$999.00	\$9,990.00
R-WRKST-CCU2-PCK	SyTech CCU2 Audio Controller	10	\$1,274.00	\$12,740.00
R-INT-PWR-ACDC	SyTech Rack mount AC/DC Power Module	10	\$1,399.00	\$13,990.00

Spares are not intended to be distributed directly to users in each region. The intent is to distribute them to the Tier 1 maintainers to allow them to fix the issues with each system as they occur returning the system to full operation during a single visit, thus eliminating long periods of downtime.

COMLINC EVALUATION

6.2.1.3 RIOS System Training Estimate

SyTech has offered both initial training options and refresher training options. We have estimated the costs based upon current familiarity with COMLINC. Refresher training will be provided to fifty-four (54) state agencies and localities that have reported current use of COMLINC. Initial training will be provided to ninety-eight (98) state agencies and localities that have report little to no use of COMLINC. The interactive training module is an internet-based *ongoing training tool* with a one-time charge for unlimited use. The following is the estimate for RIOS System Training:

RIOS System Training Estimate			
\$402,900.00			
Onsite Training - Refresher	\$ 1,200.00	54	\$ 64,800.00
Onsite Training - Half Day Pre-Test, Two Full Days	\$ 3,200.00	98	\$ 313,600.00
Interactive Training Module (Unlimited Usage)	\$ 24,500.00	1	\$ 24,500.00

6.2.2 RIOS System Expansion Estimate

Based upon a standard deployment, the following are the costs to add the remaining Counties and Cities, as well as state agencies and other critical partners:

RIOS System Expansion Estimate	
\$1,568,000.00	
\$56,000	per site
Counties Without COMLINC	\$ 840,000.00
Allegany County	James City County
Bath County	Lunenburg County
Fairfax County	Mathews County
Floyd County	Middlesex County
Gloucester County	Pittsylvania County
Highland County	Southampton County
Isle of Wight County	Surry County
Cities Without COMLINC	\$ 504,000.00
Chesapeake City	Newport News City
Covington City	Norfolk City
Danville City	Portsmouth
Hampton City	Virginia Beach City
Additional Sites	\$ 224,000.00
Game and Fisheries	Virginia Port Authority
Virginia Department of Forestry	

COMLINC EVALUATION

6.3 Sustainment 10-Year Annual Budget

The following table depicts the expected annual expenditure for the COMLINC RIOS Sustainment which will occur in each of the 10 budget years:

COMLINC SUSTAINMENT ANNUAL BUDGET					
\$7,375,701.00					
Budget Line Item	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
RIOS Sustainability Estimate					
RIOS Tier 1 Maintenance - VSP	\$ 300,000.00	\$ 307,500.000	\$ 315,188.000	\$ 323,068.000	\$ 331,145.000
RIOS Tier 2 Maintenance - SyTech	\$ 350,200.00	\$ 360,706.00	\$ 371,528.00	\$ 382,674.00	\$ 394,155.00
RIOS SUSTAINABILITY SUBTOTAL	\$ 650,200.00	\$ 668,206.00	\$ 686,716.00	\$ 705,742.00	\$ 725,300.00
Budget Line Item	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
RIOS Sustainability Estimate					
RIOS Tier 1 Maintenance - VSP	\$ 339,424.00	\$ 347,910.00	\$ 356,608.00	\$ 365,524.00	\$ 374,663.00
RIOS Tier 2 Maintenance - SyTech	\$ 405,980.00	\$ 418,160.00	\$ 430,705.00	\$ 443,627.00	\$ 456,936.00
RIOS SUSTAINABILITY SUBTOTAL	\$ 745,404.00	\$ 766,070.00	\$ 787,313.00	\$ 809,151.00	\$ 831,599.00

6.3.1 10 Year Maintenance – SyTech Tier 1

Based upon discussion, SyTech does not desire to quote this level of maintenance for the statewide COMLINC deployment.

6.3.2 10 Year Maintenance – VSP Tier 1

As part of the current maintenance contract between SyTech and VSP, VSP is responsible for Tier 1 maintenance³⁶. The following activities and resources are needed to fulfill these expectations:

- Subject Matter Experts (SME) on the COMLINC systems and Technology.
- COMLINC Project and Implementation Support for existing and future systems.
- Annual ongoing training for technical and operational support of COMLINC systems at all sites.
- Annual site visits, routine maintenance checkup process, to optimize and correct any issues found at COMLINC sites.
- On-site support for emergency operations and special events requiring a COMLINC multi-agency (Local, State, Federal) involvement.
- Specialist focusing on any other Interoperability requirements, projects, and enhancements to the overall Commonwealth Interoperability and operational support of field events (Mobile Command Post, Radio Caches and other assets from VSP etc.)
- Technician trained and integrated with the Incident Management Team (IMT)/Incident Command Structure (ICS) system and support teams.

³⁶ Current VSP / SyTech Maintenance contract in Appendix H.

COMLINC EVALUATION

The Tier 1 – VPS table details the costs required to support the technical team necessary to properly support COMLINC for the next ten (10) years, with a 1.25% yearly increase for inflation.

10 Year Maintenance Tier 1 - VSP	\$ 3,361,030.00
Year 1	\$ 300,000.00
Year 2	\$ 307,500.00
Year 3	\$ 315,188.00
Year 4	\$ 323,068.00
Year 5	\$ 331,145.00
Year 6	\$ 339,424.00
Year 7	\$ 347,910.00
Year 8	\$ 356,608.00
Year 9	\$ 365,524.00
Year 10	\$ 374,663.00

6.3.3 10 Year Maintenance – SyTech Tier 2

As part of the current maintenance contract with VSP, SyTech is responsible for Tier 2. The following activities are needed to fulfill these expectations:

- Onsite response and resolution as defined by SyTech's Service³⁷ Level Agreement.
- Onsite support of planned events and regional emergencies.
- Warranty coverage of original equipment and refresh equipment.
- RIOS Server Software Updates.
- RIOS LiTE Software Updates.
- Router maintenance including routing modifications due to changes made by Cisco, security threats, Cisco bug fixes.
- Support of offsite routers maintained by SyTech.
- Windows OS Updates.
- Remote System Monitoring.
- Onsite Refresher Training

The Tier 2 – SyTech table details the costs required to support the technical team necessary to properly support COMLINC for the next ten (10) years, with a 3% yearly increase for inflation.

10 Year Maintenance Tier 2 - SyTech	\$ 4,014,671.00
Year 1	\$ 350,200.00
Year 2	\$ 360,706.00
Year 3	\$ 371,528.00
Year 4	\$ 382,674.00
Year 5	\$ 394,155.00
Year 6	\$ 405,980.00
Year 7	\$ 418,160.00
Year 8	\$ 430,705.00
Year 9	\$ 443,627.00
Year 10	\$ 456,936.00

³⁷ Current SyTech Maintenance contract is in Appendix I.

COMLINC EVALUATION

6.4 Replacement 10-Year Annual Budget

This system will need to follow an industry standard replacement cycle to ensure the continued success of COMLINC. The client workstations should be replaced beginning in Year 5 and be completed over the course of three years. If the intent is to stay with the SyTech RIOS platform, a full system replacement should be considered beginning in Year 8 and be completed over the course of three years.

COMLINC REPLACEMENT ANNUAL BUDGET					
\$11,391,000.00					
Budget Line Item	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
RIOS Replacement Estimate					
Client Workstation Replacement	\$ -	\$ -	\$ -	\$ -	\$ 222,000.00
RIOS Full system Replacement*	\$ -	\$ -	\$ -	\$ -	\$ -
RIOS SUSTAINABILITY SUBTOTAL	\$ -	\$ -	\$ -	\$ -	\$ 222,000.00
Budget Line Item	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
RIOS Replacement Estimate					
Client Workstation Replacement	\$ 222,000.00	\$ 222,000.00	\$ -	\$ -	\$ -
RIOS Full system Replacement*	\$ -	\$ -	\$ 3,575,000.00	\$ 3,575,000.00	\$ 3,575,000.00
RIOS SUSTAINABILITY SUBTOTAL	\$ 222,000.00	\$ 222,000.00	\$ 3,575,000.00	\$ 3,575,000.00	\$ 3,575,000.00
<i>* Budgetary pricing based on projected cost of a new RIOS COMLINC system</i>					

6.4.1 Client Workstation Replacements Estimate

Based upon industry standards the workstations (*Includes Windows Client Computer, Monitor, Mouse, Keyboard*) should be replaced beginning in Year five (5). The following are the costs to replace the client workstations:

Client Workstation Replacements System Estimates		\$ 666,000.00
Number of State-Owned Fixed Sites	123	
Virginia Counties Without COMLINC	14	
Cities of Note Without COMLINC	8	
Additional Sites of Interest	3	
<i>Total Number of Estimated Fixed Site Systems</i>	<i>148</i>	
Required Number of Client Workstation (2 per site)	296	
Price Per Workstation Replacement	\$	2,250.00

COMLINC EVALUATION

6.4.2 Full System Replacements Estimates

The life cycle of the refreshed system would indicate a need for replacement beginning in year eight (8) and spanning over three (3) years. Included is a ten (10) percent markup to account for inflation over the next eight (8) years. The following are projected costs:

RIOS Full System Replacement Estimate	
\$10,725,000.00	
Fixed Site Hardware/Software Replacement	\$9,686,600.00
<i>Quantity</i>	<i>148</i>
<p style="text-align: center;">RIOS Fixed Site Server Hardware Includes server computer with dual solid-state hard drives, Windows 10, RIOS 3.44 or greater server and client software, 2 client software licenses, 16 GB RAM, rack modification hardware. RIOS LiTE Profile and 4 RIOS LiTE Licenses, RIOS Rackmount I/O Gateway Chassis, Rackmount Monitor, Keyboard, and Mouse - Non Touchscreen, RIOS SpacStandard Interface Cables (8), RIOS MultiSite Software Module, Eight Bay MultiChassis, Tone Control Interface Card - Per Port (8), Installation.</p>	\$ 65,450.00
<p style="text-align: center;">RIOS Client (2 per Fixed Site) Includes Windowsb Client Computer, Monitor, Mouse, Keyboard, RIOS Configuration and Setup, Shipping and Installation.</p>	
<p style="text-align: center;">RIOS Configured Routers Cisco Router with Multiport VLAN, RIOS COMLINC Configured VPN</p>	
Mobile Command Vehicle Hardware/Software Refresh	\$616,000.00
<i>Quantity</i>	<i>16</i>
<p style="text-align: center;">RIOS Mobile Command Vehicle Hardware RIOS Rackmount Server, Pullout Monitor, Replacement SuperRIB I/O Chassis.</p>	\$ 38,500.00
<p style="text-align: center;">RIOS Mobile Command Vehicle Routers Cisco Router with Multiport VLAN, RIOS COMLINC Configured VPN</p>	
Tactical RIOS Hardware/Software Refresh	\$422,400.00
<i>Quantity</i>	<i>16</i>
<p style="text-align: center;">RIOS Tactical Retro Fit Includes Replacement Ruggedized Computer, Pelican Case and I/O Metal Work with Cabling.</p>	\$ 26,400.00
<p style="text-align: center;">RIOS Configured Cisco Routers Cisco Router with Multiport VLAN, RIOS COMLINC Configured VPN</p>	

7 COMLINC FINDINGS

An interoperability system is not intended to be the day to day means of communications between state agencies and localities; however, it can be the single most important thread that weaves together states agencies, localities, federal partners, and volunteer partners when tragedy strikes.

7.1 COMLINC Successes

Accounts provided by state agencies and localities indicate COMLINC was more widely used when it was first implemented. Even though it is not used as frequently now, State agencies and localities across the Commonwealth have had significant success in using COMLINC. The following examples detail how and why COMLINC is used:

- October 2018 VSP and Henrico County, over a three (3) day period, used COMLINC to establish links and coordinate for a high-profile Fire Fighter’s funeral.
- October 2018 localities used COMLINC to communicate with VDOT dump trucks during Hurricane Michael.
- September 2018, localities used COMLINC to communicate with VDOT during Hurricane Florence.
- August 2018: Charlottesville rally used a Virginia Cache field-deployed RIOS tactical which ran and kept critical (and operational/used) patches up for over fifty (50) hours. COMLINC provided seven (7) TAC patches that allowed multiple agencies and assets to effectively communicate. All of the radio traffic on all seven (7) patches were recorded through the COMLINC RIOS. As operational configuration issues arose, SyTech was able to adjust remotely. COMLINC through a RIOS client was used in the Governor’s Situation Room and allowed the Governor and staff to directly monitor radio traffic. “[Cache, VDEM, and VSP communications staff] *were extremely hard workers, keen problem solvers, excellent coaches, and just a great group to integrate with and spend time with. I am in awe of what we can do in Virginia when we work together.*” *Gabe Elias*
- July 2018: A power outage at Chippingham Johnston-Willis (CJW) Hospital occurred July 10, 2018. The Richmond Ambulance Authority under the MOA with the Central Region Regional Hospital Coordinating Center (RHCC) used the COMLINC client to alert the Central Region hospitals about possible patient movement and Emergency Room diversions.
- November 2016: RIOS was used at the F-15 crash in Augusta County mountains. Because of the mountainous terrain, radio communications were compromised. The system was used to combine multiple agency communications.
- October 2016: In Farmville at a Vice Presidential Debate, the COMLINC RIOS system was used via the Suffolk RMCC unit to provide vital communications for the event.
- February 2016: 3rd Division Communications utilized COMLINC to talk with surrounding counties after loss of all phone lines from tornados and flooding.
- July 2015: Pulaski County – used COMLINC at railroad derailment.
- September 2014: COMLINC was used in the major search for a missing college student where multiple agencies and volunteers converged on the area to assist.

- February 2014: Presidential motorcade came through County of Albemarle and City of Charlottesville and VSP units patched to regional 800 MHz law enforcement system for motorcade and traffic operations. This provided successful direct communication between state and local law enforcement.
- It was commented on by participants that drills at the Lake Anna Power Station went much smoother due to the use of COMLINC.
- Annually: Norton - Wise County used for communications for the Biker Rally.
- Annually: COMLINC is used yearly at the State Fair of Virginia

7.2 *COMLINC Challenges*

The foundational challenge of COMLINC is the lack of understanding of what COMLINC is and its core mission to bridge the interoperability gap between state agencies and localities operating on disparate radio systems using VoIP.

7.2.1 *Governance*

The following are specific governance deficiencies found:

- COMLINC was grant funded and as such was pushed down to the localities without direction, governance, or vision. Because there was no plan for sustainment, the program has become ineffective over the course of time.
- In the early stages of COMLINC there was an active Steering Committee, as this committee became less active the direction of COMLINC began to weaken. Lack of strategic guidance and best practices has led to state agencies and localities not understanding the critical usefulness of COMLINC as a valuable tool in the interoperability toolbox. Additionally, COMLINC lost focus on the prime objective of localities communicating with state agencies.
- There is no officially recognized operational owner of COMLINC, which leaves a void of leadership both technically and operationally.
- An all-hazards approach to interoperability is not widely accepted within the Commonwealth. COMLINC active users can be limited to traditional users (law enforcement, fire, rescue). This often precludes use by other agencies and organizations that may need access to state agencies and localities in an emergency situation.
- There is not a universal adoption of an MOU to govern how COMLINC will operate, and therefore stakeholders do not properly understand the responsibilities they have to maintain the integrity of the system. While an MOU process has been started, and some localities have signed a document, it needs to be revised based upon the new all-hazards paradigm shift and the codified operational owner.

7.2.2 *Standard Operating Procedures*

The standard operating procedure challenges of COMLINC generally stem from a lack formal SOPs in place for the use of COMLINC, which is a barrier to efficiently and effectively creating and maintaining a patch when an emergency occurs.

The following are specific standard operating procedural deficiencies found:

- There are no established and codified Standard Operating Procedures, which makes it difficult for state agencies and localities to know how and when to use COMLINC.

7.2.3 *Technology*

Many localities no longer use COMLINC because the technology failures have become so excessive that the system is not trusted to work when needed.

The following are specific technical deficiencies found:

- Hardware vulnerabilities: (in many localities RIOS is over 10 years old)
 - The most critical pieces of the system are experiencing frequent problems:
 - Hard drive failures
 - Audio card failures
 - System driver failures
 - Network Interface Card (NIC) failures
 - Corrupt data crashes
 - Windows XP no longer supported
 - Cisco Routers no longer supported
 - Operating System variations (cannot be upgrade on Windows XP)
- Software / IT Vulnerabilities:
 - Majority of clients running RIOS Server software version 3.14.8 has caused a serious security risk
 - Continued use of Windows XP has caused a serious security risk
 - Continued used of Cisco 2800 & 2900 routers has caused a serious security risk
- Bandwidth Vulnerabilities:
 - Localities have a wide variance of internet access, which can lead to disparate performance.
 - Site-specific bandwidth constraints which causes COMLINC to crash during high bandwidth demand periods.
 - Internet latency effects (data delay effect) which can cause some level of disruption to users.
- Localities find it difficult to pay for an internet connection with the necessary bandwidth to make using COMLINC viable.
- Lack of funding for regular maintenance (i.e. technical troubleshooting and repair, software and hardware updates) has caused the COMLINC network to be unreliable. Both VSP and SyTech have put forth best efforts to keep COMLINC operational, and both have contributed these efforts at no cost to the state or localities. This is not a technically viable or financially sustainable maintenance model.
- There were unrealistic expectations placed upon VSP and SyTech due to lack of sustainable funding for operations and maintenance.
- State agencies and localities struggle with the strategic placement of the RIOS clients within the PSAP. The RIOS COMLINC. When and if a dispatch center is lightly staffed, COMLINC will not be used.

7.2.4 Training & Exercises

Overall, the lack of ongoing training and exercises creates a barrier for the users to be comfortable with COMLINC and incorporate it into regular routines.

The following are specific training & exercises constraints found:

- Dispatchers have reported that making a patch is cumbersome and time consuming. This is the result of dispatchers either not being properly or regularly trained on how and when to use COMLINC.
- Lack of necessary ongoing training was reported by one or more localities in every RACP-I region and by the state agencies.
- Regular exercises, such as performing roll calls as a form of testing the links to maintain the skills of the dispatchers, are not uniformly practiced in each RPAC-I region.

7.2.5 Usage

The following are specific usage constraints found:

- Localities who chose not to participate in COMLINC, have discontinued using COMLINC, or do not use COMLINC consistently, do so due to funding constraints.
- Some state agencies and localities do not have sufficient dispatchers to accept the additional duties of COMLINC.

8 COMLINC RECOMMENDATIONS

The ability to communicate during an emergency can mean the difference between *lives saved* and lives lost. Typically frames of reference focus on September 11, 2001. However, the Commonwealth has experienced multiple critical incidents over the last decade: mass shootings, hurricanes, tornadoes, earthquakes, and rallies turned deadly, emphasizing how critically important the *interoperability thread that weaves together state agencies, localities, federal partners, and other all-hazards stakeholders when tragedy strikes our Commonwealth*.

The recommendations are wholistic in nature, and as such are based upon the DHS Interoperability Continuum to assist in strategic planning. The recommendations will also support the NIMS operational and planning strategic vision.

The following are recommendations to overcome the challenges now facing COMLINC:

8.1 Governance

To overcome the governance challenges of COMLINC, clear and concise expectations must be shared with state agencies and localities. The following are specific governance recommendations that will facilitate clear and concise messaging:

- ***Institute a permanent standing COMLINC Governance Council from SIEC membership***, with authority and responsibility to advocate for localities, as well as set and enforce SOP, technology, training, and usage standards. As a minimum, this committee should have representation from at least one (1) representative from each of the RPAC-I regions and VSP.
- ***Establish VSP as operational owner for COMLINC***. VSP is the only agency with the resources to operate and sustain a statewide interoperability system. Through discussions VSP has expressed a willingness to serve in this role.
- ***Expand availability to all public safety all-hazard stakeholders***³⁸. In the spirit of NIMS alignment and the use of COMLINC for both threat response and planning, availability should be expanded to include all potential and emergent stakeholders. This is a paradigm shift in approach to COMLINC use that is required to meet NIMS requirements and the ever-increasing volume of public safety all-hazard stakeholders engaged in addressing threats to the Commonwealth. Availability should also be expanded to all localities that do not presently possess it.
- ***Ensure that COMLINC Governance, SOP, technology, training, and usage aligns with and complements NIMS***.
- ***Institute a Memorandum of Understanding process between authorities and stakeholders using COMLINC***. An MOU is necessary to set the operational responsibilities of all stakeholders. This process identifies authority and stakeholder responsibilities and accountability.

³⁸ <https://vacode.org/44-146.14/> Virginia Code §44-146.14 3. To provide for rendering of mutual aid among the political subdivisions of the Commonwealth and with other states and to cooperate with the federal government with respect to the carrying out of emergency service functions.

8.2 Standard Operating Procedures

To overcome the standard operating procedure challenges of COMLINC, ongoing attention must be given to disseminating the knowledge of how COMLINC can be used through best practices and standards. The following are specific standard operating procedures recommendations:

- **Institute statewide Standard Operating Procedures.** SOPs should consider stakeholder capabilities and limitations.

8.3 Technology

To overcome the current technical vulnerabilities of COMLINC, a system-wide refresh is required. The following are specific technical recommendations:

- **Modernize the COMLINC technology platform.** To mitigate obsolescence, cyber security vulnerabilities, and enable sustainment, the technology must be modernized. The currently installed RIOS is obsolete, unsustainable, and presents a clear cyber security vulnerability threat. *Modernization should commence as soon as possible to avoid an inevitable system collapse and align it with industry and state cyber requirements.* There are other technologies in the marketplace capable of performance similar to RIOS (several example technologies are: Mutualink, JPS Interoperability Solutions, Catalyst Communications Technologies) and the Commonwealth will benefit from developing requirements for modernizing the COMLINC technology platform.
- **Resource COMLINC modernization and sustainment costs from State Funds.** Statewide interoperability should be owned at the state government level. COMLINC resourcing should not burden already fully encumbered localities by placing them in a position to assume greater risk in local operability in order to resource statewide interoperability.
- **Align COMLINC cyber security standards to industry and state requirements.** The hard drive for the currently installed RIOS version is window XP. Windows XP is no longer industry or state approved to meet cyber security minimum requirements. To mitigate the Software / IT Vulnerabilities, COMLINC must comply with the Commonwealth ITRM Framework and the IT Information Security Policy SEC 501-10 and 51900. If VSP becomes the operational owner, COMLINC must also comply with VSP specific cyber security requirements as identified in section 5.2 of this report.
- **Ensure adequate locality internet capacity to support COMLINC.** To mitigate Bandwidth Vulnerabilities, an assessment must be completed for each participating locality to determine the current bandwidth capabilities and compare to the technology platform requirements. If it is found that a locality does not meet the bandwidth requirements, adjustment will be required prior to installation of the technology platform.
- **Align technology with human factors.** Integrate COMLINC into the dispatchers' immediate environment. Surveys consistently revealed the remote location of COMLINC equipment relative to the dispatcher's station discouraged use. Multiple localities have this type of accessible implementation and it enhances the likelihood that dispatchers will utilize COMLINC. This integration can be either directly to the consoles or remoted to a screen within the dispatchers' immediate reach.
- **Increase sustainment human resources.** Hire four (4) technicians to fulfill the Tier 1 maintenance responsibilities as outlined in the current maintenance contract.

- ***The three (3) critical information routers, currently under the control of SyTech, should be controlled by the Commonwealth.*** If VSP becomes the operational owner, these routers can reside in the two (2) STARS zone controller equipment rooms.
- To further assist in interoperability, and the promotion thereof, it is highly suggested that ***where feasible and where funding exists, jurisdictions make available on radio towers one or more of the FCC national interoperability channels.*** These interoperability channels are readily accessible and usable in an all-hazards environment³⁹.
- When the next refresh cycle approaches, it is recommended the Commonwealth ***consider a 700 MHz statewide overlay system⁴⁰, that will allow state agencies, localities, and federal partners, to participate on the FirstNet Band 14 LTE nationwide system.*** There will be users that either cannot afford 700 MHz equipment or do not have the full ability to tie into FirstNet, therefore there will continue to be a role for COMLINC as an agile, adaptable, scalable, and affordable interoperability system that supports all-hazards operations on demand.

8.4 Training & Exercises

To overcome the training & exercises challenges of COMLINC, ongoing attention must be given to the barriers that keep the users from being comfortable with COMLINC and the process of incorporating it into regular routines.

The following are specific standard training & exercises recommendations:

- ***Establish a statewide training program and standards.*** A detailed ongoing training program should be developed to include interoperability concepts, and a refresher training plan should be developed and rolled out yearly. Additionally, internet-based ongoing training should be available for dispatchers to access on an ad hoc basis. Adequate ongoing training should lessen the complaints of COMLINC being cumbersome and time consuming to use.
- ***Develop training synergies between state agencies that currently have well established training programs.*** There are state agencies that have successful training programs and have routine access to all localities within the Commonwealth. These synergies will lessen the burden on a single agency to ensure adequate ongoing training and can be used as a catalyst to bring more awareness of COMLINC and additional potential users of COMLINC.
- ***Require regular exercises,*** such as performing daily roll calls, to maintain the skills of the dispatchers. This will also allow a user agency/locality to know if the equipment is operating correctly on a daily basis.
- It is critical to the success of COMLINC that ***state agencies and localities are committed to, and are held accountable for ongoing training and exercises.*** This can be accomplished via the funding mechanism and can be part the Operational Owner's responsibilities.
- Critical to the success of an interoperability all-hazards paradigm shift is ***active training for all traditional and non-traditional users.***

³⁹ If approved by on scene unified command as defined by the NIMS model.

⁴⁰ Similar to the Maryland First 700 MHz system approach, which allows localities to voluntarily join the statewide system.

8.5 Usage

COMLINC's usage depends heavily upon sustainable funding. Without funding the mandated interoperability cannot be achieved or sustained. The following are specific usage recommendations:

- **Set statewide usage standards such as performing routine roll calls to maintain the skills of the dispatchers.** This will also allow stakeholders to know if the equipment is operating correctly on a routine basis.
- **Apply imagination and initiative.** COMLINC is agile, adaptable, and scalable. It is limited largely by user imagination, ability, and initiative. It is an ideal communication complement to NIMS and provides the best interoperability when disparate radio systems require integration. Less interoperable practices, such as telephone communication and radio swaps, are common instead of using COMLINC. Such an approach disadvantages the responder and those requiring their response.
- **Assess Dispatcher staffing requirements.** VSP dispatchers for state agencies on STARS, and COMLINC must link to STARS to support interoperability requests. Without appropriate staff available to support the interoperability workload, COMLINC will not be successful.

8.6 Interoperability Continuum Conclusions

To drive progress along the five (5) lanes of the continuum and improve interoperability, the *COMLINC Steering Committee should follow these guidelines:*

- **Governance:** Obtain leadership commitment from all participating state agencies and localities.
- **SOP:** Promote collaboration across all participating state agencies and localities for planning and implementation.
- **Technology:** Collaborate with the General Assembly to gain commitment and ongoing resource-support for interoperability, to include updates to the system.
- **Training & Exercises:** Plan, budget, and execute ongoing training and exercises.
- **Usage:** Use COMLINC on a regular basis.

Interoperability is a requirement by both federal and state mandates. Even more important is the mandate of citizens, that the Commonwealth has the tools available which are necessary to save every life possible when a man-made or natural disaster strikes the Commonwealth. Without an upgrade of COMLINC, given the current state of interoperability, the Commonwealth does not meet the requirements set forth in the State Code of Virginia § 2.2-222.2.

COMLINC is the solution that bridges all-hazard interoperability on demand. If properly ungraded and maintained, COMLINC will fulfill the interoperability requirement set forth in § 2.2-222.2, Code of Virginia.

APPENDIX A

GLOSSARY

GLOSSARY

A

AES – Advanced Encryption Standard

APCO – Association of Public Safety Communications Officials

ATF – Bureau of Alcohol Tobacco Firearms & Explosives

B

C

CIO - Chief Information Officer

CJW - Chippingham Johnston-Willis

COML – Communications Unit Leader

COMLINC - Commonwealth Link to Interoperable Communications

COMT – Communications Technicians

CSMS – Commonwealth Spectrum Management Services

D

DCJS – Department of Criminal Justice Services

DEA – Drug Enforcement Agency

DGIF – Department of Game and Inland Fisheries

DHS - Department of Homeland Security

DOC – Department of Corrections

DOF – Department of Forestry

COMLINC EVALUATION

E

EA – Enterprise Architecture

F

FBI – Federal Bureau of Investigations

FCC – Federal Communications Commission

First Responder – Defined by Homeland Security Presidential Directive / HSPD-8 (d)

The term "first responder" refers to those individuals who in the early stages of an incident are responsible for the protection and preservation of life, property, evidence, and the environment, including emergency response providers as defined in section 2 of the Homeland Security Act of 2002 (6 U.S.C. 101), as well as emergency management, public health, clinical care, public works, and other skilled support personnel (such as equipment operators) that provide immediate support services during prevention, response, and recovery operations.

https://www.dhs.gov/sites/default/files/publications/hr_5005_enr.pdf

G

Gateway - In a communications network, a special node that interfaces two or more dissimilar networks, providing protocol translation between the networks. A gateway may contain devices such as protocol translators, impedance matching devices, rate converters, fault isolation, or signal translators as necessary to provide system interoperability.

GHz – Gigahertz (1,000,000,000 Hz)

GIS – Geographical Information System

GPS – Global Positioning System

GUI – Graphical User Interface

H

HCC – Hospital Coordination Center

HRTacRAN - Hampton Roads Tactical Regional Area Network

COMLINC EVALUATION

I

ICE – Immigration and Customs Enforcement

ICRI – Incident Commander’s Radio Interface

ICS - Incident Command Structure

IMT - Incident Management Team

Interoperability - FCC Title 47 Chapter 1 Part 90 Subpart A Section 90.7 – Definitions for “Interoperability” An essential communication link within public safety and public service wireless communications systems which permits units from two or more different entities to interact with one another and to exchange information according to a prescribed method in order to achieve predictable results.

https://www.govregs.com/regulations/title47_chapter1_part90_subpartA_section90.7

Interoperability Continuum – Tool developed by the Department of Homeland Security Interoperability Continuum is designed to assist emergency response agencies and policy makers to plan and implement interoperability solutions for data and voice communications. This tool identifies five critical success elements that must be addressed to achieve a sophisticated interoperability solution: governance, standard operating procedures (SOPs), technology, training and exercises, and usage of interoperable communications. Jurisdictions across the Nation can use the Interoperability Continuum to track progress in strengthening interoperable communications.

https://www.dhs.gov/sites/default/files/publications/interoperability_continuum_brochure_2.pdf

IP – Internet Protocol

IT – Information Technology

ITRM - Information Technology Resource Management

ITIM - Information Technology Investment Management

J

K

KVM - Keyboard, Video, and Mouse Switch

L

LMR – Land Mobile Radio

M

Mesh Network - type of network topology in which a device (node) transmits its own data as well as serves as a relay for other nodes. Routers are used to provide the best and most efficient data path for effective communication.

<https://www.techopedia.com/definition/24398/mesh-networking>

MHz – Megahertz (1,000,000 Hz)

MOU – Memorandum of Understanding

MSA - Metropolitan Statistical Area

MW – Microwave

Electromagnetic waves operating from 1 to 100 GHz that travel line of sight and is used for point to point communications links.

N

National Interoperability Channels - Set of frequencies set aside for national interoperability, which the FCC defines as an essential communication link within public safety and public service wireless communications systems which permits units from two or more different entities to interact with one another and to exchange information according to a prescribed method in order to achieve predictable results.

https://www.govregs.com/regulations/expand/title47_chapterI_part90_subpartA_section90.7

NIC – Network Interface Card

NIMS – National Incident Management System - communications and interoperability through collaborative leadership.

<https://www.fema.gov/national-incident-management-system>

O

OES - Office of Emergency Services

ORION - Overlay Regional Inter-Operability Network

P

P25 – APCO Project 25 is a set of interoperability standards adopted by Federal government agencies and many public safety agencies. The standards have been and are being developed by the TIA TR-8 Committee (Engineering Committee, Mobile and Personal Private Radio Standards). Numerous manufacturers are producing P25 compliant equipment, primarily offering air-to-air compatibility for digital voice and data, and trunked digital voice and data. <http://www.project25.org>

PMD - Project Management Division

PSAP – Public Safety Answering Point

PSIC - Public Safety Interoperable Communications

PSG - policies, standards, and guidelines

PTT – Push to Talk

Public Safety –Virginia Code § 9.1-801. Public safety officer defined.

As used in this chapter, the term "public safety officer" includes a law-enforcement officer of the Commonwealth or any of its political subdivisions; a correctional officer as defined in § 53.1-1; a correctional officer employed at a juvenile correctional facility as the term is defined in § 66-25.3; a jail officer; a regional jail or jail farm superintendent; a member of any fire company or department or nonprofit or volunteer emergency medical services agency that has been recognized by an ordinance or resolution of the governing body of any county, city, or town of the Commonwealth as an integral part of the official safety program of such county, city, or town; an arson investigator; a member of the Virginia National Guard or the Virginia Defense Force while such a member is serving in the Virginia National Guard or the Virginia Defense Force on official state duty or federal duty under Title 32 of the United States Code; any special agent of the Virginia Alcoholic Beverage Control Authority; any police agent appointed under the provisions of § 56-353; any regular or special conservation police officer who receives compensation from a county, city, or town or from the Commonwealth appointed pursuant to § 29.1-200; any commissioned forest warden appointed pursuant to § 10.1-1135; any member or employee of the Virginia Marine Resources Commission granted the power to arrest pursuant to § 28.2-900; any Department of Emergency Management hazardous materials officer; any nonfirefighter regional hazardous materials emergency response team member; any investigator who is a full-time sworn member of the security division of the Virginia Lottery; any full-time sworn member of the enforcement division of the Department of Motor Vehicles meeting the Department of Criminal Justice Services qualifications, when fulfilling duties pursuant to § 46.2-217; any campus police officer appointed under the provisions of Article 3 (§ 23.1-809 et seq.) of Chapter 8 of Title 23.1; and any conservation officer of the Department of Conservation and

Recreation commissioned pursuant to § 10.1-115.

<https://law.lis.virginia.gov/vacode/title9.1/chapter8/section9.1-801/>

Q

QoS – Quality of Service

R

RACES - Radio Amateur Civil Emergency Service

RF – Radio Frequency

RHCC - Regional Hospital Coordinating Center

RIOS – Radio Interoperability System (product of SyTech)

RIOS radio interoperability systems combine radios, phones, computers, VoIP and video assets within an all-in-one interface designed for interoperable group communications. With RIOS, traditionally non-compatible resources are brought together with hardware and software engineered to bridge the gap in modern communications. RIOS is able to cross-band all types of HF/VHF/UHF and 700/800 MHz radios using the radio gateway methodology.

<https://www.sytechcorp.com/products/rios-radio-interoperability-systems/>

Router - A functional unit, in data communications, used to interconnect two or more networks. Routers operate at the network layer and reads the network layer address of all packets transmitted by a network, and forwards only those addressed to another network.

RPAC-I - Regional Preparedness Advisory Committee for Interoperability

The purpose of the RPAC-I is to work as a committee at the regional level to address interoperability project priorities, including utilization of grant funding and addressing communication challenges. Representatives from the seven (7) RPAC-I's provide perspectives and input to the statewide interoperability decision making process.

<https://www.pshs.virginia.gov/homeland-security/interoperability/>

S

Server - A computer or software package, that provides a specific kind of service to client software running on other computers. Servers include file servers, disk servers, print servers, etc.

COMLINC EVALUATION

SIEC – State Interoperability Executive Committee

The SIEC assists in defining and implementing the interoperability initiative in the Commonwealth. Provide strategic guidance and recommendations to the State Interoperability Executive Committee Coordinating Committee, the Office of Public Safety and Homeland security, and the Governor.

<https://www.pshs.virginia.gov/homeland-security/interoperability/>

SIRS – Statewide Interdepartmental Radio System

SOP – Standard Operating Procedure

STARS – Statewide Agencies Radio System

SWIC – Statewide Interoperability Coordinator

SyTech – Systems Engineering Technologies Corporation

T

TCP/IP – Transmission Control Protocol/Internet Protocol - Networking protocols used on the Internet.

TCI - Tone Control Interface

U

UARC – User Agencies Review Committee

UHF – Ultra High Frequency

UHF Band - The UHF Public Safety communications band is 450 MHz to 470 MHz

UPS - Uninterrupted Power Supply

V

VDEM – Virginia Department of Emergency Management

VDH – Virginia Department of Health

VDOT – Virginia Department of Transportation

COMLINC EVALUATION

VHHA – Virginia Hospital and Healthcare Association

VHF – Very High Frequency

VHF High Band - Also known as “High Band”, the public safety band between 150 MHz and 174 MHz

VHF Low Band - Also known as “Low Band”, the public safety band between 25 MHz and 50 MHz

VITA – Virginia Information Technology Agency

VoIP – Voice over IP - Method of routing voice conversations over the Internet or any IP based data network. The voice call may or may not originate and/or terminate through the PSTN.

VPA – Virginia Port Authority

VSP – Virginia State Police

W

X

Y

Z

APPENDIX B

OES Survey Form



Commonwealth of Virginia - COMLINC User Study

Introduction and Agency Information

Purpose:

The purpose of this user study is to identify the current state and usability of the Virginia COMLINC interoperable communications system. Agencies that have COMLINC equipment installed are asked to complete the user study in order to help the Commonwealth develop and maintain effective solutions to interoperable communications barriers.

In Virginia, COMLINC leverages VoIP technology that allows disparate radio systems in Virginia to communicate with each other during a critical incident. The objective of COMLINC is to allow all VoIP solutions to connect to STARS and various localities within regions to increase interoperable communications while within the Commonwealth's footprint. COMLINC allows dispatchers at the counties and cities to establish multiple patches to connect agencies within the jurisdiction or to other localities.

NOTE: This study includes questions that address some technical specifications for COMLINC equipment as well as budgetary and cost information. Completion of the user study will be easier if that information is available to you when you begin the study.

Point of Contact:

Jeffrey Lilly, Subject Matter Expert
 Lafayette Group, Inc.
 Supporting the US Department of Homeland Security,
 Office of Emergency Communications
 Interoperable Communications Technical Assistance Program (ICTAP)
 jlilly@lafayettegroup.com

* 1. Agency Information

Agency Name (Req.):

Address

Address 2

City/Town

Phone Number

* 2. Please enter your information here.

Name (Req.):

Title:

Email Address (Req.):

Phone Number:

COMLINC EVALUATION

* 3. Is there somebody else in your agency that you believe would be better suited to participate in this study?

- No, I am the best suited person for this study
- Yes, please send this study to the person named on the next page. Thank you.

* 4. Does your agency have or use COMLINC Interoperability equipment?

- Yes
 - No
- I don't know

* 5. Please send this survey to the point of contact listed below for action.

Name

Agency

Title

Email Address



Commonwealth of Virginia - COMLINC User Study

COMLINC Information

6. How long ago was the COMLINC unit installed?

7. What type of COMLINC equipment is used by your agency (check all that apply)?

- Fixed gateway installation
- Mobile gateway installation
- Mobile phone application
- Unknown
- Other (please specify)

8. Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.

Local Funding State Funding

9. What type of data connection is used for COMLINC (check all that apply)?

- Fiber optics
- Microwave link
- Cable provider
- DSL or other wire-based commercial internet provider
- MPLS or dedicated circuit
- Wireless data communications (4G/LTE)
- Unknown
- Other (please specify)

COMLINC EVALUATION

10. Our agency uses COMLINC to connect with (Check all that apply):

	Local county or agency system	Outside county or agency system	Non-STARs Commonwealth system	Commonwealth STARs system	Other system
Conventional dispatch channel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conventional tactical/operations channel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conventional interoperability channel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other conventional channel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trunked system dispatch talkgroup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trunked system tactical/operations talkgroup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trunked system interoperability talkgroup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other talkgroup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. Please rate the COMLINC system according to the following attributes:

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Is easy to use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meets our interoperability needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is reliable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. What is the approximate age of the COMLINC equipment?

	Hardware	Software/Firmware
Data communications equipment (router, modem)	<input type="text"/>	<input type="text"/>
COMLINC Interface cards	<input type="text"/>	<input type="text"/>
COMLINC Server	<input type="text"/>	<input type="text"/>
PCs operating COMLINC	<input type="text"/>	<input type="text"/>

13. What software version of COMLINC is currently installed?

COMLINC EVALUATION

14. How often is COMLINC used in your agency?

	For incidents/calls	For exercises/drills
Daily	<input type="radio"/>	<input type="radio"/>
Weekly	<input type="radio"/>	<input type="radio"/>
Monthly	<input type="radio"/>	<input type="radio"/>
Yearly	<input type="radio"/>	<input type="radio"/>
Rarely	<input type="radio"/>	<input type="radio"/>
Never	<input type="radio"/>	<input type="radio"/>
I don't know	<input type="radio"/>	<input type="radio"/>

15. Please add any comments you might have regarding the COMLINC rating.

16. Please identify the following issues or problems that you have had with COMLINC:

	Frequently	Sometimes	Seldom	Never	Other
Connection problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Poor audio quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Voice latency issues (audio delay) impact operations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
System crashes or fails	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
User did not know how to operate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

COMLINC EVALUATION

17. Would you be willing to be interviewed by DHS/OEC staff at your site (approx. 2 hours)?

	Yes	No
Within the next 2 months (late summer)	<input type="radio"/>	<input type="radio"/>
2 to 4 months (early fall)	<input type="radio"/>	<input type="radio"/>
I would like to decline an on-site interview	<input type="radio"/>	<input type="radio"/>

Other (please specify)

18. Please rate the usefulness of the following features not currently supported by COMLINC:

	Very Useful (4)	(3)	(2)	(1)	Not Needed (0)	No Opinion
Ability to link streaming video sources to PC-based workstations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to link streaming video sources to smartphone applications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to link a smartphone PTT application to existing radio systems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to link VoIP telephony systems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.



Thank You Page

Thank you for your interest in interoperable communications!

If finished, please click on the **DONE** button below and then close the browser window.

APPENDIX C

OES Survey Responses

COMLINC EVALUATION

Agency Name (Req.):	City of Roanoke E911	FARSW Hospital Preparedness Commission	Near Southwest Preparedness Alliance	City of Chesapeake	Eastern Virginia Healthcare Coalition
Address	215 Church Ave SW	320 Bristol West Blvd.	1944 Peters Creek Road	2130 South Military Hwy	1104 Madison Plaza Suite 201
Address 2	Suite 162	Suite 2B			
City/Town	Roanoke	Bristol, Tn. 37620	Roanoke	Chesapeake	Chesapeake
Phone Number	540-853-2411	423-652-1401	540-562-3482	757-382-1776	757-963-0632
Name (Req.):	John Powers	Robert Cofer	John T. Clark	Robb Braidwood	Ira Swartz
Title:	E911 Systems Coordinator	RHCC	RHCC Manager	Deputy Coordinator of Emergency Serv	Communications Specialist
Email Address (Req.):	john.powers@roanokeva.gov	rcofer@bvu.net	jtclark@vaems.org	rbraidwood@cityofchesapeake.net	swartz@vaems.org
Phone Number:	540-853-5485	276-791-0200	5404920633	757-382-1776	757-439-4322
Is there somebody else in your agency that you believe would be better suited to participate in this study?	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study
Does your agency have or use COMLINC Interoperability equipment?	Yes	No	Yes	No	Yes
Please send this survey to the point of contact listed below for action.					
Name (Req.)					
Agency					
Title					
Email Address (Req.)					
How long ago was the COMLINC unit installed?	More than 5 years		More than 5 years		More than 5 years
What type of COMLINC equipment is used by your agency (check all that apply)?					
Fixed gateway installation	Fixed gateway installation		Fixed gateway installation		Fixed gateway installation
Mobile gateway installation			Mobile gateway installation		Mobile gateway installation
Mobile phone application					
Unknown					
Other (please specify)					
I am able to provide funding information on my agency's COMLINC installation.	Yes		Yes		No
Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.	20		20		
COMLINC (check all that apply)?					
Fiber optics					Fiber optics
Microwave link					
Cable provider			Cable provider		
DSL or other wire-based commercial internet provider	DSL or other wire-based commercial internet provider				
MPLS or dedicated circuit					
Wireless data communications (4G/LTE)					Wireless data communications (4G/LTE)
Unknown					

COMLINC EVALUATION

Agency Name (Req.):	City of Roanoke E911	FARSW Hospital Preparedness Commission	Near Southwest Preparedness Alliance	City of Chesapeake	Eastern Virginia Healthcare Coalition
Other (please specify)					BGAN
Our agency uses COMLINC to connect with (Check all that apply):					
Conventional dispatch channel - Local county or agency system					Local county or agency system
Conventional dispatch channel - Outside county or agency system	Outside county or agency system				
Conventional dispatch channel - Non-STARS Commonwealth system					
Conventional dispatch channel - Commonwealth STARS system	Commonwealth STARS system				Commonwealth STARS system
Conventional dispatch channel - Other system					Other system
Conventional tactical/operations channel - Local county or agency system					Local county or agency system
Conventional tactical/operations channel - Outside county or agency system	Outside county or agency system				
Conventional tactical/operations channel - Non-STARS Commonwealth system					
Conventional tactical/operations channel - Commonwealth STARS system	Commonwealth STARS system				Commonwealth STARS system
Conventional tactical/operations channel - Other system					Other system
Conventional interoperability channel - Local county or agency system					Local county or agency system
Conventional interoperability channel - Outside county or agency system	Outside county or agency system				
Conventional interoperability channel - Non-STARS Commonwealth system					
Conventional interoperability channel - Commonwealth STARS system	Commonwealth STARS system				Commonwealth STARS system
Conventional interoperability channel - Other system					Other system
Other conventional channel - Local county or agency system					Local county or agency system
Other conventional channel - Outside county or agency system	Outside county or agency system				
Other conventional channel - Non-STARS Commonwealth system					
Other conventional channel - Commonwealth STARS system	Commonwealth STARS system				Commonwealth STARS system

COMLINC EVALUATION

Agency Name (Req.):	City of Roanoke E911	FARSW Hospital Preparedness Commission	Near Southwest Preparedness Alliance	City of Chesapeake	Eastern Virginia Healthcare Coalition
Other conventional channel - Other system					Other system
Trunked system dispatch talkgroup - Local county or agency system					Local county or agency system
Trunked system dispatch talkgroup - Outside county or agency system	Outside county or agency system				
Trunked system dispatch talkgroup - Non-STARs Commonwealth system					
Trunked system dispatch talkgroup - Commonwealth STARs system	Commonwealth STARs system				Commonwealth STARs system
Trunked system dispatch talkgroup - Other system					
Trunked system tactical/operations talkgorup - Local county or agency system					Local county or agency system
Trunked system tactical/operations talkgorup - Outside county or agency system	Outside county or agency system				
Trunked system tactical/operations talkgorup - Non-STARs Commonwealth system					
Trunked system tactical/operations talkgorup - Commonwealth STARs system	Commonwealth STARs system				Commonwealth STARs system
Trunked system tactical/operations talkgorup - Other system					
Trunked system interoperability talkgroup - Local county or agency system					Local county or agency system
Trunked system interoperability talkgroup - Outside county or agency system	Outside county or agency system				
Trunked system interoperability talkgroup - Non-STARs Commonwealth system					
Trunked system interoperability talkgroup - Commonwealth STARs system	Commonwealth STARs system				Commonwealth STARs system
Trunked system interoperability talkgroup - Other system					
Other talkgroup - Local county or agency system					
Other talkgroup - Outside county or agency system	Outside county or agency system				
Other talkgroup - Non-STARs Commonwealth system					
Other talkgroup - Commonwealth STARs system	Commonwealth STARs system				
Other talkgroup - Other system					
Please rate the COMLINC system according to the following attributes:					
Is easy to use	Agree		Disagree		Agree
Meets our interoperability needs	Agree		Disagree		Strongly agree
Is reliable	Agree		Disagree		Agree

COMLINC EVALUATION

Agency Name (Req.):	City of Roanoke E911	FARSW Hospital Preparedness Commission	Near Southwest Preparedness Alliance	City of Chesapeake	Eastern Virginia Healthcare Coalition
Please add any comments you might have regarding the COMLINC rating.			The servers that house the COMLINC system are Windows XP servers. We have a total of four servers. Upgrading the servers has not been a high-enough priority to warrant spending the limited grant funding for this equipment. Windows XP are vulnerable to cyber issues. Microsoft no longer supports this platform.		Barrier for hospitals to install via IT and funds.
What is the approximate age of the COMLINC equipment?					
Data communications equipment (router, modem) - Hardware	5 to 10 years		5 to 10 years		1 to 5 years
Data communications equipment (router, modem) - Software/Firmware	2 or more versions old		Unknown		Last version
COMLINC Interface cards - Hardware	5 to 10 years		5 to 10 years		Unknown
COMLINC Interface cards - Software/Firmware	Never updated		Unknown		Unknown
COMLINC Server - Hardware	5 to 10 years		5 to 10 years		5 to 10 years
COMLINC Server - Software/Firmware	Never updated		Unknown		Current version
PCs operating COMLINC - Hardware	1 to 5 years		5 to 10 years		1 to 5 years
PCs operating COMLINC - Software/Firmware	2 or more versions old		Unknown		Current version
What software version of COMLINC is currently installed?	3.0 to 3.3		I don't know.		3.44 or newer
How often is COMLINC used by your agency for incidents or pre-planned events?	Monthly		Never		rarely
How often is COMLINC used by your agency for exercises or drills?	Monthly		Never		Monthly
Please identify the following issues or problems that you have had with COMLINC:					
Connection problems	Seldom		Other		Seldom
Poor audio quality	Sometimes		Other		Sometimes
Voice latency issues (audio delay) impact operations	Seldom		Other		Never
System crashes or fails	Seldom		Other		Seldom
User did not know how to operate	Sometimes		Frequently		Seldom
Other (please specify)			System is not used. We would like to be able to use the platform, but Windows XP is a concern.		
Would you be willing to be interviewed by DHS/OEC staff at your site (approx. 2 hours)?					
Within the next 2 months (late summer)	Yes		Yes		
2 to 4 months (early fall)	Yes				Yes

COMLINC EVALUATION

Agency Name (Req.):	City of Roanoke E911	FARSW Hospital Preparedness Commission	Near Southwest Preparedness Alliance	City of Chesapeake	Eastern Virginia Healthcare Coalition
I would like to decline an on-site interview	No				
Other (please specify)					
Please rate the usefulness of the following features not currently supported by COMLINC:					
Ability to link streaming video sources to PC-based workstations	(1)		Very Useful (4)		(3)
Ability to link streaming video sources to smartphone applications - Very Useful (4)	(1)		Very Useful (4)		Not Needed (0)
Ability to link a smartphone PTT application to existing radio systems - Very Useful (4)	(2)		Very Useful (4)		Not Needed (0)
Ability to link VoIP telephony systems - Very Useful (4)	(3)		Very Useful (4)		(2)
Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.			Our region would like to leverage the COMLINC system to enhance hospital-to-hospital and hospital-to-RHCC communications. Windows XP and limited funding is of concern.		N/A

COMLINC EVALUATION

Agency Name (Req.):	Craig County	Louisa County Sheriff's Office	Danville Fire Department	City of Williamsburg	Caroline County Sheriff's Office
Address	PO box 308	1 Woolfolk Ave	600 Lynn St	401 Lafayette Street	P O Box 39
Address 2		PO Box 504			
City/Town	New Castle	Louisa	Danville	Williamsburg	Bowling Green,VA
Phone Number	540-864-5010	540-967-1234	4347995206	757-220-6220	804-633-5400
Name (Req.):	Jim Cady	Tonya Miller	Michael Gobble	Pat Dent	Lisa Harvey
Title:	ESC/EMC	Director	911 Emergency Communications Mana	Fire Chief / EM Coordinator	911 Manager
Email Address (Req.):	jimcady1@gmail.com	tmiller@louisa.org	michael.gobble@danvilleva.gov	wdent@williamsburgva.gov	lharvey@co.caroline.va.us
Phone Number:	540-864-6515	540-967-3494	4347995206	757-220-6225	804-633-5400
Is there somebody else in your agency that you believe would be better suited to participate in this study?	No, I am the best suited person for this study	Yes, please send this study to the person named on the next page. Thank you.	Yes, please send this study to the person named on the next page. Thank you.	No, I am the best suited person for this study	Yes, please send this study to the person named on the next page. Thank you.
Does your agency have or use COMLINC Interoperability equipment?	Yes	Yes		Yes	
Please send this survey to the point of contact listed below for action.					
Name (Req.)		Bob Hardy	Erik Chambers		Lisa Harvey
Agency		Louisa County IT Department	Danville Fire Department		Caroline County S/O
Title		Director	Radio Communications Manager		911 Manager
Email Address (Req.)		bhardy@louisa.org	chamed@danvilleva.gov		lharvey@co.caroline.va.us
How long ago was the COMLINC unit installed?	More than 5 years	More than 5 years			
What type of COMLINC equipment is used by your agency (check all that apply)?					
Fixed gateway installation	Fixed gateway installation	Fixed gateway installation			
Mobile gateway installation					
Mobile phone application					
Unknown					
Other (please specify)					
I am able to provide funding information on my agency's COMLINC installation.	Yes	No			
Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.		0			
COMLINC (check all that apply)?					
Fiber optics					
Microwave link					
Cable provider					
DSL or other wire-based commercial internet provider					
MPLS or dedicated circuit					
Wireless data communications (4G/LTE)					
Unknown					

COMLINC EVALUATION

Agency Name (Req.):	Craig County	Louisa County Sheriff's Office	Danville Fire Department	City of Williamsburg	Caroline County Sheriff's Office
Other (please specify)	Not currently installed				
Our agency uses COMLINC to connect with (Check all that apply):					
Conventional dispatch channel - Local county or agency system					
Conventional dispatch channel - Outside county or agency system					
Conventional dispatch channel - Non-STARS Commonwealth system					
Conventional dispatch channel - Commonwealth STARS system					
Conventional dispatch channel - Other system					
Conventional tactical/operations channel - Local county or agency system					
Conventional tactical/operations channel - Outside county or agency system					
Conventional tactical/operations channel - Non-STARS Commonwealth system					
Conventional tactical/operations channel - Commonwealth STARS system					
Conventional tactical/operations channel - Other system					
Conventional interoperability channel - Local county or agency system					
Conventional interoperability channel - Outside county or agency system					
Conventional interoperability channel - Non-STARS Commonwealth system					
Conventional interoperability channel - Commonwealth STARS system					
Conventional interoperability channel - Other system					
Other conventional channel - Local county or agency system					
Other conventional channel - Outside county or agency system					
Other conventional channel - Non-STARS Commonwealth system					
Other conventional channel - Commonwealth STARS system					

COMLINC EVALUATION

Agency Name (Req.):	Craig County	Louisa County Sheriff's Office	Danville Fire Department	City of Williamsburg	Caroline County Sheriff's Office
Other conventional channel - Other system					
Trunked system dispatch talkgroup - Local county or agency system					
Trunked system dispatch talkgroup - Outside county or agency system					
Trunked system dispatch talkgroup - Non-STARS Commonwealth system					
Trunked system dispatch talkgroup - Commonwealth STARS system					
Trunked system dispatch talkgroup - Other system					
Trunked system tactical/operations talkgorup - Local county or agency system					
Trunked system tactical/operations talkgorup - Outside county or agency system					
Trunked system tactical/operations talkgorup - Non-STARS Commonwealth system					
Trunked system tactical/operations talkgorup - Commonwealth STARS system					
Trunked system tactical/operations talkgorup - Other system					
Trunked system interoperability talkgroup - Local county or agency system					
Trunked system interoperability talkgroup - Outside county or agency system					
Trunked system interoperability talkgroup - Non-STARS Commonwealth system					
Trunked system interoperability talkgroup - Commonwealth STARS system					
Trunked system interoperability talkgroup - Other system					
Other talkgroup - Local county or agency system					
Other talkgroup - Outside county or agency system					
Other talkgroup - Non-STARS Commonwealth system					
Other talkgroup - Commonwealth STARS system					
Other talkgroup - Other system					
Please rate the COMLINC system according to the following attributes:					
Is easy to use	Strongly disagree				
Meets our interoperability needs	Strongly disagree				
Is reliable	Strongly disagree				

COMLINC EVALUATION

Agency Name (Req.):	Craig County	Louisa County Sheriff's Office	Danville Fire Department	City of Williamsburg	Caroline County Sheriff's Office
Please add any comments you might have regarding the COMLINC rating.	This was difficult for our dispatchers to set up links so it wasn't used plus the required support internet line was costly for no usage				
What is the approximate age of the COMLINC equipment?					
Data communications equipment (router, modem) - Hardware	5 to 10 years				
Data communications equipment (router, modem) - Software/Firmware	Never updated				
COMLINC Interface cards - Hardware	5 to 10 years				
COMLINC Interface cards - Software/Firmware	Never updated				
COMLINC Server - Hardware	5 to 10 years				
COMLINC Server - Software/Firmware	Never updated				
PCs operating COMLINC - Hardware	5 to 10 years				
PCs operating COMLINC - Software/Firmware	Never updated				
What software version of COMLINC is currently installed?	I don't know.				
How often is COMLINC used by your agency for incidents or pre-planned events?	Never				
How often is COMLINC used by your agency for exercises or drills?	Never				
Please identify the following issues or problems that you have had with COMLINC:					
Connection problems	Other				
Poor audio quality	Other				
Voice latency issues (audio delay) impact operations	Other				
System crashes or fails	Other				
User did not know how to operate					
Other (please specify)					
Would you be willing to be interviewed by DHS/OEC staff at your site (approx. 2 hours)?					
Within the next 2 months (late summer)	Yes				
2 to 4 months (early fall)					

COMLINC EVALUATION

Agency Name (Req.):	Craig County	Louisa County Sheriff's Office	Danville Fire Department	City of Williamsburg	Caroline County Sheriff's Office
I would like to decline an on-site interview					
Other (please specify)					
Please rate the usefulness of the following features not currently supported by COMLINC:					
Ability to link streaming video sources to PC-based workstations	No Opinion				
Ability to link streaming video sources to smartphone applications - Very Useful (4)	No Opinion				
Ability to link a smartphone PTT application to existing radio systems - Very Useful (4)	(2)				
Ability to link VoIP telephony systems - Very Useful (4)	(2)				
Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.	Disconnected due to cost of dedicated internet line and difficulty in setting up links by our dispatchers during an emergency				

COMLINC EVALUATION

Agency Name (Req.):	Arlington County Public Safety Communications	City of Suffolk	Virginia State Police Division VI	Bath County	Virginia State Police
Address	1425 N Courthouse Rd	442 West Washington Street	3775 W Main ST	PO 309	3775 West Main Street
Address 2	7th Floor	Suite 1109		65 Courthouse Hill Road	
City/Town	Arlington	Suffolk	Salem	Warm Springs	Salem
Phone Number	703-558-2222	757-514-7233	540-380-5700	540-839-7236	540-380-5718
Name (Req.):	James Blood	Ken Beam	Robert Jones	Andy Seabolt	Greg Hutchins
Title:	Radio System Manager	CIO	State Police Dispatcher	Emergency Management Coordinator	Communications Technician Supervisor
Email Address (Req.):	jblood@arlingtonva.us	kbeam@suffolkva.us	robert.jones@vsp.virginia.gov	bathcodeofficial@tds.net	greg.hutchins@vsp.virginia.gov
Phone Number:	703-228-5112	757-514-7233	540-380-5700	540-839-7236	540-204-7482
Is there somebody else in your agency that you believe would be better suited to participate in this study?	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study
Does your agency have or use COMLINC Interoperability equipment?	Yes	Yes	Yes	No	Yes
Please send this survey to the point of contact listed below for action.					
Name (Req.)					
Agency					
Title					
Email Address (Req.)					
How long ago was the COMLINC unit installed?	Between 1 and 5 years	Less than 1 year	More than 5 years		More than 5 years
What type of COMLINC equipment is used by your agency (check all that apply)?					
Fixed gateway installation	Fixed gateway installation	Fixed gateway installation	Fixed gateway installation		Fixed gateway installation
Mobile gateway installation		Mobile gateway installation	Mobile gateway installation		Mobile gateway installation
Mobile phone application		Mobile phone application			
Unknown					
Other (please specify)					Tact Kit
I am able to provide funding information on my agency's COMLINC installation.	No	Yes	No		No
Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.			20		
COMLINC (check all that apply)?					
Fiber optics		Fiber optics			
Microwave link					Microwave link
Cable provider		Cable provider			
DSL or other wire-based commercial internet provider	DSL or other wire-based commercial internet provider		DSL or other wire-based commercial internet provider		
MPLS or dedicated circuit					
Wireless data communications (4G/LTE)					
Unknown					

COMLINC EVALUATION

Agency Name (Req.):	Arlington County Public Safety Communications	City of Suffolk	Virginia State Police Division VI	Bath County	Virginia State Police
Other (please specify)					
Our agency uses COMLINC to connect with (Check all that apply):					
Conventional dispatch channel - Local county or agency system		Local county or agency system	Local county or agency system		Local county or agency system
Conventional dispatch channel - Outside county or agency system		Outside county or agency system	Outside county or agency system		Outside county or agency system
Conventional dispatch channel - Non-STARS Commonwealth system		Non-STARS Commonwealth system	Non-STARS Commonwealth system		Non-STARS Commonwealth system
Conventional dispatch channel - Commonwealth STARS system		Commonwealth STARS system	Commonwealth STARS system		
Conventional dispatch channel - Other system		Other system	Other system		Other system
Conventional tactical/operations channel - Local county or agency system		Local county or agency system	Local county or agency system		Local county or agency system
Conventional tactical/operations channel - Outside county or agency system		Outside county or agency system	Outside county or agency system		Outside county or agency system
Conventional tactical/operations channel - Non-STARS Commonwealth system		Non-STARS Commonwealth system	Non-STARS Commonwealth system		Non-STARS Commonwealth system
Conventional tactical/operations channel - Commonwealth STARS system		Commonwealth STARS system	Commonwealth STARS system		
Conventional tactical/operations channel - Other system		Other system	Other system		Other system
Conventional interoperability channel - Local county or agency system		Local county or agency system	Local county or agency system		Local county or agency system
Conventional interoperability channel - Outside county or agency system		Outside county or agency system	Outside county or agency system		Outside county or agency system
Conventional interoperability channel - Non-STARS Commonwealth system		Non-STARS Commonwealth system	Non-STARS Commonwealth system		Non-STARS Commonwealth system
Conventional interoperability channel - Commonwealth STARS system		Commonwealth STARS system	Commonwealth STARS system		
Conventional interoperability channel - Other system		Other system	Other system		Other system
Other conventional channel - Local county or agency system		Local county or agency system	Local county or agency system		Local county or agency system
Other conventional channel - Outside county or agency system		Outside county or agency system	Outside county or agency system		Outside county or agency system
Other conventional channel - Non-STARS Commonwealth system		Non-STARS Commonwealth system	Non-STARS Commonwealth system		Non-STARS Commonwealth system
Other conventional channel - Commonwealth STARS system		Commonwealth STARS system	Commonwealth STARS system		

COMLINC EVALUATION

Agency Name (Req.):	Arlington County Public Safety Communications	City of Suffolk	Virginia State Police Division VI	Bath County	Virginia State Police
Other conventional channel - Other system		Other system	Other system		Other system
Trunked system dispatch talkgroup - Local county or agency system		Local county or agency system	Local county or agency system		Local county or agency system
Trunked system dispatch talkgroup - Outside county or agency system		Outside county or agency system	Outside county or agency system		Outside county or agency system
Trunked system dispatch talkgroup - Non-STARs Commonwealth system		Non-STARs Commonwealth system	Non-STARs Commonwealth system		Non-STARs Commonwealth system
Trunked system dispatch talkgroup - Commonwealth STARs system		Commonwealth STARs system	Commonwealth STARs system		
Trunked system dispatch talkgroup - Other system		Other system	Other system		Other system
Trunked system tactical/operations talkgorup - Local county or agency system		Local county or agency system	Local county or agency system		Local county or agency system
Trunked system tactical/operations talkgorup - Outside county or agency system		Outside county or agency system	Outside county or agency system		Outside county or agency system
Trunked system tactical/operations talkgorup - Non-STARs Commonwealth system		Non-STARs Commonwealth system	Non-STARs Commonwealth system		Non-STARs Commonwealth system
Trunked system tactical/operations talkgorup - Commonwealth STARs system		Commonwealth STARs system	Commonwealth STARs system		
Trunked system tactical/operations talkgorup - Other system		Other system	Other system		Other system
Trunked system interoperability talkgroup - Local county or agency system		Local county or agency system	Local county or agency system		Local county or agency system
Trunked system interoperability talkgroup - Outside county or agency system		Outside county or agency system	Outside county or agency system		Outside county or agency system
Trunked system interoperability talkgroup - Non-STARs Commonwealth system		Non-STARs Commonwealth system	Non-STARs Commonwealth system		Non-STARs Commonwealth system
Trunked system interoperability talkgroup - Commonwealth STARs system		Commonwealth STARs system	Commonwealth STARs system		
Trunked system interoperability talkgroup - Other system		Other system	Other system		Other system
Other talkgroup - Local county or agency system		Local county or agency system	Local county or agency system		
Other talkgroup - Outside county or agency system		Outside county or agency system	Outside county or agency system		
Other talkgroup - Non-STARs Commonwealth system		Non-STARs Commonwealth system	Non-STARs Commonwealth system		
Other talkgroup - Commonwealth STARs system		Commonwealth STARs system	Commonwealth STARs system		
Other talkgroup - Other system		Other system	Other system		
Please rate the COMLINC system according to the following attributes:					
Is easy to use		Strongly agree	Agree		Strongly agree
Meets our interoperability needs		Strongly agree	Agree		Agree
Is reliable		Strongly agree	Agree		Agree

COMLINC EVALUATION

Agency Name (Req.):	Arlington County Public Safety Communications	City of Suffolk	Virginia State Police Division VI	Bath County	Virginia State Police
Please add any comments you might have regarding the COMLINC rating.	COMLINC was installed as part of initial program but is currently utilized		Department needs greater bandwidth to make use more effective.		If you don't use/operate/setup it often you sometimes forget exactly what to do.
What is the approximate age of the COMLINC equipment?					
Data communications equipment (router, modem) - Hardware	1 to 5 years	Less than 1 year	5 to 10 years		5 to 10 years
Data communications equipment (router, modem) - Software/Firmware	Unknown	Current version			Current version
COMLINC Interface cards - Hardware	1 to 5 years	Less than 1 year	Unknown		5 to 10 years
COMLINC Interface cards - Software/Firmware	Unknown	Current version			Current version
COMLINC Server - Hardware	1 to 5 years	Less than 1 year	1 to 5 years		5 to 10 years
COMLINC Server - Software/Firmware	Unknown	Current version			Current version
PCs operating COMLINC - Hardware	1 to 5 years	Less than 1 year	5 to 10 years		5 to 10 years
PCs operating COMLINC - Software/Firmware	Unknown	Current version			Current version
What software version of COMLINC is currently installed?		3.44 or newer	3.0 to 3.3		3.0 to 3.3
How often is COMLINC used by your agency for incidents or pre-planned events?	Never	Daily	Weekly		Weekly
How often is COMLINC used by your agency for exercises or drills?	Never	Monthly	rarely		Yearly
Please identify the following issues or problems that you have had with COMLINC:					
Connection problems		Never	Sometimes		Never
Poor audio quality		Never	Seldom		Seldom
Voice latency issues (audio delay) impact operations		Never	Sometimes		Seldom
System crashes or fails		Never	Seldom		Never
User did not know how to operate		Never	Seldom		Seldom
Other (please specify)					
Would you be willing to be interviewed by DHS/OEC staff at your site (approx. 2 hours)?					
Within the next 2 months (late summer)		Yes			Yes
2 to 4 months (early fall)		Yes			Yes

COMLINC EVALUATION

Agency Name (Req.):	Arlington County Public Safety Communications	City of Suffolk	Virginia State Police Division VI	Bath County	Virginia State Police
I would like to decline an on-site interview	Yes	Yes	Yes		
Other (please specify)					
Please rate the usefulness of the following features not currently supported by COMLINC:					
Ability to link streaming video sources to PC-based workstations		Very Useful (4)	(3)		Very Useful (4)
Ability to link streaming video sources to smartphone applications - Very Useful (4)		Very Useful (4)	(3)		(3)
Ability to link a smartphone PTT application to existing radio systems - Very Useful (4)		Very Useful (4)	(3)		(3)
Ability to link VoIP telephony systems - Very Useful (4)		Very Useful (4)	(3)		(3)
Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.					Presently VSP Div 6 is patched with Roanoke County and Franklin County for the Mountain Valley Pipeline construction project. We patch with Roanoke City every other week end for a City/State Partnership for LE supplement in the city. Commlinc Tact Kit is being used this week 7/24 to 7/30 for communications with Blue Ridge Parkway LE for communications for Floyd Fest. These are just a few of the consistant events that are ongoing. We do plan to use the Tact Kit in Bath and Highland Counties to connect to Sheriffs offices involved in the Atlantic Coast Pipeline construction.

COMLINC EVALUATION

Agency Name (Req.):	Halifax County E-911 Center	Appomattox Emergency Communications Center	Franklin County Sheriff's Office	Smithfield Police Department	City of Newport News, IT
Address	1040 Mary Bethune Street	339 Court St.	70 East Court St	913 South Church Street	513 Oyster Point Rd
Address 2	P O Box 699	P. O. Box 397			Bldg Q
City/Town	Halifax	Appomattox	Rocky Mount, VA	Smithfield Va 23430	Newport News, VA
Phone Number	434-476-3334	434-352-3950	540-483-391	757-357-3247	757-269-2430
Name (Req.):	Wendy Jones	Bobby Wingfield	Pat Regan	Alonzo Howell	Patrick Biron
Title:	E-911 Director	Public Safety Director	Emergency Communications Coordinat	Chief of Police	Communications Manager
Email Address (Req.):	hce911@co.halifax.va.us	bobby.wingfield@appomattoxcountyva.gov	pat.regan@franklincountyva.gov	ahowell@smithfieldva.gov	pbiron@nnva.gov
Phone Number:	434-476-1784	434-352-3950	540-483-3091	757-357-3247	757-269-2430
Is there somebody else in your agency that you believe would be better suited to participate in this study?	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study
Does your agency have or use COMLINC Interoperability equipment?	Yes	Yes	Yes	I don't know	I don't know
Please send this survey to the point of contact listed below for action.					
Name (Req.)					
Agency					
Title					
Email Address (Req.)					
How long ago was the COMLINC unit installed?	More than 5 years	More than 5 years	More than 5 years		
What type of COMLINC equipment is used by your agency (check all that apply)?					
Fixed gateway installation	Fixed gateway installation	Fixed gateway installation	Fixed gateway installation		
Mobile gateway installation					
Mobile phone application					
Unknown					
Other (please specify)					
I am able to provide funding information on my agency's COMLINC installation.	Yes	Yes	No		
Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.		0	0		
COMLINC (check all that apply)?					
Fiber optics		Fiber optics			
Microwave link					
Cable provider			Cable provider		
DSL or other wire-based commercial internet provider					
MPLS or dedicated circuit					
Wireless data communications (4G/LTE)					
Unknown					

COMLINC EVALUATION

Agency Name (Req.):	Halifax County E-911 Center	Appomattox Emergency Communications Center	Franklin County Sheriff's Office	Smithfield Police Department	City of Newport News, IT
Other (please specify)	County Internet				
Our agency uses COMLINC to connect with (Check all that apply):					
Conventional dispatch channel - Local county or agency system		Local county or agency system			
Conventional dispatch channel - Outside county or agency system		Outside county or agency system			
Conventional dispatch channel - Non-STARS Commonwealth system					
Conventional dispatch channel - Commonwealth STARS system		Commonwealth STARS system			
Conventional dispatch channel - Other system					
Conventional tactical/operations channel - Local county or agency system					
Conventional tactical/operations channel - Outside county or agency system					
Conventional tactical/operations channel - Non-STARS Commonwealth system					
Conventional tactical/operations channel - Commonwealth STARS system					
Conventional tactical/operations channel - Other system					
Conventional interoperability channel - Local county or agency system		Local county or agency system			
Conventional interoperability channel - Outside county or agency system					
Conventional interoperability channel - Non-STARS Commonwealth system					
Conventional interoperability channel - Commonwealth STARS system		Commonwealth STARS system			
Conventional interoperability channel - Other system					
Other conventional channel - Local county or agency system					
Other conventional channel - Outside county or agency system					
Other conventional channel - Non-STARS Commonwealth system					
Other conventional channel - Commonwealth STARS system					

COMLINC EVALUATION

Agency Name (Req.):	Halifax County E-911 Center	Appomattox Emergency Communications Center	Franklin County Sheriff's Office	Smithfield Police Department	City of Newport News, IT
Other conventional channel - Other system					
Trunked system dispatch talkgroup - Local county or agency system					
Trunked system dispatch talkgroup - Outside county or agency system		Outside county or agency system	Outside county or agency system		
Trunked system dispatch talkgroup - Non-STARS Commonwealth system					
Trunked system dispatch talkgroup - Commonwealth STARS system		Commonwealth STARS system			
Trunked system dispatch talkgroup - Other system					
Trunked system tactical/operations talkgorup - Local county or agency system					
Trunked system tactical/operations talkgorup - Outside county or agency system					
Trunked system tactical/operations talkgorup - Non-STARS Commonwealth system					
Trunked system tactical/operations talkgorup - Commonwealth STARS system			Commonwealth STARS system		
Trunked system tactical/operations talkgorup - Other system					
Trunked system interoperability talkgroup - Local county or agency system					
Trunked system interoperability talkgroup - Outside county or agency system		Outside county or agency system	Outside county or agency system		
Trunked system interoperability talkgroup - Non-STARS Commonwealth system					
Trunked system interoperability talkgroup - Commonwealth STARS system		Commonwealth STARS system			
Trunked system interoperability talkgroup - Other system					
Other talkgroup - Local county or agency system					
Other talkgroup - Outside county or agency system					
Other talkgroup - Non-STARS Commonwealth system					
Other talkgroup - Commonwealth STARS system					
Other talkgroup - Other system					
Please rate the COMLINC system according to the following attributes:					
Is easy to use		Agree	Neither agree nor disagree		
Meets our interoperability needs		Neither agree nor disagree	Agree		
Is reliable		Agree	Neither agree nor disagree		

COMLINC EVALUATION

Agency Name (Req.):	Halifax County E-911 Center	Appomattox Emergency Communications Center	Franklin County Sheriff's Office	Smithfield Police Department	City of Newport News, IT
Please add any comments you might have regarding the COMLINC rating.					
What is the approximate age of the COMLINC equipment?					
Data communications equipment (router, modem) - Hardware	More than 10 years	5 to 10 years	5 to 10 years		
Data communications equipment (router, modem) - Software/Firmware	Never updated	Unknown	Current version		
COMLINC Interface cards - Hardware	More than 10 years	5 to 10 years	5 to 10 years		
COMLINC Interface cards - Software/Firmware	Never updated	Never updated	Current version		
COMLINC Server - Hardware	More than 10 years	5 to 10 years	5 to 10 years		
COMLINC Server - Software/Firmware	Never updated	Unknown	Current version		
PCs operating COMLINC - Hardware	More than 10 years	5 to 10 years	1 to 5 years		
PCs operating COMLINC - Software/Firmware	Never updated	Never updated	Current version		
What software version of COMLINC is currently installed?	Older than 3.0	I don't know.	3.44 or newer		
How often is COMLINC used by your agency for incidents or pre-planned events?		Yearly	rarely		
How often is COMLINC used by your agency for exercises or drills?	Never	Yearly	rarely		
Please identify the following issues or problems that you have had with COMLINC:					
Connection problems	Never	Sometimes	Sometimes		
Poor audio quality	Never	Seldom	Sometimes		
Voice latency issues (audio delay) impact operations	Never	Sometimes	Sometimes		
System crashes or fails	Never	Never	Sometimes		
User did not know how to operate	Frequently	Sometimes	Sometimes		
Other (please specify)	version is 314.8				
Would you be willing to be interviewed by DHS/OEC staff at your site (approx. 2 hours)?					
Within the next 2 months (late summer)		Yes			
2 to 4 months (early fall)		Yes	Yes		

COMLINC EVALUATION

Agency Name (Req.):	Halifax County E-911 Center	Appomattox Emergency Communications Center	Franklin County Sheriff's Office	Smithfield Police Department	City of Newport News, IT
I would like to decline an on-site interview	Yes				
Other (please specify)					
Please rate the usefulness of the following features not currently supported by COMLINC:					
Ability to link streaming video sources to PC-based workstations	Very Useful (4)	Very Useful (4)	(3)		
Ability to link streaming video sources to smartphone applications - Very Useful (4)	Very Useful (4)	Very Useful (4)	(3)		
Ability to link a smartphone PTT application to existing radio systems - Very Useful (4)	Very Useful (4)	Very Useful (4)	(3)		
Ability to link VoIP telephony systems - Very Useful (4)	Very Useful (4)	(1)	(2)		
Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.	Would just like to have more training, haven't had any in years.				

COMLINC EVALUATION

Agency Name (Req.):	City of Waynesboro Dept. of Emergency Mgmt	City of Norfolk	Poquoson Fire/Rescue	City of Virginia Beach	Lynchburg Department of Emergency Services
Address	250 S Wayne Ave Suite 301	1112 Azalea Garden Road	830 Poquoson Ave. 2nd floor	2508 Princess Anne Road	3621 Candlers Mountain Rd
Address 2					
City/Town	Waynesboro	Norfolk	Poquoson	Virginia Beach	Lynchburg
Phone Number	540-942-6698	757-823-1265	757-868-3512	757-385-4066	434-455-4285
Name (Req.):	Gary P Critzer	Jerry Burkhalter	Mike Bryant	Robert A. DeLauney	Melissa Foster
Title:	Director	Network Engineer IV	Deputy Fire Chief/EM Coordinator	Radio Systems Engineer	Director
Email Address (Req.):	critzergp@ci.waynesboro.va.us	jerry.burkhalter@norfolk.gov	Michael.Bryant@poquoson-va.gov	rdelaune@vb.gov.com	melissa.foster@lynchburgva.gov
Phone Number:	540-942-6698	757-823-1265	757-868-3512	757-385-4066	434-455-4285
Is there somebody else in your agency that you believe would be better suited to participate in this study?	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study
Does your agency have or use COMLINC Interoperability equipment?	Yes	No	No	No	Yes
Please send this survey to the point of contact listed below for action.					
Name (Req.)					
Agency					
Title					
Email Address (Req.)					
How long ago was the COMLINC unit installed?	More than 5 years		More than 5 years		More than 5 years
What type of COMLINC equipment is used by your agency (check all that apply)?					
Fixed gateway installation	Fixed gateway installation				Fixed gateway installation
Mobile gateway installation					
Mobile phone application	Mobile phone application				
Unknown			Unknown		
Other (please specify)					
I am able to provide funding information on my agency's COMLINC installation.	No		Yes		No
Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.					
COMLINC (check all that apply)?					
Fiber optics					
Microwave link					
Cable provider					Cable provider
DSL or other wire-based commercial internet provider	DSL or other wire-based commercial internet provider				
MPLS or dedicated circuit					
Wireless data communications (4G/LTE)					
Unknown					

COMLINC EVALUATION

Agency Name (Req.):	City of Waynesboro Dept. of Emergency Mgmt	City of Norfolk	Poquoson Fire/Rescue	City of Virginia Beach	Lynchburg Department of Emergency Services
Other (please specify)					
Our agency uses COMLINC to connect with (Check all that apply):					
Conventional dispatch channel - Local county or agency system					
Conventional dispatch channel - Outside county or agency system	Outside county or agency system				Outside county or agency system
Conventional dispatch channel - Non-STARS Commonwealth system					
Conventional dispatch channel - Commonwealth STARS system					
Conventional dispatch channel - Other system					
Conventional tactical/operations channel - Local county or agency system					
Conventional tactical/operations channel - Outside county or agency system	Outside county or agency system				
Conventional tactical/operations channel - Non-STARS Commonwealth system					
Conventional tactical/operations channel - Commonwealth STARS system					
Conventional tactical/operations channel - Other system					
Conventional interoperability channel - Local county or agency system					
Conventional interoperability channel - Outside county or agency system	Outside county or agency system				
Conventional interoperability channel - Non-STARS Commonwealth system					
Conventional interoperability channel - Commonwealth STARS system					
Conventional interoperability channel - Other system					
Other conventional channel - Local county or agency system					
Other conventional channel - Outside county or agency system	Outside county or agency system				
Other conventional channel - Non-STARS Commonwealth system					
Other conventional channel - Commonwealth STARS system					

COMLINC EVALUATION

Agency Name (Req.):	City of Waynesboro Dept. of Emergency Mgmt	City of Norfolk	Poquoson Fire/Rescue	City of Virginia Beach	Lynchburg Department of Emergency Services
Other conventional channel - Other system					
Trunked system dispatch talkgroup - Local county or agency system					
Trunked system dispatch talkgroup - Outside county or agency system	Outside county or agency system				
Trunked system dispatch talkgroup - Non-STARs Commonwealth system					
Trunked system dispatch talkgroup - Commonwealth STARs system					Commonwealth STARs system
Trunked system dispatch talkgroup - Other system					
Trunked system tactical/operations talkgorup - Local county or agency system					
Trunked system tactical/operations talkgorup - Outside county or agency system	Outside county or agency system				
Trunked system tactical/operations talkgorup - Non-STARs Commonwealth system					
Trunked system tactical/operations talkgorup - Commonwealth STARs system					
Trunked system tactical/operations talkgorup - Other system					
Trunked system interoperability talkgroup - Local county or agency system					
Trunked system interoperability talkgroup - Outside county or agency system	Outside county or agency system				
Trunked system interoperability talkgroup - Non-STARs Commonwealth system					
Trunked system interoperability talkgroup - Commonwealth STARs system					
Trunked system interoperability talkgroup - Other system					
Other talkgroup - Local county or agency system					
Other talkgroup - Outside county or agency system	Outside county or agency system				
Other talkgroup - Non-STARs Commonwealth system					
Other talkgroup - Commonwealth STARs system					
Other talkgroup - Other system					
Please rate the COMLINC system according to the following attributes:					
Is easy to use	Agree				Agree
Meets our interoperability needs	Agree				Disagree
Is reliable	Agree				Disagree

COMLINC EVALUATION

Agency Name (Req.):	City of Waynesboro Dept. of Emergency Mgmt	City of Norfolk	Poquoson Fire/Rescue	City of Virginia Beach	Lynchburg Department of Emergency Services
Please add any comments you might have regarding the COMLINC rating.					COMLINC (RIOS) system with our regional partners there is normally some problem. Either the connection is down or there is an equipment issue here or at another location. Also, the system has never reached a point where it was used on a daily basis (other than testing) so few people think about it when an opportunity presents itself.
What is the approximate age of the COMLINC equipment?					
Data communications equipment (router, modem) - Hardware	1 to 5 years				5 to 10 years
Data communications equipment (router, modem) - Software/Firmware	Current version				Last version
COMLINC Interface cards - Hardware	1 to 5 years				5 to 10 years
COMLINC Interface cards - Software/Firmware	Current version				Unknown
COMLINC Server - Hardware	1 to 5 years				5 to 10 years
COMLINC Server - Software/Firmware	Current version				Last version
PCs operating COMLINC - Hardware	1 to 5 years				1 to 5 years
PCs operating COMLINC - Software/Firmware	Current version				2 or more versions old
What software version of COMLINC is currently installed?	3.44 or newer				3.0 to 3.3
How often is COMLINC used by your agency for incidents or pre-planned events?	Weekly				rarely
How often is COMLINC used by your agency for exercises or drills?	Yearly				rarely
Please identify the following issues or problems that you have had with COMLINC:					
Connection problems	Sometimes				Frequently
Poor audio quality	Seldom				Frequently
Voice latency issues (audio delay) impact operations	Seldom				Frequently
System crashes or fails	Seldom				Seldom
User did not know how to operate	Sometimes				Never
Other (please specify)					
Would you be willing to be interviewed by DHS/OEC staff at your site (approx. 2 hours)?					
Within the next 2 months (late summer)	Yes				
2 to 4 months (early fall)					Yes

COMLINC EVALUATION

Agency Name (Req.):	City of Waynesboro Dept. of Emergency Mgmt	City of Norfolk	Poquoson Fire/Rescue	City of Virginia Beach	Lynchburg Department of Emergency Services
I would like to decline an on-site interview					
Other (please specify)					
Please rate the usefulness of the following features not currently supported by COMLINC:					
Ability to link streaming video sources to PC-based workstations	Very Useful (4)				Not Needed (0)
Ability to link streaming video sources to smartphone applications - Very Useful (4)	Very Useful (4)				Not Needed (0)
Ability to link a smartphone PTT application to existing radio systems - Very Useful (4)	Very Useful (4)				Not Needed (0)
Ability to link VoIP telephony systems - Very Useful (4)	Very Useful (4)				Not Needed (0)
Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.					When RIOS was installed our agency determined that we wanted to find a daily use for the equipment so that it would not be forgotten and become obsolete. We established a protocol with a local university to use each time responders went on their campus. Now, that university is on our radio system so we no longer use it on a daily basis.

COMLINC EVALUATION

Agency Name (Req.):	Norfolk Fire-Rescue	Culpeper County Public Safety Communications Center	Henrico County Police	Washington County Emergency Management	Nelson County Emergency Communications
Address	100 Brooke Ave.	14022 Public Safety Ct	7701 E. Parham Rd	20281 Rustic Lane	84 Courthouse Square
Address 2				Public Safety Building	PO Box 336
City/Town	Norfolk, VA	Culpeper	Henrico	Abingdon	Lovingston
Phone Number	757-664-6600	540-727-7900	804-501-7100	276-525-1331	434-263-7050
Name (Req.):	Jeffrey F. Wise	William Martin	Stephen L. Weis	Theresa Kingsley-Varble	Susan Rorrer
Title:	Fire Chief	Director	Emergency Communications Manager	Coordinator of Emergency Management	Director of Information Systems
Email Address (Req.):	jeff.wise@norfolk.gov	WMARTIN@CULPEPERCOUNTY.GOV	wei03@henrico.us	tkingsley@washcova.com	srorrer@nelsoncounty.org
Phone Number:	757-664-6600	540-727-7900	804-501-7137	276-525-1331	434-263-7120
Is there somebody else in your agency that you believe would be better suited to participate in this study?	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study
Does your agency have or use COMLINC Interoperability equipment?	I don't know	Yes	Yes	Yes	Yes
Please send this survey to the point of contact listed below for action.					
Name (Req.)					
Agency					
Title					
Email Address (Req.)					
How long ago was the COMLINC unit installed?		More than 5 years	More than 5 years	Between 1 and 5 years	More than 5 years
What type of COMLINC equipment is used by your agency (check all that apply)?					
Fixed gateway installation		Fixed gateway installation	Fixed gateway installation		Fixed gateway installation
Mobile gateway installation					
Mobile phone application					
Unknown				Unknown	
Other (please specify)					
I am able to provide funding information on my agency's COMLINC installation.		No	No	No	No
Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.					
COMLINC (check all that apply)?					
Fiber optics					Fiber optics
Microwave link					
Cable provider		Cable provider			
DSL or other wire-based commercial internet provider					
MPLS or dedicated circuit					
Wireless data communications (4G/LTE)					
Unknown				Unknown	

COMLINC EVALUATION

Agency Name (Req.):	Norfolk Fire-Rescue	Culpeper County Public Safety Communications Center	Henrico County Police	Washington County Emergency Management	Nelson County Emergency Communications
Other (please specify)					
Our agency uses COMLINC to connect with (Check all that apply):					
Conventional dispatch channel - Local county or agency system				Local county or agency system	
Conventional dispatch channel - Outside county or agency system		Outside county or agency system		Outside county or agency system	Outside county or agency system
Conventional dispatch channel - Non-STARS Commonwealth system					
Conventional dispatch channel - Commonwealth STARS system				Commonwealth STARS system	
Conventional dispatch channel - Other system					
Conventional tactical/operations channel - Local county or agency system					
Conventional tactical/operations channel - Outside county or agency system		Outside county or agency system			Outside county or agency system
Conventional tactical/operations channel - Non-STARS Commonwealth system					
Conventional tactical/operations channel - Commonwealth STARS system					
Conventional tactical/operations channel - Other system					
Conventional interoperability channel - Local county or agency system					
Conventional interoperability channel - Outside county or agency system		Outside county or agency system			Outside county or agency system
Conventional interoperability channel - Non-STARS Commonwealth system					
Conventional interoperability channel - Commonwealth STARS system					
Conventional interoperability channel - Other system					
Other conventional channel - Local county or agency system					
Other conventional channel - Outside county or agency system		Outside county or agency system			
Other conventional channel - Non-STARS Commonwealth system					
Other conventional channel - Commonwealth STARS system					

COMLINC EVALUATION

Agency Name (Req.):	Norfolk Fire-Rescue	Culpeper County Public Safety Communications Center	Henrico County Police	Washington County Emergency Management	Nelson County Emergency Communications
Other conventional channel - Other system					
Trunked system dispatch talkgroup - Local county or agency system					
Trunked system dispatch talkgroup - Outside county or agency system		Outside county or agency system			
Trunked system dispatch talkgroup - Non-STARS Commonwealth system					
Trunked system dispatch talkgroup - Commonwealth STARS system					
Trunked system dispatch talkgroup - Other system					
Trunked system tactical/operations talkgorup - Local county or agency system					
Trunked system tactical/operations talkgorup - Outside county or agency system		Outside county or agency system			
Trunked system tactical/operations talkgorup - Non-STARS Commonwealth system					
Trunked system tactical/operations talkgorup - Commonwealth STARS system					
Trunked system tactical/operations talkgorup - Other system					
Trunked system interoperability talkgroup - Local county or agency system					
Trunked system interoperability talkgroup - Outside county or agency system		Outside county or agency system			
Trunked system interoperability talkgroup - Non-STARS Commonwealth system					
Trunked system interoperability talkgroup - Commonwealth STARS system					
Trunked system interoperability talkgroup - Other system					
Other talkgroup - Local county or agency system					
Other talkgroup - Outside county or agency system					
Other talkgroup - Non-STARS Commonwealth system					
Other talkgroup - Commonwealth STARS system					
Other talkgroup - Other system					
Please rate the COMLINC system according to the following attributes:					
Is easy to use		Strongly agree		Neither agree nor disagree	Agree
Meets our interoperability needs		Neither agree nor disagree		Agree	Agree
Is reliable		Agree		Neither agree nor disagree	Agree

COMLINC EVALUATION

Agency Name (Req.):	Norfolk Fire-Rescue	Culpeper County Public Safety Communications Center	Henrico County Police	Washington County Emergency Management	Nelson County Emergency Communications
Please add any comments you might have regarding the COMLINC rating.		Communications - radio traffic needs to be faster and clearer		This system received through coordination with VSP/VITA, unfamiliar with the system mechanics. We defer to VSP for the updates, etc. as they have performed all maintenance.	
What is the approximate age of the COMLINC equipment?					
Data communications equipment (router, modem) - Hardware		5 to 10 years		1 to 5 years	More than 10 years
Data communications equipment (router, modem) - Software/Firmware		Current version		Current version	Unknown
COMLINC Interface cards - Hardware		5 to 10 years		1 to 5 years	More than 10 years
COMLINC Interface cards - Software/Firmware		Current version			Unknown
COMLINC Server - Hardware		5 to 10 years			More than 10 years
COMLINC Server - Software/Firmware		Unknown			Unknown
PCs operating COMLINC - Hardware		5 to 10 years			More than 10 years
PCs operating COMLINC - Software/Firmware		Current version			Unknown
What software version of COMLINC is currently installed?		3.44 or newer			I don't know.
How often is COMLINC used by your agency for incidents or pre-planned events?		Weekly	Never	Monthly	Yearly
How often is COMLINC used by your agency for exercises or drills?		Yearly	Never	rarely	Monthly
Please identify the following issues or problems that you have had with COMLINC:					
Connection problems		Sometimes		Sometimes	Frequently
Poor audio quality		Frequently		Sometimes	Frequently
Voice latency issues (audio delay) impact operations		Frequently		Sometimes	Sometimes
System crashes or fails		Seldom		Seldom	Sometimes
User did not know how to operate		Never		Seldom	Sometimes
Other (please specify)					
Would you be willing to be interviewed by DHS/OEC staff at your site (approx. 2 hours)?					No
Within the next 2 months (late summer)					No
2 to 4 months (early fall)		Yes			Yes

COMLINC EVALUATION

Agency Name (Req.):	Norfolk Fire-Rescue	Culpeper County Public Safety Communications Center	Henrico County Police	Washington County Emergency Management	Nelson County Emergency Communications
I would like to decline an on-site interview				Yes	No
Other (please specify)					
Please rate the usefulness of the following features not currently supported by COMLINC:					
Ability to link streaming video sources to PC-based workstations		Very Useful (4)		(3)	(2)
Ability to link streaming video sources to smartphone applications - Very Useful (4)		Very Useful (4)		(3)	(2)
Ability to link a smartphone PTT application to existing radio systems - Very Useful (4)		Very Useful (4)		(3)	Very Useful (4)
Ability to link VoIP telephony systems - Very Useful (4)		Very Useful (4)		(3)	Very Useful (4)
Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.		We use COMLINK at least 5 times a week testing with City of Fredericksburg, Stafford, Spotsylvania, VSP I, Lousia, Caroline, Orange, Prince William, King George. I would like to see if this system could be upgraded and what could be done to make the connection faster and clearer.			COMLINC is an important communications tool in our center however dispatchers are reluctant to try to use it because of issues with it working properly. The system used to be tested (trained on) weekly with neighboring localities however interest is now lacking due to issues. The system needs covered under a maintenance contract and outdated hardware replaced. Routine exercises need to be conducted.

COMLINC EVALUATION

Agency Name (Req.):	City of Salem Police Department	New Kent Sheriff's Office	Clarke County Sheriff's Office	Middlesex County Sheriff's Office	County of Smyth
Address	36 E. Calhoun St.	P.O. Box 186	100 N. Church St.	75 Oakes Landing Rd	819 Matson Dr
Address 2					
City/Town	Salem	New Kent	Berryville	SALUDA	Marion
Phone Number	540-375-3078	804-966-9500	540-955-1234	804-758-2779	276-782-4058
Name (Req.):	Rebekah Craft	Katherine Cheeley	Pamela Hess	Eileen T Koehl	Shannon Williams
Title:	Telecommunications Manager	Operations Manager	ECC Director	Communications Supervisor	911 Coordinatgor
Email Address (Req.):	racraft@salemva.gov	kmcheeley@newkent-va.us	phess@clarkecounty.gov	e.koehl@co.middlesex.va.us	smyth911@smythcounty.org
Phone Number:	540-521-8065	804-966-9515	540-955-5106	804-815-9167	276-706-8314
Is there somebody else in your agency that you believe would be better suited to participate in this study?	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study
Does your agency have or use COMLINC Interoperability equipment?	Yes	Yes	Yes	No	Yes
Please send this survey to the point of contact listed below for action.					
Name (Req.)					
Agency					
Title					
Email Address (Req.)					
How long ago was the COMLINC unit installed?	More than 5 years	I don't know.	More than 5 years		Between 1 and 5 years
What type of COMLINC equipment is used by your agency (check all that apply)?					
Fixed gateway installation		Fixed gateway installation	Fixed gateway installation		Fixed gateway installation
Mobile gateway installation			Mobile gateway installation		
Mobile phone application					
Unknown	Unknown				
Other (please specify)					
I am able to provide funding information on my agency's COMLINC installation.	No	No	Yes		No
Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.				0	
COMLINC (check all that apply)?					
Fiber optics					
Microwave link					
Cable provider					
DSL or other wire-based commercial internet provider			DSL or other wire-based commercial internet provider		DSL or other wire-based commercial internet provider
MPLS or dedicated circuit					
Wireless data communications (4G/LTE)			Wireless data communications (4G/LTE)		
Unknown	Unknown	Unknown			

COMLINC EVALUATION

Agency Name (Req.):	City of Salem Police Department	New Kent Sheriff's Office	Clarke County Sheriff's Office	Middlesex County Sheriff's Office	County of Smyth
Other (please specify)					
Our agency uses COMLINC to connect with (Check all that apply):					
Conventional dispatch channel - Local county or agency system		Local county or agency system	Local county or agency system		
Conventional dispatch channel - Outside county or agency system		Outside county or agency system	Outside county or agency system		
Conventional dispatch channel - Non-STARS Commonwealth system			Non-STARS Commonwealth system		
Conventional dispatch channel - Commonwealth STARS system					
Conventional dispatch channel - Other system					
Conventional tactical/operations channel - Local county or agency system					
Conventional tactical/operations channel - Outside county or agency system			Outside county or agency system		
Conventional tactical/operations channel - Non-STARS Commonwealth system					
Conventional tactical/operations channel - Commonwealth STARS system					
Conventional tactical/operations channel - Other system					
Conventional interoperability channel - Local county or agency system					
Conventional interoperability channel - Outside county or agency system					
Conventional interoperability channel - Non-STARS Commonwealth system					
Conventional interoperability channel - Commonwealth STARS system					
Conventional interoperability channel - Other system					
Other conventional channel - Local county or agency system					
Other conventional channel - Outside county or agency system					
Other conventional channel - Non-STARS Commonwealth system					
Other conventional channel - Commonwealth STARS system					

COMLINC EVALUATION

Agency Name (Req.):	City of Salem Police Department	New Kent Sheriff's Office	Clarke County Sheriff's Office	Middlesex County Sheriff's Office	County of Smyth
Other conventional channel - Other system					
Trunked system dispatch talkgroup - Local county or agency system					
Trunked system dispatch talkgroup - Outside county or agency system					
Trunked system dispatch talkgroup - Non-STARS Commonwealth system					
Trunked system dispatch talkgroup - Commonwealth STARS system					
Trunked system dispatch talkgroup - Other system					
Trunked system tactical/operations talkgorup - Local county or agency system					
Trunked system tactical/operations talkgorup - Outside county or agency system					
Trunked system tactical/operations talkgorup - Non-STARS Commonwealth system					
Trunked system tactical/operations talkgorup - Commonwealth STARS system					
Trunked system tactical/operations talkgorup - Other system					
Trunked system interoperability talkgroup - Local county or agency system					
Trunked system interoperability talkgroup - Outside county or agency system					
Trunked system interoperability talkgroup - Non-STARS Commonwealth system					
Trunked system interoperability talkgroup - Commonwealth STARS system					
Trunked system interoperability talkgroup - Other system					
Other talkgroup - Local county or agency system					
Other talkgroup - Outside county or agency system					
Other talkgroup - Non-STARS Commonwealth system					
Other talkgroup - Commonwealth STARS system					
Other talkgroup - Other system					
Please rate the COMLINC system according to the following attributes:					
Is easy to use		Neither agree nor disagree	Agree		Neither agree nor disagree
Meets our interoperability needs		Neither agree nor disagree	Disagree		Strongly disagree
Is reliable		Neither agree nor disagree	Neither agree nor disagree		Neither agree nor disagree

COMLINC EVALUATION

Agency Name (Req.):	City of Salem Police Department	New Kent Sheriff's Office	Clarke County Sheriff's Office	Middlesex County Sheriff's Office	County of Smyth
Please add any comments you might have regarding the COMLINC rating.	We have COMLINC but do not utilize it. It went out of service prior to my arrival at the agency almost 3 years ago and we got it back up and running approximately 6 months ago. Due to staffing and other issues, we have not been able to adequately train personnel and incorporate it into our daily operations. So...we have it but we don't use it...yet.		It is a under utilized piece of equipment. Does not have an application in our day to day operations. May be beneficial in a large scale incident.		
What is the approximate age of the COMLINC equipment?					
Data communications equipment (router, modem) - Hardware	5 to 10 years	Unknown	5 to 10 years		1 to 5 years
Data communications equipment (router, modem) - Software/Firmware	Unknown	Unknown	Unknown		Unknown
COMLINC Interface cards - Hardware	5 to 10 years	Unknown			1 to 5 years
COMLINC Interface cards - Software/Firmware	Unknown	Unknown	Unknown		Unknown
COMLINC Server - Hardware	5 to 10 years	Unknown	5 to 10 years		1 to 5 years
COMLINC Server - Software/Firmware	Unknown	Unknown	Unknown		Unknown
PCs operating COMLINC - Hardware	5 to 10 years	Unknown	5 to 10 years		1 to 5 years
PCs operating COMLINC - Software/Firmware	Unknown	Unknown	Unknown		Unknown
What software version of COMLINC is currently installed?	I don't know.	I don't know.	3.0 to 3.3		I don't know.
How often is COMLINC used by your agency for incidents or pre-planned events?	Never	rarely	Never		Never
How often is COMLINC used by your agency for exercises or drills?	Never	Never	Never		Never
Please identify the following issues or problems that you have had with COMLINC:					
Connection problems	Frequently	Sometimes	Sometimes		
Poor audio quality	Frequently	Sometimes	Sometimes		
Voice latency issues (audio delay) impact operations		Seldom	Never		
System crashes or fails		Never	Other		Sometimes
User did not know how to operate	Frequently	Frequently	Seldom		
Other (please specify)					
Would you be willing to be interviewed by DHS/OEC staff at your site (approx. 2 hours)?					
Within the next 2 months (late summer)					
2 to 4 months (early fall)	Yes		Yes		

COMLINC EVALUATION

Agency Name (Req.):	City of Salem Police Department	New Kent Sheriff's Office	Clarke County Sheriff's Office	Middlesex County Sheriff's Office	County of Smyth
I would like to decline an on-site interview		Yes			
Other (please specify)					
Please rate the usefulness of the following features not currently supported by COMLINC:					
Ability to link streaming video sources to PC-based workstations	(3)	Very Useful (4)	Very Useful (4)		No Opinion
Ability to link streaming video sources to smartphone applications - Very Useful (4)	(3)	Very Useful (4)	Very Useful (4)		No Opinion
Ability to link a smartphone PTT application to existing radio systems - Very Useful (4)	(1)	Very Useful (4)	Very Useful (4)		Not Needed (0)
Ability to link VoIP telephony systems - Very Useful (4)	No Opinion	Very Useful (4)	Very Useful (4)		(2)
Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.			I think that it could be a very useful tool for certain types of incidents.		

COMLINC EVALUATION

Agency Name (Req.):	Russell County	Richmond DEC	Smyth County	Eastern Shore of Virginia 9-1-1 Commission	Roanoke County ECC
Address	PO BOX 338	3516 North Hopkins Road	819 Matson Dr	23201 Front Street	5925 Cove Rd
Address 2			Marion	P. O. Box 337	
City/Town	LEBANON	RICHMOND	Va	Accomac	Roanoke
Phone Number	276-889-8034	804-646-6860	276-783-3298	757-787-0911	540-562-3265
Name (Req.):	JJ	Joseph Sanders	Shannon Williams	Jeffrey Flournoy	Beth Clemson
Title:	JJ	Program Manager	911 Coordinator	9-1-1 Director	CTS
Email Address (Req.):	JJ	joseph.sanders@richmondgov.com	smyth911@smythcounty.org	jflournoy@co.northampton.va.us	bclmelson@roanokecountyva.gov
Phone Number:	276-889-8034	804-467-5152	276-706-8314	757-787-0909	540-562-3265
Is there somebody else in your agency that you believe would be better suited to participate in this study?	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study
Does your agency have or use COMLINC Interoperability equipment?	Yes	Yes	Yes	Yes	Yes
Please send this survey to the point of contact listed below for action.					
Name (Req.)					
Agency					
Title					
Email Address (Req.)					
How long ago was the COMLINC unit installed?	Between 1 and 5 years	Between 1 and 5 years	Between 1 and 5 years	Between 1 and 5 years	Between 1 and 5 years
What type of COMLINC equipment is used by your agency (check all that apply)?					
Fixed gateway installation		Fixed gateway installation	Fixed gateway installation	Fixed gateway installation	
Mobile gateway installation		Mobile gateway installation			
Mobile phone application					
Unknown	Unknown				Unknown
Other (please specify)				I believe is Fixed Gateway Installation	
I am able to provide funding information on my agency's COMLINC installation.	No	No	No	No	No
Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.					
COMLINC (check all that apply)?					
Fiber optics		Fiber optics		Fiber optics	Fiber optics
Microwave link					
Cable provider		Cable provider			
DSL or other wire-based commercial internet provider					
MPLS or dedicated circuit					
Wireless data communications (4G/LTE)					
Unknown				Unknown	Unknown

COMLINC EVALUATION

Agency Name (Req.):	Russell County	Richmond DEC	Smyth County	Eastern Shore of Virginia 9-1-1 Commission	Roanoke County ECC
Other (please specify)				Use Fiber for Internet Services (why I selected this)	
Our agency uses COMLINC to connect with (Check all that apply):					
Conventional dispatch channel - Local county or agency system					Local county or agency system
Conventional dispatch channel - Outside county or agency system					Outside county or agency system
Conventional dispatch channel - Non-STARS Commonwealth system					
Conventional dispatch channel - Commonwealth STARS system					
Conventional dispatch channel - Other system					Other system
Conventional tactical/operations channel - Local county or agency system				Local county or agency system	Local county or agency system
Conventional tactical/operations channel - Outside county or agency system				Outside county or agency system	
Conventional tactical/operations channel - Non-STARS Commonwealth system					
Conventional tactical/operations channel - Commonwealth STARS system				Commonwealth STARS system	
Conventional tactical/operations channel - Other system					Other system
Conventional interoperability channel - Local county or agency system					Local county or agency system
Conventional interoperability channel - Outside county or agency system					Outside county or agency system
Conventional interoperability channel - Non-STARS Commonwealth system					
Conventional interoperability channel - Commonwealth STARS system					
Conventional interoperability channel - Other system					
Other conventional channel - Local county or agency system					Local county or agency system
Other conventional channel - Outside county or agency system					Outside county or agency system
Other conventional channel - Non-STARS Commonwealth system					
Other conventional channel - Commonwealth STARS system					

COMLINC EVALUATION

Agency Name (Req.):	Russell County	Richmond DEC	Smyth County	Eastern Shore of Virginia 9-1-1 Commission	Roanoke County ECC
Other conventional channel - Other system					
Trunked system dispatch talkgroup - Local county or agency system		Local county or agency system			Local county or agency system
Trunked system dispatch talkgroup - Outside county or agency system					Outside county or agency system
Trunked system dispatch talkgroup - Non-STARs Commonwealth system					
Trunked system dispatch talkgroup - Commonwealth STARs system					
Trunked system dispatch talkgroup - Other system					
Trunked system tactical/operations talkgorup - Local county or agency system		Local county or agency system			Local county or agency system
Trunked system tactical/operations talkgorup - Outside county or agency system					Outside county or agency system
Trunked system tactical/operations talkgorup - Non-STARs Commonwealth system					
Trunked system tactical/operations talkgorup - Commonwealth STARs system					
Trunked system tactical/operations talkgorup - Other system					
Trunked system interoperability talkgroup - Local county or agency system		Local county or agency system			Local county or agency system
Trunked system interoperability talkgroup - Outside county or agency system					Outside county or agency system
Trunked system interoperability talkgroup - Non-STARs Commonwealth system					
Trunked system interoperability talkgroup - Commonwealth STARs system					
Trunked system interoperability talkgroup - Other system					
Other talkgroup - Local county or agency system		Local county or agency system			Local county or agency system
Other talkgroup - Outside county or agency system					Outside county or agency system
Other talkgroup - Non-STARs Commonwealth system					
Other talkgroup - Commonwealth STARs system		Commonwealth STARs system			
Other talkgroup - Other system					Other system
Please rate the COMLINC system according to the following attributes:					
Is easy to use		Neither agree nor disagree		Neither agree nor disagree	Agree
Meets our interoperability needs		Neither agree nor disagree		Disagree	Neither agree nor disagree
Is reliable		Neither agree nor disagree		Disagree	Neither agree nor disagree

COMLINC EVALUATION

Agency Name (Req.):	Russell County	Richmond DEC	Smyth County	Eastern Shore of Virginia 9-1-1 Commission	Roanoke County ECC
Please add any comments you might have regarding the COMLINC rating.				reality is hardly ever used (if use more think could be easier to understand how to use) ---- Meets interoperability needs - Maybe it could better (that is why was installed), but really not used (I tested with VSP unit and fire unit one day and worked OK, but this was somewhat complex to even set-up) --- Is reliable - Perhaps could be, but our system seems to sometimes have	
What is the approximate age of the COMLINC equipment?					
Data communications equipment (router, modem) - Hardware		1 to 5 years		1 to 5 years	
Data communications equipment (router, modem) - Software/Firmware		Current version		Unknown	
COMLINC Interface cards - Hardware		1 to 5 years		1 to 5 years	
COMLINC Interface cards - Software/Firmware		Current version		Unknown	
COMLINC Server - Hardware		1 to 5 years		Less than 1 year	
COMLINC Server - Software/Firmware		Current version		Unknown	
PCs operating COMLINC - Hardware		1 to 5 years		1 to 5 years	
PCs operating COMLINC - Software/Firmware		Current version		Unknown	
What software version of COMLINC is currently installed?		I don't know.	I don't know.	I don't know.	I don't know.
How often is COMLINC used by your agency for incidents or pre-planned events?		rarely	Never	Never	rarely
How often is COMLINC used by your agency for exercises or drills?		Never	Never	Never	Unknown
Please identify the following issues or problems that you have had with COMLINC:					
Connection problems		Seldom		Sometimes	Seldom
Poor audio quality		Seldom		Seldom	Frequently
Voice latency issues (audio delay) impact operations		Seldom		Sometimes	Sometimes
System crashes or fails		Sometimes		Sometimes	Other
User did not know how to operate		Seldom		Frequently	Frequently
Other (please specify)				Perhaps I need to do a better job at training our staff (however just seems to not be used). Plus in the past, when tried ot work with another agency (to test), they were unsure how to use COMLINC	
Would you be willing to be interviewed by DHS/OEC staff at your site (approx. 2 hours)?					
Within the next 2 months (late summer)		No			No
2 to 4 months (early fall)		No		Yes	No

COMLINC EVALUATION

Agency Name (Req.):	Russell County	Richmond DEC	Smyth County	Eastern Shore of Virginia 9-1-1 Commission	Roanoke County ECC
I would like to decline an on-site interview		No			Yes
Other (please specify)				Would do my best to meet to help, however we are a small rural agency (wher	
Please rate the usefulness of the following features not currently supported by COMLINC:					
Ability to link streaming video sources to PC-based workstations		(3)		No Opinion	No Opinion
Ability to link streaming video sources to smartphone applications - Very Useful (4)		(3)		No Opinion	No Opinion
Ability to link a smartphone PTT application to existing radio systems - Very Useful (4)		(3)		(3)	No Opinion
Ability to link VoIP telephony systems - Very Useful (4)		(3)		No Opinion	No Opinion
Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.				The two reasons we requested grant funding for COMLINC a few years back was due to it being an expectation (to have COMLINC) from the state at some point and a tool to be used to interact with other PSAP's and promote interoperability (way to be able to communicate) between our local Fire/EMS/LE radio channels and the VSP or other outside agencies. Just has been used little since installing.	

COMLINC EVALUATION

Agency Name (Req.):	Roanoke County ECC	Patrick County Sheriff's Office	Winchester Emergency Communications	City Of Roanoke E911	Martinsville-Henry County 911 Center
Address	5925 COVE RD	PO Box 128	231 E Piccadilly St	215 Church Ave	3300 Kings Mountain Rd
Address 2		742 Commerce St			P.O. Box 7, Collinsville, VA 24078 (Mail)
City/Town	ROANOKE	Stuart	Winchester	Raonoke	Martinsville
Phone Number	540-562-3265	276-694-3161	540-662-4131	540-853-2411	276-632-7677
Name (Req.):	CRAIG SHEETS	Mickie Martin	Erin Malloy	Sonya Roman	JR Powell
Title:	COMM TRNG. OFC.	E911 Coordinator	Director of Emergency Communication	911 Manager	Director
Email Address (Req.):	csheets@roanokecountyva.gov	mmartin@sheriff.co.patrick.va.us	erin.malloy@winchesterva.gov	sonya.roman@roanokeva.gov	vpowell@co.henry.va.us
Phone Number:	540-562-3265	276-694-3161	540-545-4715	540-853-2945	276-632-7677
Is there somebody else in your agency that you believe would be better suited to participate in this study?	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study	Yes, please send this study to the person named on the next page. Thank you.	No, I am the best suited person for this study
Does your agency have or use COMLINC Interoperability equipment?	Yes	Yes	Yes		Yes
Please send this survey to the point of contact listed below for action.					
Name (Req.)				John Powers	
Agency				City of Roanoke E911	
Title				E911 Systems Coordinator	
Email Address (Req.)				john.powers@roanokeva.gov	
How long ago was the COMLINC unit installed?	More than 5 years	More than 5 years	Between 1 and 5 years		More than 5 years
What type of COMLINC equipment is used by your agency (check all that apply)?					
Fixed gateway installation	Fixed gateway installation		Fixed gateway installation		Fixed gateway installation
Mobile gateway installation					
Mobile phone application					
Unknown		Unknown			
Other (please specify)					RIOS
I am able to provide funding information on my agency's COMLINC installation.	No	No	Yes		Yes
Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.					
COMLINC (check all that apply)?					
Fiber optics					
Microwave link					
Cable provider			Cable provider		
DSL or other wire-based commercial internet provider					DSL or other wire-based commercial internet provider
MPLS or dedicated circuit					
Wireless data communications (4G/LTE)					
Unknown		Unknown			

COMLINC EVALUATION

Agency Name (Req.):	Roanoke County ECC	Patrick County Sheriff's Office	Winchester Emergency Communications	City Of Roanoke E911	Martinsville-Henry County 911 Center
Other (please specify)					
Our agency uses COMLINC to connect with (Check all that apply):					
Conventional dispatch channel - Local county or agency system					
Conventional dispatch channel - Outside county or agency system					Outside county or agency system
Conventional dispatch channel - Non-STARS Commonwealth system					
Conventional dispatch channel - Commonwealth STARS system					
Conventional dispatch channel - Other system					
Conventional tactical/operations channel - Local county or agency system					
Conventional tactical/operations channel - Outside county or agency system					
Conventional tactical/operations channel - Non-STARS Commonwealth system					
Conventional tactical/operations channel - Commonwealth STARS system					
Conventional tactical/operations channel - Other system					
Conventional interoperability channel - Local county or agency system					
Conventional interoperability channel - Outside county or agency system					Outside county or agency system
Conventional interoperability channel - Non-STARS Commonwealth system					
Conventional interoperability channel - Commonwealth STARS system					
Conventional interoperability channel - Other system					
Other conventional channel - Local county or agency system					
Other conventional channel - Outside county or agency system					
Other conventional channel - Non-STARS Commonwealth system					
Other conventional channel - Commonwealth STARS system					

COMLINC EVALUATION

Agency Name (Req.):	Roanoke County ECC	Patrick County Sheriff's Office	Winchester Emergency Communications	City Of Roanoke E911	Martinsville-Henry County 911 Center
Other conventional channel - Other system					
Trunked system dispatch talkgroup - Local county or agency system					
Trunked system dispatch talkgroup - Outside county or agency system					
Trunked system dispatch talkgroup - Non-STARS Commonwealth system					
Trunked system dispatch talkgroup - Commonwealth STARS system					
Trunked system dispatch talkgroup - Other system					
Trunked system tactical/operations talkgorup - Local county or agency system					
Trunked system tactical/operations talkgorup - Outside county or agency system					
Trunked system tactical/operations talkgorup - Non-STARS Commonwealth system					
Trunked system tactical/operations talkgorup - Commonwealth STARS system					
Trunked system tactical/operations talkgorup - Other system					
Trunked system interoperability talkgroup - Local county or agency system					
Trunked system interoperability talkgroup - Outside county or agency system			Outside county or agency system		
Trunked system interoperability talkgroup - Non-STARS Commonwealth system					
Trunked system interoperability talkgroup - Commonwealth STARS system					
Trunked system interoperability talkgroup - Other system					
Other talkgroup - Local county or agency system					
Other talkgroup - Outside county or agency system					
Other talkgroup - Non-STARS Commonwealth system					
Other talkgroup - Commonwealth STARS system					
Other talkgroup - Other system					
Please rate the COMLINC system according to the following attributes:					
Is easy to use		Disagree	Disagree		Neither agree nor disagree
Meets our interoperability needs		Disagree	Neither agree nor disagree		Disagree
Is reliable		Strongly disagree	Disagree		Neither agree nor disagree

COMLINC EVALUATION

Agency Name (Req.):	Roanoke County ECC	Patrick County Sheriff's Office	Winchester Emergency Communications	City Of Roanoke E911	Martinsville-Henry County 911 Center
Please add any comments you might have regarding the COMLINC rating.			Other surrounding agencies need to have theirs working in order for ours to be useful.		The RIOS system provides a source for agencies to talk to each other from office to office, but not true in the field interoperability.
What is the approximate age of the COMLINC equipment?					
Data communications equipment (router, modem) - Hardware					More than 10 years
Data communications equipment (router, modem) - Software/Firmware					Unknown
COMLINC Interface cards - Hardware					More than 10 years
COMLINC Interface cards - Software/Firmware					Unknown
COMLINC Server - Hardware					More than 10 years
COMLINC Server - Software/Firmware					Unknown
PCs operating COMLINC - Hardware					More than 10 years
PCs operating COMLINC - Software/Firmware					Unknown
What software version of COMLINC is currently installed?					
How often is COMLINC used by your agency for incidents or pre-planned events?		Never	Never		rarely
How often is COMLINC used by your agency for exercises or drills?		Never	Never		Daily
Please identify the following issues or problems that you have had with COMLINC:					
Connection problems		Other	Never		Seldom
Poor audio quality		Frequently	Never		Frequently
Voice latency issues (audio delay) impact operations		Frequently	Sometimes		Sometimes
System crashes or fails		Frequently	Seldom		Frequently
User did not know how to operate		Frequently	Sometimes		Seldom
Other (please specify)					
Would you be willing to be interviewed by DHS/OEC staff at your site (approx. 2 hours)?					
Within the next 2 months (late summer)			No		
2 to 4 months (early fall)			Yes		Yes

COMLINC EVALUATION

Agency Name (Req.):	Roanoke County ECC	Patrick County Sheriff's Office	Winchester Emergency Communications	City Of Roanoke E911	Martinsville-Henry County 911 Center
I would like to decline an on-site interview		Yes			
Other (please specify)	e COMLINC was just intalled a few years ago and has really hardly been used).				
Please rate the usefulness of the following features not currently supported by COMLINC:					
Ability to link streaming video sources to PC-based workstations		No Opinion	Not Needed (0)		(3)
Ability to link streaming video sources to smartphone applications - Very Useful (4)		No Opinion	Not Needed (0)		(2)
Ability to link a smartphone PTT application to existing radio systems - Very Useful (4)		No Opinion	Not Needed (0)		(3)
Ability to link VoIP telephony systems - Very Useful (4)		No Opinion	Not Needed (0)		(2)
Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.					

COMLINC EVALUATION

Agency Name (Req.):	Bedford Communications	Harrisonburg-Rockingham ECC	County of Roanoke	Mecklenburg Co. Emergency Communications	Loudoun County Sheriff's Office
Address	1345 Falling Creek Road	101 N Main St	5925 Cove Rd	P.O. Box 307	803 Sycolin Rd SE
Address 2		5th Flr	COMMIT	405 Madison Street	
City/Town	Bedford	Harrisonburg	Roanoke	Boydton	Leesburg
Phone Number	540-587-0731	540-434-2006	540-777-8556	1-434-738-0029	703-777-0407
Name (Req.):	Jeff Johnson	Jim Junkins	Rodney Thompson	Ben Duncan	Craig Schleiden
Title:	E-911 Manager	Director	Communications Coordinator	Director	Captain
Email Address (Req.):	j.johnson@bedfordcountyva.gov	jjunkins@hrecc.org	rthompson@roanokecountyva.gov	ben.duncan@mecklenburgva.com	craig.schleiden@loudoun.gov
Phone Number:		540-434-2006	540-777-8556	1-434-738-6191 ext. 4369	571-258-3747
Is there somebody else in your agency that you believe would be better suited to participate in this study?	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study
Does your agency have or use COMLINC Interoperability equipment?	Yes	Yes	Yes	Yes	Yes
Please send this survey to the point of contact listed below for action.					
Name (Req.)					
Agency					
Title					
Email Address (Req.)					
How long ago was the COMLINC unit installed?	More than 5 years	Between 1 and 5 years	More than 5 years	More than 5 years	Between 1 and 5 years
What type of COMLINC equipment is used by your agency (check all that apply)?					
Fixed gateway installation	Fixed gateway installation	Fixed gateway installation	Fixed gateway installation	Fixed gateway installation	Fixed gateway installation
Mobile gateway installation					Mobile gateway installation
Mobile phone application					Mobile phone application
Unknown					
Other (please specify)					
I am able to provide funding information on my agency's COMLINC installation.	Yes	Yes	No	No	Yes
Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.		0	39		
COMLINC (check all that apply)?					
Fiber optics			Fiber optics		
Microwave link					
Cable provider		Cable provider			
DSL or other wire-based commercial internet provider					
MPLS or dedicated circuit					
Wireless data communications (4G/LTE)					
Unknown	Unknown				

COMLINC EVALUATION

Agency Name (Req.):	Bedford Communications	Harrisonburg-Rockingham ECC	County of Roanoke	Mecklenburg Co. Emergency Communications	Loudoun County Sheriff's Office
Other (please specify)	We are part of a Regional radio system and our comlinc equipment with the exception of pc's are located at Lynchburg Department of Emergency services. They should be able to provide more information. We connect through a VPN through a cable modem		Roanoke County's Broadband connection		
Our agency uses COMLINC to connect with (Check all that apply):					
Conventional dispatch channel - Local county or agency system			Local county or agency system		
Conventional dispatch channel - Outside county or agency system	Outside county or agency system		Outside county or agency system	Outside county or agency system	
Conventional dispatch channel - Non-STARs Commonwealth system	Non-STARs Commonwealth system				
Conventional dispatch channel - Commonwealth STARs system	Commonwealth STARs system	Commonwealth STARs system	Commonwealth STARs system		
Conventional dispatch channel - Other system					
Conventional tactical/operations channel - Local county or agency system			Local county or agency system		
Conventional tactical/operations channel - Outside county or agency system			Outside county or agency system		
Conventional tactical/operations channel - Non-STARs Commonwealth system					
Conventional tactical/operations channel - Commonwealth STARs system		Commonwealth STARs system	Commonwealth STARs system		
Conventional tactical/operations channel - Other system					
Conventional interoperability channel - Local county or agency system			Local county or agency system		
Conventional interoperability channel - Outside county or agency system			Outside county or agency system	Outside county or agency system	
Conventional interoperability channel - Non-STARs Commonwealth system					
Conventional interoperability channel - Commonwealth STARs system		Commonwealth STARs system	Commonwealth STARs system		
Conventional interoperability channel - Other system					
Other conventional channel - Local county or agency system			Local county or agency system		
Other conventional channel - Outside county or agency system			Outside county or agency system		
Other conventional channel - Non-STARs Commonwealth system					
Other conventional channel - Commonwealth STARs system			Commonwealth STARs system		

COMLINC EVALUATION

Agency Name (Req.):	Bedford Communications	Harrisonburg-Rockingham ECC	County of Roanoke	Mecklenburg Co. Emergency Communications	Loudoun County Sheriff's Office
Other conventional channel - Other system					
Trunked system dispatch talkgroup - Local county or agency system			Local county or agency system		
Trunked system dispatch talkgroup - Outside county or agency system	Outside county or agency system		Outside county or agency system		
Trunked system dispatch talkgroup - Non-STARS Commonwealth system	Non-STARS Commonwealth system		Non-STARS Commonwealth system		
Trunked system dispatch talkgroup - Commonwealth STARS system	Commonwealth STARS system	Commonwealth STARS system	Commonwealth STARS system		
Trunked system dispatch talkgroup - Other system					
Trunked system tactical/operations talkgorup - Local county or agency system			Local county or agency system		
Trunked system tactical/operations talkgorup - Outside county or agency system			Outside county or agency system		
Trunked system tactical/operations talkgorup - Non-STARS Commonwealth system			Non-STARS Commonwealth system		
Trunked system tactical/operations talkgorup - Commonwealth STARS system		Commonwealth STARS system	Commonwealth STARS system		
Trunked system tactical/operations talkgorup - Other system					
Trunked system interoperability talkgroup - Local county or agency system			Local county or agency system		
Trunked system interoperability talkgroup - Outside county or agency system			Outside county or agency system		
Trunked system interoperability talkgroup - Non-STARS Commonwealth system			Non-STARS Commonwealth system		
Trunked system interoperability talkgroup - Commonwealth STARS system		Commonwealth STARS system	Commonwealth STARS system		
Trunked system interoperability talkgroup - Other system					
Other talkgroup - Local county or agency system			Local county or agency system		
Other talkgroup - Outside county or agency system			Outside county or agency system		
Other talkgroup - Non-STARS Commonwealth system			Non-STARS Commonwealth system		
Other talkgroup - Commonwealth STARS system			Commonwealth STARS system		
Other talkgroup - Other system					
Please rate the COMLINC system according to the following attributes:					
Is easy to use	Agree	Agree	Strongly agree	Neither agree nor disagree	
Meets our interoperability needs	Disagree	Agree	Agree	Neither agree nor disagree	
Is reliable	Neither agree nor disagree	Agree	Agree	Neither agree nor disagree	

COMLINC EVALUATION

Agency Name (Req.):	Bedford Communications	Harrisonburg-Rockingham ECC	County of Roanoke	Mecklenburg Co. Emergency Communications	Loudoun County Sheriff's Office
Please add any comments you might have regarding the COMLINC rating.	surrounding jurisdictions. We operate a P25 Trunked Regional Radio system which includes Bedford County, Amherst Count and the city of Lynchburg. We have used it successfully but one of the problems is some of the surrounding areas have limited radio resources and are not able to always utilize the system. We have used it to successfully patch to			We have utilized system only one time since I became Director 3 years ago. We need additional training on how the system can be utilized.	
What is the approximate age of the COMLINC equipment?					
Data communications equipment (router, modem) - Hardware	Unknown	Less than 1 year	More than 10 years	5 to 10 years	
Data communications equipment (router, modem) - Software/Firmware		Current version	2 or more versions old		
COMLINC Interface cards - Hardware	Unknown	Less than 1 year	More than 10 years	5 to 10 years	
COMLINC Interface cards - Software/Firmware		Current version	2 or more versions old		
COMLINC Server - Hardware	Unknown	Less than 1 year	More than 10 years	5 to 10 years	
COMLINC Server - Software/Firmware		Current version	Never updated		
PCs operating COMLINC - Hardware	5 to 10 years	1 to 5 years	More than 10 years	5 to 10 years	
PCs operating COMLINC - Software/Firmware	Never updated	Current version	Never updated		
What software version of COMLINC is currently installed?	I don't know.	3.44 or newer		3.0 to 3.3	
How often is COMLINC used by your agency for incidents or pre-planned events?	rarely	Monthly	Yearly	rarely	
How often is COMLINC used by your agency for exercises or drills?	rarely	Yearly	Yearly	Never	
Please identify the following issues or problems that you have had with COMLINC:					
Connection problems	Seldom	Sometimes	Sometimes	Never	
Poor audio quality	Seldom	Never	Sometimes	Never	
Voice latency issues (audio delay) impact operations	Seldom	Never	Sometimes		
System crashes or fails	Frequently	Seldom	Seldom		
User did not know how to operate	Frequently	Never	Sometimes	Frequently	
Other (please specify)	All of our PC's no longer work so we are unable to use the system unless someone at the other jurisdiction sets up the patch and then we can patch to our trunked system. we attempted to install the software on our dispatch pc's similar to what another jurisdiction did but VPS said they would not support or help us set it up				
Would you be willing to be interviewed by DHS/OEC staff at your site (approx. 2 hours)?			No		
Within the next 2 months (late summer)					
2 to 4 months (early fall)		Yes	Yes	Yes	

COMLINC EVALUATION

Agency Name (Req.):	Bedford Communications	Harrisonburg-Rockingham ECC	County of Roanoke	Mecklenburg Co. Emergency Communications	Loudoun County Sheriff's Office
I would like to decline an on-site interview					
Other (please specify)	possibly at a later time. Extremely short staffed and do not have the time currently				
Please rate the usefulness of the following features not currently supported by COMLINC:					
Ability to link streaming video sources to PC-based workstations	(2)	(1)	(3)	No Opinion	
Ability to link streaming video sources to smartphone applications - Very Useful (4)	(2)	(3)	(3)	No Opinion	
Ability to link a smartphone PTT application to existing radio systems - Very Useful (4)	Not Needed (0)	(2)	Very Useful (4)	No Opinion	
Ability to link VoIP telephony systems - Very Useful (4)	Not Needed (0)	Not Needed (0)	Very Useful (4)	No Opinion	
Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.				Only used once in the last 3 years. Maybe lots of ways to utilize but we aren't familiar with them.	

COMLINC EVALUATION

Agency Name (Req.):	Virginia State Police, Fairfax	Farmville Emergency Communications	Department of Emergency Communications	Campbell County Public Safety	King and Queen County
Address	4977 Alliance Drive	116 North Main st	3600 Wheeler Avenue	34 Communications Ln	242 Allen's Circle
Address 2					
City/Town	Fairfax, Va	Farmville	Alexandria	Rustburg	King and Queen CH
Phone Number	703-803-0026	434-392-3332	703-746-1863	434-332-9872	804-785-5975
Name (Req.):	Lucy Rowe	Jackie Gilbert	Eric Parker	Jonaaron Evans	Greg Hunter
Title:	CAD Tech	Director	Radio System Manager	Communications Technician	Radio system manager
Email Address (Req.):	lucy.rowe@vsp.virginia.gov	jgilbert@farmvilleva.com	eric.parker@alexandriava.gov	jmevans@co.campbell.va.us	ghunter@kingandqueenco.net
Phone Number:	7038030087	434-392-3332	703-746-1863	434-332-9872	804-785-5975
Is there somebody else in your agency that you believe would be better suited to participate in this study?	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study	No, I am the best suited person for this study
Does your agency have or use COMLINC Interoperability equipment?	Yes	Yes	Yes	Yes	Yes
Please send this survey to the point of contact listed below for action.					
Name (Req.)					
Agency					
Title					
Email Address (Req.)					
How long ago was the COMLINC unit installed?	More than 5 years	More than 5 years	Between 1 and 5 years	More than 5 years	More than 5 years
What type of COMLINC equipment is used by your agency (check all that apply)?					
Fixed gateway installation	Fixed gateway installation	Fixed gateway installation	Fixed gateway installation	Fixed gateway installation	Fixed gateway installation
Mobile gateway installation	Mobile gateway installation				
Mobile phone application					
Unknown					
Other (please specify)					
I am able to provide funding information on my agency's COMLINC installation.	No	No	Yes	No	No
Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.				20	
COMLINC (check all that apply)?					
Fiber optics					
Microwave link					
Cable provider			Cable provider		
DSL or other wire-based commercial internet provider		DSL or other wire-based commercial internet provider		DSL or other wire-based commercial internet provider	
MPLS or dedicated circuit					
Wireless data communications (4G/LTE)					
Unknown	Unknown				

COMLINC EVALUATION

Agency Name (Req.):	Virginia State Police, Fairfax	Farmville Emergency Communications	Department of Emergency Communications	Campbell County Public Safety	King and Queen County
Other (please specify)					This has been a long term issue. Currently not connected. Access to county broadband internet backhaul is available
Our agency uses COMLINC to connect with (Check all that apply):					
Conventional dispatch channel - Local county or agency system					
Conventional dispatch channel - Outside county or agency system				Outside county or agency system	
Conventional dispatch channel - Non-STARS Commonwealth system					
Conventional dispatch channel - Commonwealth STARS system	Commonwealth STARS system				
Conventional dispatch channel - Other system					
Conventional tactical/operations channel - Local county or agency system					
Conventional tactical/operations channel - Outside county or agency system	Outside county or agency system				
Conventional tactical/operations channel - Non-STARS Commonwealth system	Non-STARS Commonwealth system				
Conventional tactical/operations channel - Commonwealth STARS system	Commonwealth STARS system				
Conventional tactical/operations channel - Other system					
Conventional interoperability channel - Local county or agency system					
Conventional interoperability channel - Outside county or agency system					
Conventional interoperability channel - Non-STARS Commonwealth system					
Conventional interoperability channel - Commonwealth STARS system	Commonwealth STARS system				
Conventional interoperability channel - Other system					
Other conventional channel - Local county or agency system					
Other conventional channel - Outside county or agency system					
Other conventional channel - Non-STARS Commonwealth system					
Other conventional channel - Commonwealth STARS system					

COMLINC EVALUATION

Agency Name (Req.):	Virginia State Police, Fairfax	Farmville Emergency Communications	Department of Emergency Communications	Campbell County Public Safety	King and Queen County
Other conventional channel - Other system					
Trunked system dispatch talkgroup - Local county or agency system					
Trunked system dispatch talkgroup - Outside county or agency system					
Trunked system dispatch talkgroup - Non-STARS Commonwealth system					
Trunked system dispatch talkgroup - Commonwealth STARS system					
Trunked system dispatch talkgroup - Other system					
Trunked system tactical/operations talkgorup - Local county or agency system					
Trunked system tactical/operations talkgorup - Outside county or agency system					
Trunked system tactical/operations talkgorup - Non-STARS Commonwealth system					
Trunked system tactical/operations talkgorup - Commonwealth STARS system					
Trunked system tactical/operations talkgorup - Other system					
Trunked system interoperability talkgroup - Local county or agency system					
Trunked system interoperability talkgroup - Outside county or agency system				Outside county or agency system	
Trunked system interoperability talkgroup - Non-STARS Commonwealth system					
Trunked system interoperability talkgroup - Commonwealth STARS system					
Trunked system interoperability talkgroup - Other system					
Other talkgroup - Local county or agency system					
Other talkgroup - Outside county or agency system					
Other talkgroup - Non-STARS Commonwealth system					
Other talkgroup - Commonwealth STARS system					
Other talkgroup - Other system					
Please rate the COMLINC system according to the following attributes:					
Is easy to use	Strongly agree	Agree	Disagree	Agree	Disagree
Meets our interoperability needs	Strongly agree	Agree	Neither agree nor disagree	Strongly disagree	Disagree
Is reliable	Strongly agree	Neither agree nor disagree	Agree	Disagree	Disagree

COMLINC EVALUATION

Agency Name (Req.):	Virginia State Police, Fairfax	Farmville Emergency Communications	Department of Emergency Communications	Campbell County Public Safety	King and Queen County
Please add any comments you might have regarding the COMLINC rating.			We maintain it, but don't use it on any regular basis and have never used it operationally. In this area we typically utilize phone calls or PMARS to talk PSAP to PSAP.	RIOS is easy to use, however the audio levels between our conventional system, and our neighboring jurisdictions P25 trunked system has never been sustainable using COMLINC.	old radio system and never implemented. It was transitioned in 2014-15 to our conventional system and installation was never completed. We had planned to integrate to our new P25 Trunked system but have a better solution to interface control stations to our new trunked system gateway. Internet thruput in a small rural locality is an issue in multiple
What is the approximate age of the COMLINC equipment?					
Data communications equipment (router, modem) - Hardware	Unknown	1 to 5 years	1 to 5 years	More than 10 years	More than 10 years
Data communications equipment (router, modem) - Software/Firmware	Unknown		Unknown	Unknown	2 or more versions old
COMLINC Interface cards - Hardware	Unknown	5 to 10 years	1 to 5 years	More than 10 years	More than 10 years
COMLINC Interface cards - Software/Firmware	Unknown		Unknown	Unknown	2 or more versions old
COMLINC Server - Hardware	Unknown	5 to 10 years	1 to 5 years	More than 10 years	More than 10 years
COMLINC Server - Software/Firmware	Unknown		Unknown	Unknown	2 or more versions old
PCs operating COMLINC - Hardware	Unknown	5 to 10 years	1 to 5 years	5 to 10 years	More than 10 years
PCs operating COMLINC - Software/Firmware	Unknown		Current version	Unknown	2 or more versions old
What software version of COMLINC is currently installed?	3.30 to 3.43	3.0 to 3.3	3.30 to 3.43	3.0 to 3.3	I don't know.
How often is COMLINC used by your agency for incidents or pre-planned events?	Monthly	rarely	Never	Never	Never
How often is COMLINC used by your agency for exercises or drills?	rarely	rarely	Never	Never	Never
Please identify the following issues or problems that you have had with COMLINC:					
Connection problems	Never	Frequently	Never	Sometimes	Frequently
Poor audio quality	Never	Sometimes	Never	Frequently	Sometimes
Voice latency issues (audio delay) impact operations	Never	Sometimes	Never	Frequently	Frequently
System crashes or fails	Never	Sometimes	Seldom	Never	Sometimes
User did not know how to operate	Sometimes	Sometimes	Seldom	Seldom	Frequently
Other (please specify)			One PC failed and was repaired and returned. One of the servers is out being repaired now.		
Would you be willing to be interviewed by DHS/OEC staff at your site (approx. 2 hours)?					
Within the next 2 months (late summer)	No		Yes	Yes	Yes
2 to 4 months (early fall)	Yes	Yes	Yes	Yes	Yes

COMLINC EVALUATION

Agency Name (Req.):	Virginia State Police, Fairfax	Farmville Emergency Communications	Department of Emergency Communications	Campbell County Public Safety	King and Queen County
I would like to decline an on-site interview	No				
Other (please specify)					
Please rate the usefulness of the following features not currently supported by COMLINC:					
Ability to link streaming video sources to PC-based workstations	Not Needed (0)	Very Useful (4)	Not Needed (0)	(1)	(1)
Ability to link streaming video sources to smartphone applications - Very Useful (4)	Not Needed (0)	Very Useful (4)	Not Needed (0)	(1)	(1)
Ability to link a smartphone PTT application to existing radio systems - Very Useful (4)	(3)	Very Useful (4)	Not Needed (0)	Very Useful (4)	Not Needed (0)
Ability to link VoIP telephony systems - Very Useful (4)	No Opinion	Very Useful (4)	Not Needed (0)	(3)	(1)
Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.	It has been very useful		It's a nice tool in the toolbox but we just haven't found a need for it. It reminds me of our old ACU-1000/MIRS system which we used occasionally for planned events or communications emergencies but never for an urgent incident.		

COMLINC EVALUATION

Agency Name (Req.):	Halifax County E-911 Center	Augusta County ECC
Address	1040 Mary Bethune Street	18 Government Center Lane
Address 2	P O BOX 699	
City/Town	Halifax	Verona
Phone Number	434-476-3334	540-245-5501
Name (Req.):	Wendy Jones	Donna Good
Title:	E-911 Director	Director
Email Address (Req.):	hce911@co.halifax.va.us	dgood@co.augusta.va.us
Phone Number:	434-476-1784	540-245-5503
Is there somebody else in your agency that you believe would be better suited to participate in this study?	No, I am the best suited person for this study	No, I am the best suited person for this study
Does your agency have or use COMLINC Interoperability equipment?	Yes	Yes
Please send this survey to the point of contact listed below for action.		
Name (Req.)		
Agency		
Title		
Email Address (Req.)		
How long ago was the COMLINC unit installed?	More than 5 years	More than 5 years
What type of COMLINC equipment is used by your agency (check all that apply)?		
Fixed gateway installation		Fixed gateway installation
Mobile gateway installation		Mobile gateway installation
Mobile phone application		
Unknown	Unknown	
Other (please specify)		
I am able to provide funding information on my agency's COMLINC installation.	No	Yes
Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.		
COMLINC (check all that apply)?		
Fiber optics		
Microwave link		
Cable provider		
DSL or other wire-based commercial internet provider		
MPLS or dedicated circuit		
Wireless data communications (4G/LTE)		
Unknown	Unknown	

COMLINC EVALUATION

Agency Name (Req.):	Halifax County E-911 Center	Augusta County ECC
Other (please specify)		
Our agency uses COMLINC to connect with (Check all that apply):		
Conventional dispatch channel - Local county or agency system		
Conventional dispatch channel - Outside county or agency system		
Conventional dispatch channel - Non-STARS Commonwealth system		
Conventional dispatch channel - Commonwealth STARS system		
Conventional dispatch channel - Other system		
Conventional tactical/operations channel - Local county or agency system		
Conventional tactical/operations channel - Outside county or agency system		
Conventional tactical/operations channel - Non-STARS Commonwealth system		
Conventional tactical/operations channel - Commonwealth STARS system		
Conventional tactical/operations channel - Other system		
Conventional interoperability channel - Local county or agency system		
Conventional interoperability channel - Outside county or agency system		
Conventional interoperability channel - Non-STARS Commonwealth system		
Conventional interoperability channel - Commonwealth STARS system		
Conventional interoperability channel - Other system		
Other conventional channel - Local county or agency system		
Other conventional channel - Outside county or agency system		
Other conventional channel - Non-STARS Commonwealth system		
Other conventional channel - Commonwealth STARS system		

COMLINC EVALUATION

Agency Name (Req.):	Halifax County E-911 Center	Augusta County ECC
Other conventional channel - Other system		
Trunked system dispatch talkgroup - Local county or agency system		
Trunked system dispatch talkgroup - Outside county or agency system		
Trunked system dispatch talkgroup - Non-STARS Commonwealth system		
Trunked system dispatch talkgroup - Commonwealth STARS system		
Trunked system dispatch talkgroup - Other system		
Trunked system tactical/operations talkgorup - Local county or agency system		
Trunked system tactical/operations talkgorup - Outside county or agency system		
Trunked system tactical/operations talkgorup - Non-STARS Commonwealth system		
Trunked system tactical/operations talkgorup - Commonwealth STARS system		
Trunked system tactical/operations talkgorup - Other system		
Trunked system interoperability talkgroup - Local county or agency system		
Trunked system interoperability talkgroup - Outside county or agency system		
Trunked system interoperability talkgroup - Non-STARS Commonwealth system		
Trunked system interoperability talkgroup - Commonwealth STARS system		
Trunked system interoperability talkgroup - Other system		
Other talkgroup - Local county or agency system		
Other talkgroup - Outside county or agency system		
Other talkgroup - Non-STARS Commonwealth system		
Other talkgroup - Commonwealth STARS system		
Other talkgroup - Other system		
Please rate the COMLINC system according to the following attributes:		
Is easy to use		
Meets our interoperability needs		
Is reliable		

COMLINC EVALUATION

Agency Name (Req.):	Halifax County E-911 Center	Augusta County ECC
Please add any comments you might have regarding the COMLINC rating.		
What is the approximate age of the COMLINC equipment?		
Data communications equipment (router, modem) - Hardware		
Data communications equipment (router, modem) - Software/Firmware		
COMLINC Interface cards - Hardware		
COMLINC Interface cards - Software/Firmware		
COMLINC Server - Hardware		
COMLINC Server - Software/Firmware		
PCs operating COMLINC - Hardware		
PCs operating COMLINC - Software/Firmware		
What software version of COMLINC is currently installed?		
How often is COMLINC used by your agency for incidents or pre-planned events?		
How often is COMLINC used by your agency for exercises or drills?		
Please identify the following issues or problems that you have had with COMLINC:		
Connection problems		
Poor audio quality		
Voice latency issues (audio delay) impact operations		
System crashes or fails		
User did not know how to operate		
Other (please specify)		
Would you be willing to be interviewed by DHS/OEC staff at your site (approx. 2 hours)?		
Within the next 2 months (late summer)		
2 to 4 months (early fall)		

COMLINC EVALUATION

Agency Name (Req.):	Halifax County E-911 Center	Augusta County ECC
I would like to decline an on-site interview		
Other (please specify)		
Please rate the usefulness of the following features not currently supported by COMLINC:		
Ability to link streaming video sources to PC-based workstations		
Ability to link streaming video sources to smartphone applications - Very Useful (4)		
Ability to link a smartphone PTT application to existing radio systems - Very Useful (4)		
Ability to link VoIP telephony systems - Very Useful (4)		
Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.		

APPENDIX D

CSMS Revised Survey Form



Commonwealth of Virginia - COMLINC User Study
Follow up Survey

Purpose:

The purpose of this user study is to identify the current state and usability of the Virginia COMLINC interoperable communications system. Agencies that have COMLINC equipment installed are asked to complete the user study in order to help the Commonwealth develop and maintain effective solutions to interoperable communications barriers.

In Virginia, COMLINC leverages VoIP technology that allows disparate radio systems in Virginia to communicate with each other during a critical incident. The objective of COMLINC is to allow all VoIP solutions to connect to STARS and various localities within regions to increase interoperable communications while within the Commonwealth's footprint. COMLINC allows dispatchers at the counties and cities to establish multiple patches to connect agencies within the jurisdiction or to other localities.

NOTE: This study includes questions that address some technical specifications for COMLINC equipment as well as budgetary and cost information. Completion of the user study will be easier if that information is available to you when you begin the study.

1. Agency Information

Agency Name (Req.):

Address

Address 2

City/Town

Phone Number

2. Contact information

Name (Req.):

Title:

Email Address (Req.):

Phone Number:

3. Does your agency have COMLINC Interoperability equipment?

- Yes
- No
- I don't know

4. Does your agency use COMLINC Interoperability equipment?

- Yes
- No
- I don't know

5. Does your agency have an Internet Connection currently?

- Yes
- No
- I don't know

6. How long ago was the COMLINC unit installed?

7. What type of COMLINC equipment is used by your agency (check all that apply)?

- Fixed gateway installation
- Mobile gateway installation
- Mobile phone application
- Unknown
- Other (please specify) _____

8. Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.

Local Funding

State Funding

9. What type of data connection is used for COMLINC (check all that apply)?

|

- Fiber optics
- Microwave link
- Cable provider
- DSL or other wire-based commercial internet provider
- MPLS or dedicated circuit
- Wireless data communications (4G/LTE)
- Unknown
- Other (please specify) _____

COMLINC EVALUATION

10. Our agency uses COMLINC to connect with (Check all that apply):

	Local county or agency system	Outside county or agency system	Non-STARS Commonwealth system	Commonwealth STARS system	Other system
Conventional dispatch channel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conventional tactical/operations channel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conventional interoperability channel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other conventional channel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trunked system dispatch talkgroup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trunked system tactical/operations talkgroup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Trunked system interoperability talkgroup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other talkgroup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. Please rate the COMLINC system according to the following attributes:

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Is easy to use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Meets our interoperability needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Is reliable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. What is the approximate age of the COMLINC equipment?

	Hardware	Software/Firmware
Data communications equipment (router, modem)	<input type="text"/>	<input type="text"/>
COMLINC Interface cards	<input type="text"/>	<input type="text"/>
COMLINC Server	<input type="text"/>	<input type="text"/>
PCs operating COMLINC	<input type="text"/>	<input type="text"/>

13. What software version of COMLINC is currently installed?

COMLINC EVALUATION

14. How often is COMLINC used in your agency?

	For incidents/calls	For exercises/drills
Daily	<input type="radio"/>	<input type="radio"/>
Weekly	<input type="radio"/>	<input type="radio"/>
Monthly	<input type="radio"/>	<input type="radio"/>
Yearly	<input type="radio"/>	<input type="radio"/>
Rarely	<input type="radio"/>	<input type="radio"/>
Never	<input type="radio"/>	<input type="radio"/>
I don't know	<input type="radio"/>	<input type="radio"/>

15. Please add any comments you might have regarding the COMLINC rating.

16. Please identify the following issues or problems that you have had with COMLINC:

	Frequently	Sometimes	Seldom	Never	Other
Connection problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Poor audio quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Voice latency issues (audio delay) impact operations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
System crashes or fails	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
User did not know how to operate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)



Commonwealth of Virginia - COMLINC User Study

17. Please rate the usefulness of the following features not currently supported by COMLINC:

	Very Useful (4)	(3)	(2)	(1)	Not Needed (0)	No Opinion
Ability to link streaming video sources to PC-based workstations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to link streaming video sources to smartphone applications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to link a smartphone PTT application to existing radio systems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ability to link VoIP telephony systems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.

Thank you for your interest in interoperable communications!

APPENDIX E

CSMS Survey Responses

COMLINC EVALUATION

Agency Name (Req.):	Mathews County Sheriff's Office	Lancaster County	Richmond County Sheriff's Office	Northumberland Sheriff's Office	Twin County 911 Regional Committee
Address	P.O. Box 190		106 Wallace St.	195 Judicial Place	352 N Main St
Address 2					
City/Town	Mathews		Warsaw	Heathsville	Galax
Phone Number	804-725-2174	804-462-5129	804-333-3611	804-580-5221	276-236-8101
Name (Req.):	Christian Foster	Glenn Rowe	Chris Jett	Robert Headley/ Jennifer Packett	Jolena Young
Title:	Communications Supervisor		Technology Director	IT Administrator	911 Coordinator
Email Address (Req.):	cfoster@mathewscounty.va.gov	growe@lancova.com	cjett@co.richmond.va.us	rheadley@co.northumberland.va.us	jyoung@galaxva.com
Phone Number:	804-725-2174	804-462-5129	803-333-1100	804-580-9261/ 804-580-5221	276-236-5112
Does your agency have or use COMLINC Interoperability equipment?	No	No	Yes	No	Yes
How long ago was the COMLINC unit installed?	I don't know.	I don't know.	I don't know.	I don't know.	Between 1 and 5 years
What type of COMLINC equipment is used by your agency (check all that apply)?					
Fixed gateway installation					
Mobile gateway installation					Mobile gateway installation
Mobile phone application					
Unknown	Unknown	Unknown	Unknown	Unknown	
Other (please specify)					
I am able to provide funding information on my agency's COMLINC installation.	No	No	Yes	No	Yes
Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.			100% state		100% State
What type of data connection is used for COMLINC (check all that apply)?					
Fiber optics					
Microwave link					
Cable provider			Cable provider		Cable provider
DSL or other wire-based commercial internet provider					
MPLS or dedicated circuit					
Wireless data communications (4G/LTE)					
Unknown	Unknown	Unknown		Unknown	
Other (please specify)					
Our agency uses COMLINC to connect with (Check all that apply):					
Conventional dispatch channel - Local county or agency system					
Conventional dispatch channel - Outside county or agency system					
Conventional dispatch channel - Non-STARS Commonwealth system					

COMLINC EVALUATION

Agency Name (Req.):	Mathews County Sheriff's Office	Lancaster County	Richmond County Sheriff's Office	Northumberland Sheriff's Office	Twin County 911 Regional Committee
Conventional dispatch channel - Commonwealth STARS system					
Conventional dispatch channel - Other system					
Conventional tactical/operations channel - Local county or agency system					
Conventional tactical/operations channel - Outside county or agency system					
Conventional tactical/operations channel - Non-STARS Commonwealth system					
Conventional tactical/operations channel - Commonwealth STARS system					
Conventional tactical/operations channel - Other system					
Conventional interoperability channel - Local county or agency system					
Conventional interoperability channel - Outside county or agency system					
Conventional interoperability channel - Non-STARS Commonwealth system					
Conventional interoperability channel - Commonwealth STARS system					
Conventional interoperability channel - Other system					
Other conventional channel - Local county or agency system					
Other conventional channel - Outside county or agency system					
Other conventional channel - Non-STARS Commonwealth system					
Other conventional channel - Commonwealth STARS system					
Other conventional channel - Other system					
Trunked system dispatch talkgroup - Local county or agency system					
Trunked system dispatch talkgroup - Outside county or agency system					
Trunked system dispatch talkgroup - Non-STARS Commonwealth system					
Trunked system dispatch talkgroup - Commonwealth STARS system					
Trunked system dispatch talkgroup - Other system					
Trunked system tactical/operations talkgorup - Local county or agency system					

COMLINC EVALUATION

Agency Name (Req.):	Mathews County Sheriff's Office	Lancaster County	Richmond County Sheriff's Office	Northumberland Sheriff's Office	Twin County 911 Regional Committee
Trunked system tactical/operations talkgroup - Outside county or agency system					
Trunked system tactical/operations talkgroup - Non-STARS Commonwealth system					
Trunked system tactical/operations talkgroup - Commonwealth STARS system					
Trunked system tactical/operations talkgroup - Other system					
Trunked system interoperability talkgroup - Local county or agency system					
Trunked system interoperability talkgroup - Outside county or agency system					
Trunked system interoperability talkgroup - Non-STARS Commonwealth system					
Trunked system interoperability talkgroup - Commonwealth STARS system					
Trunked system interoperability talkgroup - Other system					
Other talkgroup - Local county or agency system					
Other talkgroup - Outside county or agency system					
Other talkgroup - Non-STARS Commonwealth system					
Other talkgroup - Commonwealth STARS system					
Other talkgroup - Other system					
Please rate the COMLINC system according to the following attributes:					
Is easy to use					Neither agree nor disagree
Meets our interoperability needs					Strongly disagree
Is reliable					Disagree
Please add any comments you might have regarding the COMLINC rating.					
What is the approximate age of the COMLINC equipment?					
Data communications equipment (router, modem) - Hardware	Unknown	Unknown	Unknown	Unknown	1 to 5 years
COMLINC Interface cards - Hardware	Unknown	Unknown	Unknown	Unknown	1 to 5 years
COMLINC Server - Hardware	Unknown	Unknown	Unknown	Unknown	1 to 5 years
PCs operating COMLINC - Hardware	Unknown	Unknown	Unknown	Unknown	1 to 5 years

COMLINC EVALUATION

Agency Name (Req.):	Mathews County Sheriff's Office	Lancaster County	Richmond County Sheriff's Office	Northumberland Sheriff's Office	Twin County 911 Regional Committee
What software version of COMLINC is currently installed?	I don't know.	I don't know.	I don't know.	I don't know.	I don't know.
How often is COMLINC used by your agency for incidents or pre-planned events?	Never	Never	Never	Never	Never
How often is COMLINC used by your agency for exercises or drills?	Never	Never	Never	Never	Yearly
Please identify the following issues or problems that you have had with COMLINC:					
Connection problems					Never
Poor audio quality					Sometimes
Voice latency issues (audio delay) impact operations					Frequently
System crashes or fails					Frequently
User did not know how to operate					Frequently
Other (please specify)					
Please rate the usefulness of the following features not currently supported by COMLINC:					
Ability to link streaming video sources to PC-based workstations		No Opinion	No Opinion	No Opinion	3
Ability to link streaming video sources to smartphones	No Opinion	No Opinion	No Opinion	No Opinion	3
Ability to link a smartphone PTT application to existing dispatch systems	No Opinion	No Opinion	No Opinion	No Opinion	4
Ability to link VoIP telephony systems - Very Useful	No Opinion	No Opinion	No Opinion	No Opinion	4
Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.	None	None	System was never used and therefore was disconnected, equipment is still onsite.	None	Need a solution that works. We believe SIRS should be updated for this.

COMLINC EVALUATION

Agency Name (Req.):	Wythe County Emergency Communications Center	Lunenburg County Sheriff's Office	Madison County 911	Frederick County Safety Commission	Powhatan
Address	304 S. 6th St.	160 Courthouse Sq.	115 Church St	1080 Coverstone Dr.	3880 Old Buckingham Rd.
Address 2					
City/Town	Wytheville	Lunenburg	Madison	Winchester	Powhatan
Phone Number	267-223-4533	434-696-4452	540-848-5161	540-665-6356	804-598-5656
Name (Req.):	Darlene Lang	Donald Penland	Brian Gordon	LeeAnna Pyles	Thomas P. Nolan
Title:	Director	Major	Director of Emergency Communications	Director	Director
Email Address (Req.):	dmlang@wytheco.org	djpenland@lunenburgva.net	bgordon@madisonco.virginia.gov	lpyles@fcva.us	tnolan@powhatanva.gov
Phone Number:	267-223-4533	434-696-4452	540-948-5144	540-665-6356	804-381-8538
Does your agency have or use COMLINC Interoperability equipment?	Yes	No	Yes	Yes	Yes
How long ago was the COMLINC unit installed?	Between 1 and 5 years	I don't know.	More than 5 years.	More than 5 years	Between 1 and 5 years
What type of COMLINC equipment is used by your agency (check all that apply)?					
Fixed gateway installation			Fixed gateway installation	Fixed gateway installation	Fixed gateway installation
Mobile gateway installation					
Mobile phone application					
Unknown	Unknown	Unknown			
Other (please specify)					
I am able to provide funding information on my agency's COMLINC installation.	Yes	No	Yes	Yes	Yes
Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.	100% state		100%	100% State	100% state
What type of data connection is used for COMLINC (check all that apply)?					
Fiber optics					
Microwave link					
Cable provider			Cable provider	Cable provider	
DSL or other wire-based commercial internet provider					
MPLS or dedicated circuit					
Wireless data communications (4G/LTE)					
Unknown	Unknown	Unknown			Unknown
Other (please specify)					Microwave to Admin Building
Our agency uses COMLINC to connect with (Check all that apply):					
Conventional dispatch channel - Local county or agency system			Local county or agency		Local county or agency
Conventional dispatch channel - Outside county or agency system	Outside county or agency system				Outside County or agency
Conventional dispatch channel - Non-STARs Commonwealth system					

COMLINC EVALUATION

Agency Name (Req.):	Wythe County Emergency Communications Center	Lunenburg County Sheriff's Office	Madison County 911	Frederick County Safety Commission	Powhatan
Conventional dispatch channel - Commonwealth STARS system					
Conventional dispatch channel - Other system	Other system				Other system
Conventional tactical/operations channel - Local county or agency system					
Conventional tactical/operations channel - Outside county or agency system					
Conventional tactical/operations channel - Non-STARS Commonwealth system					
Conventional tactical/operations channel - Commonwealth STARS system					
Conventional tactical/operations channel - Other system					
Conventional interoperability channel - Local county or agency system					
Conventional interoperability channel - Outside county or agency system				Outside county or agency system	
Conventional interoperability channel - Non-STARS Commonwealth system					
Conventional interoperability channel - Commonwealth STARS system					
Conventional interoperability channel - Other system					
Other conventional channel - Local county or agency system					
Other conventional channel - Outside county or agency system					
Other conventional channel - Non-STARS Commonwealth system					
Other conventional channel - Commonwealth STARS system					
Other conventional channel - Other system					
Trunked system dispatch talkgroup - Local county or agency system					
Trunked system dispatch talkgroup - Outside county or agency system				Outside county or agency system	
Trunked system dispatch talkgroup - Non-STARS Commonwealth system					
Trunked system dispatch talkgroup - Commonwealth STARS system					
Trunked system dispatch talkgroup - Other system					
Trunked system tactical/operations talkgorup - Local county or agency system					

COMLINC EVALUATION

Agency Name (Req.):	Wythe County Emergency Communications Center	Lunenburg County Sheriff's Office	Madison County 911	Frederick County Safety Commission	Powhatan
Trunked system tactical/operations talkgroup - Outside county or agency system				Outside county or agency system	
Trunked system tactical/operations talkgroup - Non-STARS Commonwealth system					
Trunked system tactical/operations talkgroup - Commonwealth STARS system					
Trunked system tactical/operations talkgroup - Other system					
Trunked system interoperability talkgroup - Local county or agency system					
Trunked system interoperability talkgroup - Outside county or agency system				Outside county or agency system	
Trunked system interoperability talkgroup - Non-STARS Commonwealth system					
Trunked system interoperability talkgroup - Commonwealth STARS system					
Trunked system interoperability talkgroup - Other system					
Other talkgroup - Local county or agency system					
Other talkgroup - Outside county or agency system				Outside county or agency system	
Other talkgroup - Non-STARS Commonwealth system					
Other talkgroup - Commonwealth STARS system					
Other talkgroup - Other system					
Please rate the COMLINC system according to the following attributes:					
Is easy to use	Agree		Strongly disagree	Strongly agree	Disagree
Meets our interoperability needs	Agree		Strongly disagree	Neither agree nor disagree	Strongly Disagree
Is reliable	Agree		Strongly disagree	Disagree	Agree
Please add any comments you might have regarding the COMLINC rating.			Not user friendly and time consuming to setup and adjust talk groups		Limited use based on our surrounding counties who have limited LMR channels--Unable to tie up their channels for a COMLINC session.
What is the approximate age of the COMLINC equipment?					
Data communications equipment (router, modem) - Hardware	1 to 5 years	Unknown	5 to 10 years	5 to 10 years	1 to 5 years
COMLINC Interface cards - Hardware	1 to 5 years	Unknown	5 to 10 years	5 to 10 years	Unknown
COMLINC Server - Hardware	1 to 5 years	Unknown	5 to 10 years	5 to 10 years	Unknown
PCs operating COMLINC - Hardware	1 to 5 years	Unknown	5 to 10 years	5 to 10 years	1 to 5 years

COMLINC EVALUATION

Agency Name (Req.):	Wythe County Emergency Communications Center	Lunenburg County Sheriff's Office	Madison County 911	Frederick County Safety Commission	Powhatan	
What software version of COMLINC is currently installed?	I don't know.	I don't know.	3.14.9	I don't know.	I don't know.	
How often is COMLINC used by your agency for incidents or pre-planned events?	Monthly	Never	Rarely	Monthly	Unknown	
How often is COMLINC used by your agency for exercises or drills?	Monthly	Never	Rarely	Weekly	Monthly	
Please identify the following issues or problems that you have had with COMLINC:						
Connection problems	Never		Seldom	Sometimes	Never	
Poor audio quality	Never		Frequently	Frequency	Seldom	
Voice latency issues (audio delay) impact operations	Seldom		Frequently	Sometimes	Seldom	
System crashes or fails	Sometimes		Sometimes	Seldom	Never	
User did not know how to operate	Never		Frequently	Never	Sometimes	
Other (please specify)						
Please rate the usefulness of the following features not currently supported by COMLINC:						
Ability to link streaming video sources to PC-based workstations		0 No Opinion		0	3	4
Ability to link streaming video sources to smartphones		1 No Opinion		0	2	3
Ability to link a smartphone PTT application to existing radio systems		1 No Opinion		3	0	4
Ability to link VoIP telephony systems - Very Useful		1 No Opinion		0	2	3
Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.	None	None	None	No additional comments, system currently not working after radio upgrade.	Linking Video such as VDOT cameras or even local-security county camera video system would be helpful.	

COMLINC EVALUATION

Agency Name (Req.):	Petersburg Bureau of Police	Nottoway Sheriff's Office	Page County Sheriff's Office	City of Richmond DEC	Fredericksburg Police Department
Address	37 E. Tabb St.	266 W. Courthouse Rd	103 Court St	3516 N. Hopkins Rd	2200 Cowan Blvd
Address 2					
City/Town	Petersburg	Nottoway	Luray	Richmond	Fredericksburg
Phone Number	804-732-4222	434-645-9044	540-743-6571 EXT 4	804-646-6860	540-373-3122
Name (Req.):	Shantel Cooper	Nikki Lester	Christopher Molina	Joe Sanders	Samantha Markey
Title:	Acting Communication Coordinator	Communication Supervisor	ECC Director	Program Manager	Communications Supervisor
Email Address (Req.):	coopers@petersburg-va.org	nlester@nottowaysheriff.org	eccdirector@pagesheriff.com	joseph.sanders@richmondgov.com	smarkey@pd.fredericksburgva.gov
Phone Number:	804-203-4405	434-645-9044	540-743-6571 EXT 4	804-467-5152	540-654-5911
Does your agency have or use COMLINC Interoperability equipment?	Yes	Yes	Yes	Yes	Yes
How long ago was the COMLINC unit installed?	Between 1 and 5 years	Between 1 and 5 years	Between 1 and 5 years	Between 1 and 5 years	More than 5 years
What type of COMLINC equipment is used by your agency (check all that apply)?					
Fixed gateway installation			Fixed gateway installation	Fixed gateway installation	Fixed gateway installation
Mobile gateway installation				Mobile gateway installation	Mobile gateway installation
Mobile phone application				Mobile phone application	
Unknown	Unknown	Unknown			
Other (please specify)					
I am able to provide funding information on my agency's COMLINC installation.	No	No	No	Yes	No
Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.				100% local funding	
What type of data connection is used for COMLINC (check all that apply)?					
Fiber optics				Fiber optics	Fiber optics
Microwave link					
Cable provider					Cable provider
DSL or other wire-based commercial internet provider			DSL or other wire-based commercial internet provider		
MPLS or dedicated circuit					
Wireless data communications (4G/LTE)					
Unknown	Unknown	Unknown		Unknown	
Other (please specify)					
Our agency uses COMLINC to connect with (Check all that apply):					
Conventional dispatch channel - Local county or agency system	Local county or agency	Local county or agency		Local county or agency system	
Conventional dispatch channel - Outside county or agency system	Outside County of agency	Outside county or agency		Outside county or agency system	Outside county agency or system
Conventional dispatch channel - Non-STARs Commonwealth system					

COMLINC EVALUATION

Agency Name (Req.):	Petersburg Bureau of Police	Nottoway Sheriff's Office	Page County Sheriff's Office	City of Richmond DEC	Fredericksburg Police Department
Conventional dispatch channel - Commonwealth STARS system				Commonwealth STARS system	
Conventional dispatch channel - Other system	Other system	Other system			
Conventional tactical/operations channel - Local county or agency system				Local county or agency system	
Conventional tactical/operations channel - Outside county or agency system		Outside county or agency		Outside county or agency system	Outside county agency or system
Conventional tactical/operations channel - Non-STARS Commonwealth system					
Conventional tactical/operations channel - Commonwealth STARS system					
Conventional tactical/operations channel - Other system					
Conventional interoperability channel - Local county or agency system				Local county or agency system	
Conventional interoperability channel - Outside county or agency system				Outside county or agency system	Outside county agency or system
Conventional interoperability channel - Non-STARS Commonwealth system					
Conventional interoperability channel - Commonwealth STARS system					
Conventional interoperability channel - Other system					
Other conventional channel - Local county or agency system				Local county or agency system	
Other conventional channel - Outside county or agency system				Outside county or agency system	
Other conventional channel - Non-STARS Commonwealth system					
Other conventional channel - Commonwealth STARS system					
Other conventional channel - Other system					
Trunked system dispatch talkgroup - Local county or agency system				Local county or agency system	
Trunked system dispatch talkgroup - Outside county or agency system				Outside county or agency system	Outside county agency or system
Trunked system dispatch talkgroup - Non-STARS Commonwealth system					
Trunked system dispatch talkgroup - Commonwealth STARS system					
Trunked system dispatch talkgroup - Other system					
Trunked system tactical/operations talkgorup - Local county or agency system				Local county or agency system	

COMLINC EVALUATION

Agency Name (Req.):	Petersburg Bureau of Police	Nottoway Sheriff's Office	Page County Sheriff's Office	City of Richmond DEC	Fredericksburg Police Department
Trunked system tactical/operations talkgroup - Outside county or agency system				Outside county or agency system	Outside county agency or system
Trunked system tactical/operations talkgroup - Non-STARS Commonwealth system					
Trunked system tactical/operations talkgroup - Commonwealth STARS system					
Trunked system tactical/operations talkgroup - Other system					
Trunked system interoperability talkgroup - Local county or agency system				Local county or agency system	
Trunked system interoperability talkgroup - Outside county or agency system				Outside county or agency system	
Trunked system interoperability talkgroup - Non-STARS Commonwealth system					
Trunked system interoperability talkgroup - Commonwealth STARS system					
Trunked system interoperability talkgroup - Other system					
Other talkgroup - Local county or agency system					
Other talkgroup - Outside county or agency system				Outside county or agency system	
Other talkgroup - Non-STARS Commonwealth system					
Other talkgroup - Commonwealth STARS system					
Other talkgroup - Other system					
Please rate the COMLINC system according to the following attributes:					
Is easy to use		Neither agree nor disagree	Disagree	Agree	Agree
Meets our interoperability needs	Strong Disagree	Strongly Disagree	Neither agree nor disagree	Agree	Agree
Is reliable		Neither agree nor disagree	Neither agree nor disagree	Agree	Neither agree nor disagree
Please add any comments you might have regarding the COMLINC rating.					
What is the approximate age of the COMLINC equipment?					
Data communications equipment (router, modem) - Hardware	1 to 5 years	1 to 5 years	Unknown	1 to 5 years	5 to 10 years
COMLINC Interface cards - Hardware	1 to 5 years	1 to 5 years	Unknown	1 to 5 years	5 to 10 years
COMLINC Server - Hardware	1 to 5 years	1 to 5 years	Unknown	1 to 5 years	5 to 10 years
PCs operating COMLINC - Hardware	1 to 5 years	1 to 5 years	Unknown	1 to 5 years	5 to 10 years

COMLINC EVALUATION

Agency Name (Req.):	Petersburg Bureau of Police	Nottoway Sheriff's Office	Page County Sheriff's Office	City of Richmond DEC	Fredericksburg Police Department
What software version of COMLINC is currently installed?	I don't know.	I don't know.	I don't know.	3.44.73	3.14.9
How often is COMLINC used by your agency for incidents or pre-planned events?	Never	Never	Never	Yearly	Rarely
How often is COMLINC used by your agency for exercises or drills?	Never	Never	Never	Monthly	Weekly
Please identify the following issues or problems that you have had with COMLINC:					
Connection problems		Frequently	Frequently	Seldom	Sometimes
Poor audio quality		Seldom		Seldom	Sometimes
Voice latency issues (audio delay) impact operations		Never		Seldom	Seldom
System crashes or fails		Sometime		Never	Never
User did not know how to operate		Sometime	Frequently	Sometimes	Never
Other (please specify)					
Please rate the usefulness of the following features not currently supported by COMLINC:					
Ability to link streaming video sources to PC-based workstations	No Opinion		3	4	3
Ability to link streaming video sources to smartphones	No Opinion		3	4	3
Ability to link a smartphone PTT application to external devices	No Opinion	No Opinion		4	3
Ability to link VoIP telephony systems - Very Useful	No Opinion		3	4	3
Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.	None	We were told we needed a faster internet connection. They now have faster connection, however, nobody ever came back to hook up COMLINC to the faster connection.	None	None	None

COMLINC EVALUATION

Agency Name (Req.):	York-Poquoson-Williamsburg	Stafford County Sheriff's Office	Goochland County	Falls Church	Richmond Ambulance Authority
Address	PO Box 532	1225 Courthouse Rd			
Address 2					
City/Town	Yorktown	Stafford			
Phone Number	757-890-3620	540-658-4400	804-556-5349	703-248-5275	
Name (Req.):	Terry Hall	Ray Davis	Terry Pleasants	Pilar Uelmen	Danny Garrison
Title:	Director	Captain/Communication Director			
Email Address (Req.):	hallt@yorkcounty.gov	lharvey@co.caroline.va.us	tpleasants@goochlandva.com	pulemen@fallschurchva.com	dgarrison@raaems.org
Phone Number:	757-890-3620	540-658-4962	804-556-5349	703-248-5275	
Does your agency have or use COMLINC Interoperability equipment?	Yes	Yes	Yes	No	No
How long ago was the COMLINC unit installed?	Between 1-5 years	I don't know.	I don't know.	I don't know.	I don't know.
What type of COMLINC equipment is used by your agency (check all that apply)?					
Fixed gateway installation	Fixed gateway installation				
Mobile gateway installation					
Mobile phone application					
Unknown		Unknown	Unknown	Unknown	Unknown
Other (please specify)					
I am able to provide funding information on my agency's COMLINC installation.	Yes	Yes	No	No	No
Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.	30% local, 70% state	100% state			
What type of data connection is used for COMLINC (check all that apply)?					
Fiber optics					
Microwave link					
Cable provider	Cable provider				
DSL or other wire-based commercial internet provider					
MPLS or dedicated circuit					
Wireless data communications (4G/LTE)					
Unknown			Unknown	Unknown	Unknown
Other (please specify)		Mobile Gateway			
Our agency uses COMLINC to connect with (Check all that apply):					
Conventional dispatch channel - Local county or agency system					
Conventional dispatch channel - Outside county or agency system	Outside county or agency system	Outside County or Agency			
Conventional dispatch channel - Non-STARS Commonwealth system	Non-STARS Commonwealth System				

COMLINC EVALUATION

Agency Name (Req.):	York-Poquoson-Williamsburg	Stafford County Sheriff's Office	Goochland County	Falls Church	Richmond Ambulance Authority
Conventional dispatch channel - Commonwealth STARS system	Commonwealth Stars System				
Conventional dispatch channel - Other system	Commonwealth Stars System				
Conventional tactical/operations channel - Local county or agency system					
Conventional tactical/operations channel - Outside county or agency system					
Conventional tactical/operations channel - Non-STARS Commonwealth system					
Conventional tactical/operations channel - Commonwealth STARS system					
Conventional tactical/operations channel - Other system					
Conventional interoperability channel - Local county or agency system					
Conventional interoperability channel - Outside county or agency system					
Conventional interoperability channel - Non-STARS Commonwealth system					
Conventional interoperability channel - Commonwealth STARS system					
Conventional interoperability channel - Other system					
Other conventional channel - Local county or agency system					
Other conventional channel - Outside county or agency system					
Other conventional channel - Non-STARS Commonwealth system					
Other conventional channel - Commonwealth STARS system					
Other conventional channel - Other system					
Trunked system dispatch talkgroup - Local county or agency system					
Trunked system dispatch talkgroup - Outside county or agency system					
Trunked system dispatch talkgroup - Non-STARS Commonwealth system					
Trunked system dispatch talkgroup - Commonwealth STARS system					
Trunked system dispatch talkgroup - Other system					
Trunked system tactical/operations talkgorup - Local county or agency system					

COMLINC EVALUATION

Agency Name (Req.):	York-Poquoson-Williamsburg	Stafford County Sheriff's Office	Goochland County	Falls Church	Richmond Ambulance Authority
Trunked system tactical/operations talkgroup - Outside county or agency system					
Trunked system tactical/operations talkgroup - Non-STARS Commonwealth system					
Trunked system tactical/operations talkgroup - Commonwealth STARS system					
Trunked system tactical/operations talkgroup - Other system					
Trunked system interoperability talkgroup - Local county or agency system					
Trunked system interoperability talkgroup - Outside county or agency system					
Trunked system interoperability talkgroup - Non-STARS Commonwealth system					
Trunked system interoperability talkgroup - Commonwealth STARS system					
Trunked system interoperability talkgroup - Other system					
Other talkgroup - Local county or agency system					
Other talkgroup - Outside county or agency system					
Other talkgroup - Non-STARS Commonwealth system					
Other talkgroup - Commonwealth STARS system					
Other talkgroup - Other system					
Please rate the COMLINC system according to the following attributes:					
Is easy to use	Neither agree nor disagree	Neither agree no disagree			
Meets our interoperability needs	Neither agree nor disagree	Disagree			
Is reliable	Neither agree nor disagree	Disagree			
Please add any comments you might have regarding the COMLINC rating.					
What is the approximate age of the COMLINC equipment?					
Data communications equipment (router, modem) - Hardware	1 to 5 years	Unknown	Unknown	Unknown	Unknown
COMLINC Interface cards - Hardware	1 to 5 years	Unknown	Unknown	Unknown	Unknown
COMLINC Server - Hardware	1 to 5 years	Unknown	Unknown	Unknown	Unknown
PCs operating COMLINC - Hardware	1 to 5 years	Unknown	Unknown	Unknown	Unknown

COMLINC EVALUATION

Agency Name (Req.):	York-Poquoson-Williamsburg	Stafford County Sheriff's Office	Goochland County	Falls Church	Richmond Ambulance Authority
What software version of COMLINC is currently installed?	3.43.40	3.43.48	I don't know.	I don't know.	I don't know.
How often is COMLINC used by your agency for incidents or pre-planned events?	Rarely	Rarely	Never	Never	Never
How often is COMLINC used by your agency for exercises or drills?	Unknown	Rarely	Never	Never	Never
Please identify the following issues or problems that you have had with COMLINC:					
Connection problems	Never				
Poor audio quality	Never				
Voice latency issues (audio delay) impact operations	Never				
System crashes or fails	Seldom				
User did not know how to operate	Never				
Other (please specify)					
Please rate the usefulness of the following features not currently supported by COMLINC:					
Ability to link streaming video sources to PC-based workstations	1		4 No Opinion	No Opinion	No Opinion
Ability to link streaming video sources to smartphones	1		4 No Opinion	No Opinion	No Opinion
Ability to link a smartphone PTT application to existing PTT systems	0		3 No Opinion	No Opinion	No Opinion
Ability to link VoIP telephony systems - Very Useful	0	No Opinion	No Opinion	No Opinion	No Opinion
Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.	None	None	Equipment was disconnected when they moved to a new building and never re-installed.	None	None

COMLINC EVALUATION

Agency Name (Req.):	Manassas City	Gloucester County	Floyd County	Buchanan County 911	Central Virginia Healthcare Coalition
Address				PO Bo 732	830 E Main St, Suite 2000
Address 2					
City/Town				Grundy	Richmond
Phone Number				276-935-2313	804-347-7852
Name (Req.):	Sean Whitfield	Liz Simmons	Kevin Sowers	Sonny Riggsby	Steve Parrott
Title:				Coordinator	Manager RHCC
Email Address (Req.):	swhitfield@manassasva.gov	lsimmons@gloucesterva.info	ksowers@floydcova.org	sonny.riggsby@buchanancounty-va.gov	steve.parrott@central-region.org
Phone Number:	703-257-8293	804-693-1378	540-745-9313	267-935-8343	804-347-7852
Does your agency have or use COMLINC Interoperability equipment?	No	No	No	No	Yes
How long ago was the COMLINC unit installed?	I don't know.	I don't know.	I don't know.	I don't know.	More than 5 years
What type of COMLINC equipment is used by your agency (check all that apply)?					
Fixed gateway installation					Fixed gateway installation
Mobile gateway installation					
Mobile phone application					
Unknown	Unknown	Unknown	Unknown	Unknown	
Other (please specify)					
I am able to provide funding information on my agency's COMLINC installation.	No	No	No	No	No
Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.					
What type of data connection is used for COMLINC (check all that apply)?					
Fiber optics					
Microwave link					
Cable provider					Cable provider
DSL or other wire-based commercial internet provider					DSL or other wire-based commercial internet provider
MPLS or dedicated circuit					
Wireless data communications (4G/LTE)					
Unknown	Unknown	Unknown	Unknown	Unknown	
Other (please specify)					
Our agency uses COMLINC to connect with (Check all that apply):					
Conventional dispatch channel - Local county or agency system					Local county or agency system
Conventional dispatch channel - Outside county or agency system					Outside county or agency system
Conventional dispatch channel - Non-STARS Commonwealth system					

COMLINC EVALUATION

Agency Name (Req.):	Manassas City	Gloucester County	Floyd County	Buchanan County 911	Central Virginia Healthcare Coalition
Conventional dispatch channel - Commonwealth STARS system					
Conventional dispatch channel - Other system					
Conventional tactical/operations channel - Local county or agency system					
Conventional tactical/operations channel - Outside county or agency system					
Conventional tactical/operations channel - Non-STARS Commonwealth system					
Conventional tactical/operations channel - Commonwealth STARS system					
Conventional tactical/operations channel - Other system					Other system
Conventional interoperability channel - Local county or agency system					Local county or agency system
Conventional interoperability channel - Outside county or agency system					Outside county or agency system
Conventional interoperability channel - Non-STARS Commonwealth system					
Conventional interoperability channel - Commonwealth STARS system					
Conventional interoperability channel - Other system					Other system
Other conventional channel - Local county or agency system					Local county or agency system
Other conventional channel - Outside county or agency system					Outside county or agency system
Other conventional channel - Non-STARS Commonwealth system					
Other conventional channel - Commonwealth STARS system					
Other conventional channel - Other system					
Trunked system dispatch talkgroup - Local county or agency system					
Trunked system dispatch talkgroup - Outside county or agency system					
Trunked system dispatch talkgroup - Non-STARS Commonwealth system					
Trunked system dispatch talkgroup - Commonwealth STARS system					
Trunked system dispatch talkgroup - Other system					
Trunked system tactical/operations talkgorup - Local county or agency system					

COMLINC EVALUATION

Agency Name (Req.):	Manassas City	Gloucester County	Floyd County	Buchanan County 911	Central Virginia Healthcare Coalition
Trunked system tactical/operations talkgroup - Outside county or agency system					
Trunked system tactical/operations talkgroup - Non-STARS Commonwealth system					
Trunked system tactical/operations talkgroup - Commonwealth STARS system					
Trunked system tactical/operations talkgroup - Other system					
Trunked system interoperability talkgroup - Local county or agency system					
Trunked system interoperability talkgroup - Outside county or agency system					
Trunked system interoperability talkgroup - Non-STARS Commonwealth system					
Trunked system interoperability talkgroup - Commonwealth STARS system					
Trunked system interoperability talkgroup - Other system					
Other talkgroup - Local county or agency system					
Other talkgroup - Outside county or agency system					
Other talkgroup - Non-STARS Commonwealth system					
Other talkgroup - Commonwealth STARS system					
Other talkgroup - Other system					
Please rate the COMLINC system according to the following attributes:					
Is easy to use					Agree
Meets our interoperability needs					Strongly Agree
Is reliable					Agree
Please add any comments you might have regarding the COMLINC rating.					Critical resource, need more access to smartphone access (phone and PTT)
What is the approximate age of the COMLINC equipment?					
Data communications equipment (router, modem) - Hardware	Unknown	Unknown	Unknown	Unknown	1 to 5 years
COMLINC Interface cards - Hardware	Unknown	Unknown	Unknown	Unknown	1 to 5 years
COMLINC Server - Hardware	Unknown	Unknown	Unknown	Unknown	1 to 5 years
PCs operating COMLINC - Hardware	Unknown	Unknown	Unknown	Unknown	1 to 5 years

COMLINC EVALUATION

Agency Name (Req.):	Manassas City	Gloucester County	Floyd County	Buchanan County 911	Central Virginia Healthcare Coalition
What software version of COMLINC is currently installed?	I don't know.	I don't know.	I don't know.	I don't know.	3.44.48
How often is COMLINC used by your agency for incidents or pre-planned events?	Never	Never	Never	Never	Monthly
How often is COMLINC used by your agency for exercises or drills?	Never	Never	Never	Never	Monthly
Please identify the following issues or problems that you have had with COMLINC:					
Connection problems					Seldom
Poor audio quality					Seldom
Voice latency issues (audio delay) impact operations					Sometimes
System crashes or fails					Seldom
User did not know how to operate					Sometimes
Other (please specify)					
Please rate the usefulness of the following features not currently supported by COMLINC:					
Ability to link streaming video sources to PC-based workstations	No Opinion	No Opinion	No Opinion	No Opinion	1
Ability to link streaming video sources to smartphones	No Opinion	No Opinion	No Opinion	No Opinion	2
Ability to link a smartphone PTT application to external systems	No Opinion	No Opinion	No Opinion	No Opinion	4
Ability to link VoIP telephony systems - Very Useful	No Opinion	No Opinion	No Opinion	No Opinion	4
Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.	None	None	None	None	Need access to capitol region trunked public safety radio system (interoperability zone). Need access to other RHCC'S in state (all six RHOCs). * Note the CVHC RHHCC (Richmond Ambulance Authority) does not have a physical gateway at our locations. We log in to the gateway at VDH located at 109 Governor St. Richmond VA 23219. William "Bill" Webb is our contact at VDH. (804)350-0125. william.webb@vdh.virginia.gov

COMLINC EVALUATION

Agency Name (Req.):	Orange County ECC	Wise County sheriff Office	Spotsylvania County	VDH	Lee County
Address	PO Box 112	Po Box 916	9119 Dean Ridings Rd	109 Governor St	33640 Main St
Address 2	112 W Main St				PO Box 367
City/Town	Orange	Wise	Spotsylvania	Richmond	Jonesville
Phone Number	540-672-1234	276-328-3756		804-864-7000	276-346-7791
Name (Req.):	Domonique Curry	Billie Laney	Mike Christie	William Webb	Alan Bailey
Title:	Director	Assistant E911 Coordinator		Info Tech Specialist II	911 Director
Email Address (Req.):	dcurry@orangecountyva.gov	blaney@wiseso.net		william.webb@dvm.virginia.gov	abailey@lee911.org
Phone Number:	540-661-5433	276-328-3756		804-350-0125	276-346-7791
Does your agency have or use COMLINC Interoperability equipment?	Yes	I don't know	Yes	Yes	Yes
How long ago was the COMLINC unit installed?	More than 5 years	I don't know.	I don't know.	More than 5 years	Between 1 and 5 years
What type of COMLINC equipment is used by your agency (check all that apply)?					
Fixed gateway installation	Fixed gateway installation		Fixed gateway installation	Fixed Gateway Installation	
Mobile gateway installation					
Mobile phone application					
Unknown		Unknown			
Other (please specify)					Currently not in use as the county is undergoing radio upgrades.
I am able to provide funding information on my agency's COMLINC installation.	Yes	No	Yes	Yes	No
Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.	100% state funding		100% State funding	80% Federal Government, 20% Hospitals	
What type of data connection is used for COMLINC (check all that apply)?					Fiber Optics
Fiber optics					
Microwave link					
Cable provider	Cable provider		Cable provider	Cable Provider	
DSL or other wire-based commercial internet provider				DSL Or Other Wire-Based Commercial Internet Provider	
MPLS or dedicated circuit					
Wireless data communications (4G/LTE)				Wireless data communications (4G/LTE)	
Unknown		Unknown			
Other (please specify)					
Our agency uses COMLINC to connect with (Check all that apply):					
Conventional dispatch channel - Local county or agency system	Local county or agency system		Local county or agency system		
Conventional dispatch channel - Outside county or agency system	Outside county or agency system		Outside county or agency system		
Conventional dispatch channel - Non-STARs Commonwealth system					

COMLINC EVALUATION

Agency Name (Req.):	Orange County ECC	Wise County sheriff Office	Spotsylvania County	VDH	Lee County
Conventional dispatch channel - Commonwealth STARS system			Commonwealth STARS system		
Conventional dispatch channel - Other system					
Conventional tactical/operations channel - Local county or agency system	Local county or agency system		Local county or agency system	Outside county or agency system	
Conventional tactical/operations channel - Outside county or agency system	Outside county or agency system		Outside county or agency system		
Conventional tactical/operations channel - Non-STARS Commonwealth system			Non-STARS Commonwealth system		
Conventional tactical/operations channel - Commonwealth STARS system					
Conventional tactical/operations channel - Other system					
Conventional interoperability channel - Local county or agency system	Local county or agency system		Local county or agency system	Local county or agency system	
Conventional interoperability channel - Outside county or agency system	Outside county or agency system		Outside county or agency system	Outside county or agency system	
Conventional interoperability channel - Non-STARS Commonwealth system			Non-STARS Commonwealth system	Non-STARS Commonwealth system	
Conventional interoperability channel - Commonwealth STARS system					
Conventional interoperability channel - Other system					
Other conventional channel - Local county or agency system	Local county or agency system			Local county or agency system	
Other conventional channel - Outside county or agency system	Outside county or agency system			Outside county or agency system	
Other conventional channel - Non-STARS Commonwealth system				Non-STARS Commonwealth system	
Other conventional channel - Commonwealth STARS system				Commonwealth STARS system	
Other conventional channel - Other system					
Trunked system dispatch talkgroup - Local county or agency system	Local county or agency system		Local county or agency system		
Trunked system dispatch talkgroup - Outside county or agency system	Outside county or agency system		Outside county or agency system		
Trunked system dispatch talkgroup - Non-STARS Commonwealth system					
Trunked system dispatch talkgroup - Commonwealth STARS system			Commonwealth STARS system		
Trunked system dispatch talkgroup - Other system					
Trunked system tactical/operations talkgorup - Local county or agency system	Local county or agency system		Local county or agency system		

COMLINC EVALUATION

Agency Name (Req.):	Orange County ECC	Wise County sheriff Office	Spotsylvania County	VDH	Lee County
Trunked system tactical/operations talkgroup - Outside county or agency system	Outside county or agency system		Outside county or agency system		
Trunked system tactical/operations talkgroup - Non-STARs Commonwealth system					
Trunked system tactical/operations talkgroup - Commonwealth STARs system			Commonwealth STARs system	Commonwealth STARs system	
Trunked system tactical/operations talkgroup - Other system					
Trunked system interoperability talkgroup - Local county or agency system	Local county or agency system				
Trunked system interoperability talkgroup - Outside county or agency system	Outside county or agency system				
Trunked system interoperability talkgroup - Non-STARs Commonwealth system					
Trunked system interoperability talkgroup - Commonwealth STARs system					
Trunked system interoperability talkgroup - Other system					
Other talkgroup - Local county or agency system					
Other talkgroup - Outside county or agency system					
Other talkgroup - Non-STARs Commonwealth system					
Other talkgroup - Commonwealth STARs system				Commonwealth STARs system	
Other talkgroup - Other system					
Please rate the COMLINC system according to the following attributes:					
Is easy to use	Agree		Agree	Neither agree nor disagree	Neither agree not disagree
Meets our interoperability needs	Agree		Neither agree nor disagree	Strongly agree	Disagree
Is reliable	Disagree		Neither agree nor disagree	Agree	Neither agree not disagree
Please add any comments you might have regarding the COMLINC rating.				Problem- Educating POC's to take the time to understand system capabilities and integrate those to solve interoperability gaps in day to day operations and emergency situations.	
What is the approximate age of the COMLINC equipment?					
Data communications equipment (router, modem) - Hardware	Unknown	Unknown	1 to 5 years	Unknown	1 to 5 years
COMLINC Interface cards - Hardware	Unknown	Unknown	1 to 5 years	5 to 10 years	1 to 5 years
COMLINC Server - Hardware	Unknown	Unknown	1 to 5 years	5-10 years	1 to 5 years
PCs operating COMLINC - Hardware	Unknown	Unknown	1 to 5 years	5 to 10 years	1 to 5 years

COMLINC EVALUATION

Agency Name (Req.):	Orange County ECC	Wise County sheriff Office	Spotsylvania County	VDH	Lee County
What software version of COMLINC is currently installed?	3.14.8	I don't know.	I don't know.	3.44.xx Region I 3.43.48 Server Central Region 3.14 (XP) Server 4 Regions	I don't know.
How often is COMLINC used by your agency for incidents or pre-planned events?	Unknown	Unknown	Unknown	Daily Unknown	Never
How often is COMLINC used by your agency for exercises or drills?	Weekly	Unknown	Weekly	Weekly Monthly	Unknown
Please identify the following issues or problems that you have had with COMLINC:					
Connection problems				Seldom	
Poor audio quality			Frequently	Seldom	
Voice latency issues (audio delay) impact operations			Frequently	Seldom	
System crashes or fails	Frequently			Seldom	Frequently
User did not know how to operate	Seldom			Sometimes	
Other (please specify)	Seems RIOS has had issues connecting and operating several times over past 6-8 months.			Problems vary with region & familiarity with system.	
Please rate the usefulness of the following features not currently supported by COMLINC:					
Ability to link streaming video sources to PC-based workstations	No Opinion	No Opinion	No Opinion	2	0
Ability to link streaming video sources to smartphones	No Opinion	No Opinion	No Opinion	2	0
Ability to link a smartphone PTT application to external systems	No Opinion	No Opinion	No Opinion	4	No Opinion
Ability to link VoIP telephony systems - Very Useful	No Opinion	No Opinion	No Opinion	4	0
Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.	None	None	None	None	I can't honestly rate a system that isn't working. Once all projects are complete and equipment can be hooked up again I might have something to say All I can say is that the ComLinc product, as good as it is, was a poor alternative of the State on becoming interoperable with radio systems. If I left any questions blank, it is because the question is irrelevant due to the lack of equipment in use and not hooked up. Unknown as to when it will be hooked back up.

COMLINC EVALUATION

Agency Name (Req.):	Scott County 911	Pulaski	Giles County sheriff	Bristol VA Police Department	Bland County sheriff Office
Address	239 Nena St.		1 Taylor Ave., Ste 1	501 Scott St	612 Main St., Ste 203
Address 2					
City/Town	Gate City		Harrisburg	Bristol	Bland
Phone Number	276-386-7220		540-921-3842	423-502-2265	276-688-4641
Name (Req.):	Janice Jennings	Chris Akers	John Davis	Charles C. Robinette	Jenna Dunn
Title:	911 Director		911 Director	Administration Lieutenant	91 Emergency Service Coordinator
Email Address (Req.):	jjennings@scottcountyva.com	cakers@pcva911.org	jdavis@gilessheriff.org	crobinette@bristolva.org	jdunn@bland.org
Phone Number:	276-386-7220	540-980-7858	540-921-3842	276-821-6141	276-688-4641
Does your agency have or use COMLINC Interoperability equipment?	Yes	Yes	Yes	Yes	Yes
How long ago was the COMLINC unit installed?	More than 5 years	Between 1 and 5 years	Between 1-5 years	Between 1 and 5 years	Between 1 and 5 years
What type of COMLINC equipment is used by your agency (check all that apply)?					
Fixed gateway installation	Fixed Gateway Installation	Fixed Gateway Installation		Fixed Gateway Installation	Fixed Gateway Installation
Mobile gateway installation					
Mobile phone application					
Unknown			Unknown		
Other (please specify)					
I am able to provide funding information on my agency's COMLINC installation.	Yes	Yes	Yes	Yes	No
Please enter the approximate percentage of local funding for the initial procurement and installation of the COMLINC equipment at your agency.	0% Local, 100% State	0% Local, 100% State	100% state	Local 50%, State 50%	
What type of data connection is used for COMLINC (check all that apply)?					
Fiber optics			Fiber Optics	Fiber Optics	
Microwave link					
Cable provider		Cable provider			
DSL or other wire-based commercial internet provider	DSL or other wire-based commercial internet provider				
MPLS or dedicated circuit					
Wireless data communications (4G/LTE)					
Unknown					Unknown
Other (please specify)					
Our agency uses COMLINC to connect with (Check all that apply):					
Conventional dispatch channel - Local county or agency system	Local County or Agency system			Local Agency System	
Conventional dispatch channel - Outside county or agency system		Outside county or agency system			
Conventional dispatch channel - Non-STARs Commonwealth system					

COMLINC EVALUATION

Agency Name (Req.):	Scott County 911	Pulaski	Giles County sheriff	Bristol VA Police Department	Bland County sheriff Office
Conventional dispatch channel - Commonwealth STARS system		Commonwealth STARS system			
Conventional dispatch channel - Other system					
Conventional tactical/operations channel - Local county or agency system	Local County or Agency system				
Conventional tactical/operations channel - Outside county or agency system		Outside county or agency system			Conventional tactical/operations channel - Outside county or agency system
Conventional tactical/operations channel - Non-STARS Commonwealth system					
Conventional tactical/operations channel - Commonwealth STARS system		Commonwealth STARS system			Conventional tactical/operations channel - Commonwealth STARS system
Conventional tactical/operations channel - Other system					
Conventional interoperability channel - Local county or agency system	Local County or Agency system				
Conventional interoperability channel - Outside county or agency system					
Conventional interoperability channel - Non-STARS Commonwealth system					
Conventional interoperability channel - Commonwealth STARS system					
Conventional interoperability channel - Other system					
Other conventional channel - Local county or agency system	Local County or Agency system				
Other conventional channel - Outside county or agency system					
Other conventional channel - Non-STARS Commonwealth system					
Other conventional channel - Commonwealth STARS system					
Other conventional channel - Other system					
Trunked system dispatch talkgroup - Local county or agency system	Local County or Agency system				
Trunked system dispatch talkgroup - Outside county or agency system					
Trunked system dispatch talkgroup - Non-STARS Commonwealth system					
Trunked system dispatch talkgroup - Commonwealth STARS system					
Trunked system dispatch talkgroup - Other system					
Trunked system tactical/operations talkgorup - Local county or agency system	Local County or Agency system				

COMLINC EVALUATION

Agency Name (Req.):	Scott County 911	Pulaski	Giles County sheriff	Bristol VA Police Department	Bland County sheriff Office
Trunked system tactical/operations talkgorup - Outside county or agency system					
Trunked system tactical/operations talkgorup - Non-STARS Commonwealth system					
Trunked system tactical/operations talkgorup - Commonwealth STARS system					
Trunked system tactical/operations talkgorup - Other system					
Trunked system interoperability talkgroup - Local county or agency system	Local County or Agency system				
Trunked system interoperability talkgroup - Outside county or agency system					
Trunked system interoperability talkgroup - Non-STARS Commonwealth system					
Trunked system interoperability talkgroup - Commonwealth STARS system					
Trunked system interoperability talkgroup - Other system					
Other talkgroup - Local county or agency system					
Other talkgroup - Outside county or agency system	Outside county or agency system				
Other talkgroup - Non-STARS Commonwealth system					
Other talkgroup - Commonwealth STARS system					
Other talkgroup - Other system					
Please rate the COMLINC system according to the following attributes:					
Is easy to use	Agree	Disagree	Neither agree nor disagree	Yes	Agree
Meets our interoperability needs	Strongly Agree	Disagree	Neither agree nor disagree	Yes	Agree
Is reliable	Agree	Strongly Disagree	Disagree	Strongly Disagree	Neither agree nor disagree
Please add any comments you might have regarding the COMLINC rating.					
What is the approximate age of the COMLINC equipment?					
Data communications equipment (router, modem) - Hardware	5 to 10 years	1 to 5 years	1 to 5 years	1 to 5 years	1 to 5 years
COMLINC Interface cards - Hardware	5 to 10 years	1 to 5 years	1 to 5 years	1 to 5 years	1 to 5 years
COMLINC Server - Hardware	5 to 10 years	1 to 5 years	1 to 5 years	1 to 5 years	1 to 5 years
PCs operating COMLINC - Hardware	5 to 10 years	1 to 5 years	1 to 5 years	1 to 5 years	1 to 5 years

COMLINC EVALUATION

Agency Name (Req.):	Scott County 911	Pulaski	Giles County sheriff	Bristol VA Police Department	Bland County sheriff Office
What software version of COMLINC is currently installed?	3.43.25	I don't know.	I don't know.	3.4.3.25	I don't know.
How often is COMLINC used by your agency for incidents or pre-planned events?	Rarely	Rarely	Never	Yearly	Never
How often is COMLINC used by your agency for exercises or drills?	Unknown	Monthly	Monthly	Yearly	Never
Please identify the following issues or problems that you have had with COMLINC:					
Connection problems	Never	Seldom	Sometimes	Frequently	Frequently
Poor audio quality	Never	Sometimes	Never	Never	Never
Voice latency issues (audio delay) impact operations	Never	Sometimes	Seldom	Never	Seldom
System crashes or fails	Seldom	Frequently	Sometimes	Frequently	Sometimes
User did not know how to operate	Seldom	Sometimes	Frequently	Never	Sometimes
Other (please specify)		Does not stay up.			
Please rate the usefulness of the following features not currently supported by COMLINC:					
Ability to link streaming video sources to PC-based workstations	0	3	3	4	2
Ability to link streaming video sources to smartph	0	3	3	3	2
Ability to link a smartphone PTT application to ex	0	3	3	4	2
Ability to link VoIP telephony systems - Very Usef	0	3	3	3	2
Please add any other comments or feedback you wish to provide regarding your agency's installation and use of COMLINC.	None	Has good potential but needs updating on equipment and software.	Good idea but needs further training.	None	Need to get system working.

APPENDIX F

CSMS Interview Records



Interview Questionnaire

Date: 9/7/2018

Agency Name: Hanover County

Agency Representative: Charles Smith

Phone: 804-572-9520

Email: ccsmith@hanovercounty.gov

Are you using COMLINC today? In what capacity?

We have COMLINC but our use is limited because neighboring localities have issues with the system. For example: There was a fire in Goochland and they called for mutual aid but they could not bring up the patch.

Henrico does not have the RIOS workstation on their dispatch floor, so they cannot create a patch, but they can receive one.

Capital Region is currently involved in pursuit training and we setup a link between Hanover, Henrico, and VSP and we experienced audio issues (clipped the front end of the audio).

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We interoperate with different localities in different ways: King William is a user on the Hanover system; Goochland has our radios; Caroline County has our frequencies programed into their radios; Henrico County, Chesterfield, Richmond, and Colonial Heights all have shared talk groups; and we have interoperability issues with New Kent and Spotsylvania which limits our connection with them.

We recently broke interoperability by encrypting channels, so we still use several unencrypted interop channels.

Are there any Governance Issues that make using COMLINC problematic for your agency?

There are no formal MOUs in place but there should be.

How could COMLINC change to be more efficient and effective for your use?

Most localities have only a single talk path, which is insufficient. Localities need more capacity. We should standardize how COMLINC is implemented in each dispatch center or circulate a user guide to explain what technology everyone has and how they use the system.

We need to ensure that everyone who has a COMLINC node is proficient in its use, as interoperability is only as strong as the weakest link.

We are an advocate for COMLINC. Although it is not perfect, it does work.

We have a small budget line that could be used to support COMLINC in the County. However, it must be something that works reliably in which all localities participate.

What initial and ongoing training would help you better utilize COMLINC?

We received proper initial training. It is important to get all users comfortable with using the system and to have regular roll calls and exercises.



Interview Questionnaire

Date: 9/18/2018

Agency Name: Amelia County

Agency Representative: Ranna Cope

Phone: 804-561-2118

Email: RdCope@ameliasheriff.org

Are you using COMLINC today? In what capacity?

COMLINC was installed initially, but when it stopped working, we put in a work order and no one ever came to repair the system.

We found the COMLINC system to be complicated, and most who were first trained are no longer with the County.

When we reconfigured our dispatch center the system was not installed.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We use SIRS to contact surrounding localities and VSP. We also contact VSP dispatch by phone.

Are there any Governance Issues that make using COMLINC problematic for your agency?

-No response-

How could COMLINC change to be more efficient and effective for your use?

If we had a major incident interoperability would be beneficial. However, as we do not have a lot of major incidents, it is unlikely we would use it often.

Dispatchers already look at six screens (radio, phone, VCIN, three for CAD) and we will have a seventh with NG911. How do we reasonably integrate another screen?

What initial and ongoing training would help you better utilize COMLINC?

We would need initial training. Training and exercise are difficult because we are a small agency with limited personnel.



Interview Questionnaire

Agency Name: Caroline County

Agency Representative: Lisa Harvey

Phone: 804-633-9831

Email: lharvey@co.caroline.va.us

Are you using COMLINC today? In what capacity?

Test/Drills weekly, when the system is up

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Existing & Shared Radio

Complicated and difficult to use

Are there any Governance Issues that make using COMLINC problematic for your agency?

No

How could COMLINC change to be more efficient and effective for your use?

None

What initial and ongoing training would help you better utilize COMLINC?

None



Interview Questionnaire

Date: 9/18/2018

Agency Name: Charles City

Agency Representative: Davon Jones

Phone: (804) 652-2326

Email: DAJones@co.charles-city.va.us

Are you using COMLINC today? In what capacity?

We have the system but we never use it unless another jurisdiction reaches out to us, which rarely happens. We are using the older technology more than the new one. We have the option but we don't have the need to use it.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We have RIOS, but we don't use the system. We only use our regular stations to connect with surrounding localities and SIRS to reach VSP. The majority of our communications are via telephone.

Are there any Governance Issues that make using COMLINC problematic for your agency?

None that I am aware of.

How could COMLINC change to be more efficient and effective for your use?

We need more training on what we could use it for.

COMLINC would be useful to have a state-wide connection. With COMLINC now, we can only connect to a few people in this region, but in the event of a big disaster, we need to be able to hear everyone.

What initial and ongoing training would help you better utilize COMLINC?

Training on what the system can do for us and regular system tests would keep us familiar with the system. Right now, we never know if it's working or not. Weekly roll calls would be beneficial for this purpose.

Our dispatch staff aren't trained on it at all because we never use it, and even those of us who are trained only really know how to answer and not how to imitate contact.



Interview Questionnaire

Date: 9/21/2018

Agency Name: Chesterfield County

Agency Representative: Richard Troshak

Phone: (804) 706-2595

Email: TroshakR@chesterfield.gov

Are you using COMLINC today? In what capacity?

Yes, we test the system monthly. We use COMLINC to communicate with Prince George, but we use as a redundant system to some of our other solutions.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We have a regional system that meets most of our interoperability needs, however we have to daisy chain connections which makes the system problematic.

We connect with VSP by providing them with our radios.

An example of using COMLINC with Prince George: When President Obama visited, COMLINC became unusable because the bandwidth was consumed.

Are there any Governance Issues that make using COMLINC problematic for your agency?

-No Response-

How could COMLINC change to be more efficient and effective for your use?

If you were able to integrate the gateway into our radio console, it would allow for more use through our locality.

We need to work together with other localities and VSP to overcome system key and encryption issues.

What initial and ongoing training would help you better utilize COMLINC?

COMLINC training is critical, and we currently incorporate it.



Interview Questionnaire

Date: 9/18/2018

Agency Name: Colonial Heights

Agency Representative: Eric Albert

Phone: (804) 520-9317

Email: alberte@colonialheightsva.gov

Are you using COMLINC today? In what capacity?

We have COMLINC installed and we use it to talk to surrounding localities with whom we have Mutual Aid agreements. For instance, we are able to patch to Dinwiddie(VHF) and Prince George(UHF).

Our COMLINC is linked to Chesterfield County radio room and then to the Capital Region 800MHz radio system that includes Henrico, Chesterfield, Richmond, Hanover, Colonial Heights and Richmond Airport police.

Have not had a big need to connect to VSP.

We have used our own money to upgrade hardware from Windows XP to Windows 7.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

When we are outside our footprint, we are able to move our radios to the adjacent radio system, but we lose contact with our own emergency communication center. With COMLINC we can patch and be able to monitor and communicate across disparate radio systems.

Are there any Governance Issues that make using COMLINC problematic for your agency?

No issues.

How could COMLINC change to be more efficient and effective for your use?

COMLINC is an awesome system, but we need to upgrade to RIOS Lite.

Currently we have a VPN connection to back room of Chesterfield County, but we would also like to be an independent node.

Oftentimes people misunderstand the problems they are having and immediately blame COMLINC, when it is really a problem with their own network. Education is critical to the success of this project. It is important to educate localities on how the system does and does not work, for example, letting them know it will not work once you are outside your radio system's footprint.

What initial and ongoing training would help you better utilize COMLINC?

Ongoing training is important and regular use is even more important. If we use COMLINC on a regular basis, it would become second nature and we would subsequently know how to utilize the system if the need arose.

We have created laminated "cheat sheets" for how to use the system and create patches. Dispatchers have access to the demo/training software which is helpful for ongoing training.



Interview Questionnaire

Date: 9/12/2018

Agency Name: Dinwiddie County

Agency Representative: Denice Crowder

Phone: (804) 469-5395

Email: dcrowder@dinwiddieva.us

Are you using COMLINC today? In what capacity?

No. We have the system but we don't use it. The few times we used it in the past, it has always failed. The only reason we still have the system is because we were told we had to have it.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We formed our own internal solution with patches. Petersburg has an 800 system they can use to connect us to Petersburg, Chesterfield, and Colonial Heights. We have an internal patch we can use to connect Chesterfield's fire department to our fire department, or to Prince George because we have an automatic aid agreement with them both.

For Amelia and Brunswick counties, we have already saved each other's frequencies into our radios, so we can communicate with each other immediately.

COMLINC is not reliable because it is internet based, which is easily impaired or clogged up in a disaster, and it cannot be used outside of your footprint.

Are there any Governance Issues that make using COMLINC problematic for your agency?

-No Response-

How could COMLINC change to be more efficient and effective for your use?

COMLINC is problematic because it will only work within your footprint and as long as the internet holds up. With all of our internal interoperability, it is an irrelevant solution.

We did a test of the systems we currently use and COMLINC was our absolute last resort, because all of our other solutions work better.

What initial and ongoing training would help you better utilize COMLINC?

-No Response-



Interview Questionnaire

Date: 9/26/2018

Agency Name: Goochland County

Agency Representative: Terry Pleasants

Phone: (804) 556-5349

Email: tpleasants@goochlandva.us

Are you using COMLINC today? In what capacity?

No, we do not have COMLINC equipment installed.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We don't use COMLINC because it is not installed.

Are there any Governance Issues that make using COMLINC problematic for your agency?

No issues.



Interview Questionnaire

Date: 9/18/2018

Agency Name: City of Hopewell

Agency Representative: Kimberly Parson

Phone: (804) 541-2272

Email: kparson@hopewellva.gov

Are you using COMLINC today? In what capacity?

We do not use RIOS. We have an 800 MHz system.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We are able to patch to Prince George County, Chesterfield County, the City of Petersburg and Fort Lee. Their logic is programed into our radios and our consoles.

Are there any Governance Issues that make using COMLINC problematic for your agency?

None that I am aware of.

How could COMLINC change to be more efficient and effective for your use?

We are not in a position where we need it and we would not be able to fund it. We are not missing out on interoperability because we have not had an event occur that we could not talk to who we needed to. Our current program meets our needs.



Interview Questionnaire

Date: 8/6/2018

Agency Name: King and Queen/Essex County Regional System

Agency Representative: Greg Hunter

Phone: (804) 592-7920

Email: gregory.hunter@fairfaxcounty.gov

Are you using COMLINC today? In what capacity?

Local support of COMLINC is poor because there are no funds available to support necessary maintenance and upgrades, and separate communication pathways already exist between localities.

If you don't have COMLINC, what program are you using? Is there a reason usage of COMLINC is minimal?

King and Queen and Essex counties have a significant interoperable repeater system constructed to handle interoperability with New Kent (ISSI) Middlesex (800 TAC plus ISSI Planed), King William (Direct), and Richmond County (just added to regional system), in addition to others which will be added to the regional system shortly.

King and Queen indicated that Agencies with a low channel count on their systems cannot afford to have their main operating channels tied up in a patch configuration.

Although RIOS COMLINC patches can be made, the quality of the patched coverage is not always first-rate because the radio transmitters and/or receivers are either out of range or improperly tuned. Patched coverage is totally dependent on the condition and range of the system patched to.

The county currently uses a MOU process, with direct access to radio. Local political cooperation is very good to excellent, and surrounding counties have relationships with

many jurisdictions. Currently King and Queen, Essex and Richmond counties are on same system with more in the process of joining the system. Thus, there is low demand for a RIOS COMLINK solution since there is already a Direct Access technological pathway established.

How could COMLINC change to be more efficient and effective for your use?

Frequent system tests are necessary to insure system integrity.

What initial and ongoing training would help you better utilize COMLINC?

A consistent training program is needed due to high dispatch turnover.



Interview Questionnaire

Date: 9/18/2018

Agency Name: King William County

Agency Representative: Sherry Lipscomb

Phone: 804-769-4126

Email: brlipscomb@kingwilliamcounty.us

Are you using COMLINC today? In what capacity?

We have COMLINC but we have never used it because it is not connected to the internet at all. It has sat at our console as long as we have had it without proper connection.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

RIOS is not connected. It hasn't been working for a while and as not been fixed. Someone was supposed to come out and look at it. Our internet connection is down

We use teletype, telephone calls, and SIRS radio to reach out to VSP. We have not had a need for further interoperability.

Are there any Governance Issues that make using COMLINC problematic for your agency?

-No Response-

How could COMLINC change to be more efficient and effective for your use?

It would be helpful if the system worked.

For some agencies, interoperability is extremely useful. We recognize it is vital for others, but for us we have not utilized the system or pushed having it fixed because we do not have a strong need for COMLINC. No one has contacted us via COMLINC or asked us to use it.

What initial and ongoing training would help you better utilize COMLINC?

We would need updated training if the system was operational, we have new people who have never seen it or used it.



Interview Questionnaire

Agency Name: Lancaster County

Agency Representative: Glenn Rowe

Phone: 804-462-5129

Email: growe@lancova.com

Are you using COMLINC today? In what capacity?

No

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?;

Shared Radio / Telephone / e-mail

N/A

Are there any Governance Issues that make using COMLINC problematic for your agency?

No

How could COMLINC change to be more efficient and effective for your use?

N/A

What initial and ongoing training would help you better utilize COMLINC?

N/A



Interview Questionnaire

Date: 9/26/2018

Agency Name: Louisa County

Agency Representative: Tonya Miller

Phone: 540-967-3494

Email: tmiller@louisa.org

Are you using COMLINC today? In what capacity?

Yes, we have 2 positions utilized on the dispatch floor, but the technology is at least 10 years old.

We use the system for multi-jurisdictional events, such as communicating with Spotsylvania calls on Lake Anna. We also participate in weekly testing with the Fredericksburg Group, including VSP.

We also used it to communicate with VDOT during Hurricane Florence.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

When we use the system to connect, everyone sounds distorted lately which is problematic.

Some localities are not at the same operational level which makes it difficult to use COMLINC to connect with them.

We have had some problems with range and lost connectivity during a pursuit.

Are there any Governance Issues that make using COMLINC problematic for your agency?

No issues.

How could COMLINC change to be more efficient and effective for your use?

It would be helpful to simplify the process of making patches.

We need everyone to have the appropriate connectivity, and we are also limited because everyone is not at the same level of knowledge.

It is good to have central monitoring of when localities are online, and if a system is offline for an extended period of time, there is an alarm so someone can reach out.

What initial and ongoing training would help you better utilize COMLINC?

We need refresher training periodically, and we need to have training on COMLINC as part of initial dispatcher training.



Interview Questionnaire

Agency Name: Northumberland County

Agency Representative: Robert Headley

Phone: 804-580-9261

Email: rheadley@co.northumberland.va.us

Are you using COMLINC today? In what capacity?

No. Do not have this equipment

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

SIRS Radio & Shared Radio

Do not have COMLINC

Are there any Governance Issues that make using COMLINC problematic for your agency?

No

How could COMLINC change to be more efficient and effective for your use?

N/A

What initial and ongoing training would help you better utilize COMLINC?

N/A



Interview Questionnaire

Agency Name: Nottoway County

Agency Representative: Nikki Lester

Phone: 434-645-9044

Email: nlester@nottowaysheriff.org

Are you using COMLINC today? In what capacity?

Not currently – Unable to use with the new internet connection

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Local Radio or telephone

Never connected to the faster internet

Are there any Governance Issues that make using COMLINC problematic for your agency?

No

How could COMLINC change to be more efficient and effective for your use?

By getting it to work with the new faster internet connection

What initial and ongoing training would help you better utilize COMLINC?

Refresher training, ongoing-system has not been used in a while along with new dispatchers



Interview Questionnaire

Agency Name: Petersburg County

Agency Representative: Shantel Cooper

Phone: 804-732-4222

Email: coopers@petersburg.va.org

Are you using COMLINC today? In what capacity?

Not currently using

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Radio Patching

NO specific reason, maybe other Jurisdiction's did not have it when set up

Are there any Governance Issues that make using COMLINC problematic for your agency?

No

How could COMLINC change to be more efficient and effective for your use?

Unknown – no experience

What initial and ongoing training would help you better utilize COMLINC?

Initial retraining, as they have not used it



Interview Questionnaire

Agency Name: Powhatan County

Agency Representative: Tom Nolan

Phone: 804-598-5677

Email: tnolan@powhatanva.gov

Are you using COMLINC today? In what capacity?

Not Currently – Powhatan County has two Counties that have limited LMR channels. In the event we connected to Amelia or Cumberland County LMR system we would be using their primary channel to communicate on.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

See above

Are there any Governance Issues that make using COMLINC problematic for your agency?

No – more of a capacity and need at this time

How could COMLINC change to be more efficient and effective for your use?

If we had video feed, use it on mobile phone or subscriber

What initial and ongoing training would help you better utilize COMLINC?

I believe additional training could be helpful. Video online training. After the training, have a regional testing or call in day per quarter.



Interview Questionnaire

rhcc

Date: 10/3/2018

Agency Name: Central Virginia Healthcare Coalition (Virginia Department of Health and the Virginia Hospital and Healthcare Association)

Agency Representative: Steve Parrott – Manager Central Region Healthcare Coordination Center

Phone: (804) 347-7852

Email: steve.parrott@central-region.org

Are you using COMLINC today? In what capacity?

Yes, the CVHC RHCC utilizes RIOS-COMLINC to communicate to the regional healthcare partners (EMS, Emergency Management, Hospitals and Healthcare Facilities). Our RHCC has clients (Primary RHCC, Richmond Ambulance Authority Communications and with our On duty staff officers) that link to the primary COMLINC server located at the Virginia Department of Health.

COMLINC is CRITICAL to our daily operations. This system is located at our Primary-RHCC, our back up RHCC and our 24/7/365 call center at the Richmond Ambulance Authority Communications Center. COMLINC is essential to the Central Region Healthcare Coalition's Regional Healthcare Coordination Center (RHCC).

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We also use our CRISiS Communications System (Hospital to Hospital and RHCC) direct communications (UHF Radio System), We also use the Virginia Hospital and Healthcare Alerting and Status System (VHASS). VHASS is a web-based internet communications platform managed and operated by VHHA-VDH.

Are there any Governance Issues that make using COMLINC problematic for your agency?

On occasion, we face some administrative decisions or funding to support the infrastructure, equipment upgrades and annual maintenance. COMLINC should provide definitive guidance and locality and State support to install, activate, evaluate, monthly communications test, monthly training and regular use to maintain proficiency in use of the system.

How could COMLINC change to be more efficient and effective for your use?

Resolve the access to propriety systems (National Capital Region, Richmond “Capital” Regional Radio System, Hampton Road “Orion” System, Shenandoah, Roanoke, etc.), and allow access to these networks via subscriber units connected to the coordination centers both public safety, healthcare coalitions RHCCs, local, state and federal PSAPs. Provide support to install, activate, evaluate, provide monthly communications test, monthly training programs and create some daily use options to maintain proficiency. Provide funding to support the internet access and provide satellite internet back up to make the system more resilient.

What initial and ongoing training would help you better utilize COMLINC?

Provide COMLINC, RIOS and RIOS Lite training at the basic academy level of training (LE, Fire, EMS, EM, EOCs, RHCCs, PSAPs, etc). Provide ICS COML and ICS COMT Training to include COMLINC-RIOS training locally, regionally and as part of the state’s Incident Management Team, Specialty Teams (Haz-Mat, Technical Rescue, Swift Water, IMT, SAR, etc.). These assets need to be promoted at the Virginia APCO-Interoperability Conference, State Police Chiefs Conference, State Fire Chiefs Conference, Virginia EMS Conference, Virginia Association of Sheriffs Association Conferences, Virginia Association of Volunteer Rescue Squad Conference, Virginia Firefighters Association Conference, Virginia Hospital and Healthcare Association Conference, Virginia Haz-Mat Association Conference, Virginia Department of Military Affairs, Technical Rescue Association of Virginia, and other public safety agencies and associations.



Interview Questionnaire

Agency Name: City of Richmond

Agency Representative: Joseph Sanders

Phone: 804-467-5152

Email: joseph.sanders@richmondgov.com

Are you using COMLINC today? In what capacity?

Yes, we have RIOS with 3 live clients, 1 backup client, and a TAC kit that we deploy at our EOC.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

N/A

Are there any Governance Issues that make using COMLINC problematic for your agency?

We haven't had any issues so far.

How could COMLINC change to be more efficient and effective for your use?

I am not sure of any major changes that I could recommend. Our RIOS system isn't used on a day to day basis here or at any of the other entities that I have worked for. It's a great tool to connect with other agencies if and when the need arises. Outside of major events the system really isn't being used given that our Regional trunking system provides us with the communication that we need with everyone we work with. Our new P25 system that is in the pipeline should provide us with even more interoperability options as well. I think RIOS is a great tool at rallies and events when we want to connect with agencies

such as VSP. Our biggest issue right now is that our region has encrypted all of our police talk groups which includes the regional pursuit channel. So when we patch them with RIOS that technically unencrypts all of the communications which makes it less likely to be used. So if there were a way to retain the encryption somehow that might be worth implementing.

What initial and ongoing training would help you better utilize COMLINC?

A regional meeting twice a year of all COMLINC users (at least regionally) to meet and discuss how they could better utilize the system and receive training on the latest and greatest that COMLINC has to offer.



Interview Questionnaire

Agency Name: Richmond City

Agency Representative: Stephen Willoughby

Phone: 804-646-5142

Email: Stephen.willoughby@richmondgov.com

Are you using COMLINC today? In what capacity?

No – Not connected

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Radio Patching

SIRS Radio & Shared Radio

Are there any Governance Issues that make using COMLINC problematic for your agency?

No

How could COMLINC change to be more efficient and effective for your use?

N/A

What initial and ongoing training would help you better utilize COMLINC?

N/A



Interview Questionnaire

Agency Name: Spotsylvania County

Agency Representative: Mike Christie

Phone:

Email: mchristie@spotsylvania.va.us

Are you using COMLINC today? In what capacity?

Yes, I would categorize our application of COMLINC as extensive use:

We hold a Bi-Weekly testing with Prince William County, Stafford County, Fauquier County, King George County, Louisa County, Culpepper County, Orange County, City of Fredericksburg, and the Virginia State Police.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

N/A

Are there any Governance Issues that make using COMLINC problematic for your agency?

N/A

How could COMLINC change to be more efficient and effective for your use? (See Next Page)

It could be improved by: getting all users on same level, creating the ability to have jurisdictions alphabetized, overcoming issues routing through SyTech and Audio Latency problems.

VOX—Voice activation issues cause interruption of message.

What initial and ongoing training would help you better utilize COMLINC?



Interview Questionnaire

Agency Name: Clarke County

Agency Representative: Mike Christie

Phone:

Email: mchristie@spotsylvania.va.us

Are you using COMLINC today? In what capacity?

No

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Shared Radio Frequency

Not practical for day to day operations

Are there any Governance Issues that make using COMLINC problematic for your agency?

N/A

How could COMLINC change to be more efficient and effective for your use? (See Next Page)

Procedures need to be in place for its use. (examples: how do you connect to SP or VDOT)

What initial and ongoing training would help you better utilize COMLINC?

Refresher training, system is rarely used, therefore they forget how to use it.

Internet may be Cable provider instead of DSL

Funding was generally all state



Interview Questionnaire

Agency Name: Culpeper County

Agency Representative: William Martin

Phone: (540) 727-8800

Email: wmartin@culpepercounty.gov

Are you using COMLINC today? In what capacity?

Yes, we use COMLINC for drills and events.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We interoperate using a joint shared radio system and patched radio communication.

Are there any Governance Issues that make using COMLINC problematic for your agency?

No, there are none.

How could COMLINC change to be more efficient and effective for your use?

It would be helpful for the system to work faster, and be connected to the everyday consoles being used.

What initial and ongoing training would help you better utilize COMLINC?

We would benefit from refresher training, so new staff can be brought up to speed with it.



Interview Questionnaire

Agency Name: Fauquier County

Agency Representative: Chuck Kuhler

Phone: 540-422-8644

Email: Chuck.Kuhler@fauquiercounty.gov

Are you using COMLINC today? In what capacity?

VSP support for COMLINC is great! Service calls are handled in a timely manner.

- Fauquier has three RIOS COMLINC locations: dispatch, mobile command, and the Blue Mountain Tower site.
- The COMLINC location at Blue Mountain in Fauquier County is not routinely used for day-to-day operations by Fauquier County, but it is used by Warren County to monitor traffic condition at Front Royal, Virginia. (Radio Traffic)
- Fauquier indicated that RIOS COMLINC is a good tool for a planned event.
- Most are unfamiliar with COMLINC, they aren't aware of it and it is rarely used. Fauquier occasionally tests RIOS COMLINC capabilities with the Spotsylvania and Prince William counties—the tests consist of talking directly from computer to computer or radio frequency patch to radio, but there is no day-to-day usage plan in place.

Recent Event:

Spotsylvania County tried to connect to Stafford yesterday with COMLINC, the connection failed.

Mike Christie asked me to test with him this morning.

1. Stafford shows as off line so no one could connect to them.
2. Spotsylvania's audio is completely garbled when I listen to them.

Just another example of when COMLINC was needed, it didn't work. They test a couple times a week but something in the chain fails when it is needed.

Another tool for planned events but I don't see it as being too useful for emergencies.

Stafford has the ability to program Spotsy but I'm not sure how many radios have that. They had some issues getting the new Motorola APX radios on the Spotsy Harris system but I believe that was worked out.

I just hate to see the state pour a lot of money into something, if there is something better out there. Again, needs and wants and what someone actually will use should be considered.

We also recently attempted to connect with Prince William, and they had to restart their equipment as it did not work.

What other programs are you using in place of COMLINC?

Current Methods of Communication with Neighbors

- MOU Process—Direct access to radio. Warrenton/Fauquier have relationships with many surrounding jurisdictions, and political cooperation is excellent. Culpepper, Fauquier, and Rappahannock Counties are also on the same system, so there is low demand for a RIOS COMLINC solution since there is already a Direct Access¹ technological pathway established.
- Fauquier also has direct access to Loudoun, Prince William, Stafford, Fairfax Culpeper an Rappahannock Counties, and a planned selected direct access with Arlington and DC (e.g. Presidential Inauguration) We will be adding direct access to Spotsylvania soon.
- Fauquier also gave Warren County Fire Dept. basic non-P25 radios to allow Direct Access to each other's systems and 8CALL/8TAC radio frequencies.
- Fauquier has no Direct Access with Clarke County. However, they are preparing multiband radios to overcome this obstacle. These multiband radios will provide a Direct Access method of communication to Clarke County. (VHF portable)
- Orange has started a radio system upgrade, and it is likely we will have direct communication with them in the near future.

Indirect Access² Methods of Communication

- Gateway Radio patch—From Culpeper to Orange and Madison Counties. (Motorola Mototrbo Technology). Gateway patch in this instance bridges the differences in technologies between Culpeper and Orange/Madison Counties. In addition, RIOS COMLINK is also an indirect access method.

¹ Direct Access is defined as talking directly from radio to radio (or radio system to radio system)

² Indirect Access is any method of communicating to other radios or radio systems other than Direct Access. For example, a gateway is an indirect access method bridging radios and radio systems together.

Other methods of Communication

- Warren County Sheriff Dept. is on a leased system which is being updated, making it difficult to communicate with outside jurisdictions.
- Fauquier County utilizes a VHF Radio Repeater at Viewtree Mountain, on the Warrenton training center—DOD site. The repeater pair is not on the National Interop frequencies, but it is an analog system which has the ability to patch radios together so that users on different systems or frequencies can communicate with Fauquier and vice versa.
- Phones and SIRS were used on WDBJ TV shooting. Units communicated and pulled suspect on I-66 once in Fauquier County.
- Fauquier also monitors 8CALL (and 8TAC's) NPSPAC frequencies during planned events.

Are there any Governance Issues that make using COMLINC problematic for your agency?

-No Response-

How could COMLINC change to be more efficient and effective for your use?

- Sustainment is an issue, because they do not have a regular maintenance schedule due to lack of funds.
- Management is another issue, as COMLINC appears to need patches or configuration updates when they try to use it.
- Other limitations of RIOS COMLINC: Although patches can be made, sometimes the radio coverage is not high quality because the radio transmitters and/or receivers are out of range (out of footprint) resulting in poor audio levels.
- There are lots of “weak” links in the chain, and we never know which sites are up and functional.
- Prince William and Spotsylvania are prefect examples. They “test” regularly and often fail.

What initial and ongoing training would help you better utilize COMLINC?

-No Response-



Interview Questionnaire

Agency Name: Frederick County Safety Commission

Agency Representative: LeeAnna Pyles

Phone: 540-665-6356

Email: lpyles@fcva.us

Are you using COMLINC today? In what capacity?

NO – Does not work with new radio system

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Shared Radio Channels

Incompatible with new radio system

Are there any Governance Issues that make using COMLINC problematic for your agency?

No

How could COMLINC change to be more efficient and effective for your use?

Unknown – needs to be fixed first

What initial and ongoing training would help you better utilize COMLINC?

None – they are trained



Interview Questionnaire

Agency Name: Fredericksburg Police Department

Agency Representative: Samantha Markey

Phone: 540-654-5911

Email: SMarkey@pd.fredericksburgva.gov

Are you using COMLINC today? In what capacity?

Yes, to marry our system to disparate systems if necessary for communications. Our surrounding agencies all currently have the capability to communicate through our Motorola radios though as we are on similar systems. But we do like to retain the ability to communicate in a situation where the radio systems are different.

Are there any Governance Issues that make using COMLINC problematic for your agency?

None that we are aware of

How could COMLINC change to be more efficient and effective for your use?

We currently work with several surrounding agencies to test the system a few times a week. However, the system is often not working at one or more agencies and the testing does not get completed as often as it should be.

What initial and ongoing training would help you better utilize COMLINC?

Initial user training that could be conducted semiannually to send new dispatchers to and refresher training annually or bi-annually would be nice. Getting our people out of the office and using the system at a central location, would be helpful. Showing the users how to use a fixed station as well as a mobile station would be helpful. The training could be rotated to different agencies to allow for the surrounding agencies to attend (i.e. training at a VSP Div I agency, next training session at VSP Div II, etc.)



Interview Questionnaire

Agency Name: Harrisonburg-Rockingham

Agency Representative: Jim Junkins

Phone: 540-434-2006

Email: jjunkins@hrecc.org

Are you using COMLINC today? In what capacity?

We use COMLINC on and off because of connectivity issues. Equipment issues caused us to upgrade the system on our own. Our system and its capabilities allow us to talk with our neighbors

We have used COMLINC during large mountain fires.

We use COMLINC to monitor some things.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We provide radios to VSP. We use 8TAC for local events.

Smith Mountain Lake incident – Intel of where the person was going was 30 minutes delayed. VSP alerted localities with old information, communicated by land line. There were three different VSP divisions involved which slowed down information. If VSP had a talkgroup linked to COMLINC we could have also linked a talk group and all would have had situational awareness.

Challenges: we have a trunked system and VSP has a trunked system and we cannot keep a patch up every day. We have to call the VSP dispatch center and they setup a patch.

Are there any Governance Issues that make using COMLINC problematic for your agency?

Lack of successes is lack of governance and SOPs.

How could COMLINC change to be more efficient and effective for your use?

An ISSI would be a good alternative, however there are code plug issues. Should consider CSSI to be the future standard for COMLINC.



Interview Questionnaire

Agency Name: Madison County

Agency Representative: Brian Gordon

Phone: 540-948-5144

Email: bgordon@madisonco.virginia.gov

Are you using COMLINC today? In what capacity?

Rarely – for test

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Switched or shared radio

Hard to setup and tune

Are there any Governance Issues that make using COMLINC problematic for your agency?

No

How could COMLINC change to be more efficient and effective for your use?

More user friendly, easier to tune

What initial and ongoing training would help you better utilize COMLINC?

Training on how to tune and ongoing training for all users



Interview Questionnaire

Date: 9/7/2018

Agency Name: Orange County

Agency Representative: Tina Ball

Phone: (540) 672-1234

Email: tball@orangecountyva.gov

Are you using COMLINC today? In what capacity?

Yes.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

-No Response-

Are there any Governance Issues that make using COMLINC problematic for your agency?

No

How could COMLINC change to be more efficient and effective for your use?

None

What initial and ongoing training would help you better utilize COMLINC?

We do in-house training.



Interview Questionnaire

Date: 9/25/2018

Agency Name: Page County

Agency Representative: ECC Director Christopher Molina

Phone: 540-743-6571

Email: ECCDIRECTOR@PAGESHERIFF.COM

Are you using COMLINC today? In what capacity?

No, we are not using the system.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We have not been using COMLINC because of a lack of training.

Are there any Governance Issues that make using COMLINC problematic for your agency?

No.

How could COMLINC change to be more efficient and effective for your use?

It would be beneficial for COMLINC to offer more training. We would also like to be able to know which agencies are using it.

What initial and ongoing training would help you better utilize COMLINC?

More regular training would be beneficial.



Interview Questionnaire

Agency Name: Winchester County

Agency Representative: Mike Christie

Email: mchristie@spotsylvania.va.us

Are you using COMLINC today? In what capacity?

No

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We use a radio. Other local jurisdictions are not using it either

Are there any Governance Issues that make using COMLINC problematic for your agency?

N/A

How could COMLINC change to be more efficient and effective for your use?

N/A

What initial and ongoing training would help you better utilize COMLINC?

None. Funding was generally all state

In general, nothing changed since July



Interview Questionnaire

Date: 8/15/18

Agency Name: Region 3

Agency Representative: Melissa Foster

Phone: 434-455-4285

Email: melissa.foster@lynchburgva.gov

Are you using COMLINC today? In what capacity?

Lynchburg is not using the system much, but they do use COMLINC with VSP for preplanned events. They've also integrated into the CAD computers, but SyTech did not want it integrated.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Initially Lynchburg city tried to incorporate COMLINC into daily life, and used daily in conjunction with Liberty University. However, LU later joined Lynchburg system as a customer, and COMLINC was no longer needed. The lack of use makes it difficult to get everyone connected. Many people at VSP do not know about COMLINC and do not have tech to use. In Campbell County it seems to never work and when SyTech comes in they say it is a setting issue, which makes the program overall unreliable. We are uncertain if Appomattox uses it at all.

Are there any Governance Issues that make using COMLINC problematic for your agency?

No, agreements are made easily because all parties want to talk together. Working with VSP is a little more challenging, as they needed to get approvals from IT to come thru the firewall.

How could COMLINC change to be more efficient and effective for your use?

The Sytech system is easy to use, but volume is always an issue.

They had ways to interoperate before RIOS and it was much more reliable, typically working 9 times out of 10.

What initial and ongoing training would help you better utilize COMLINC?

RIOS is already part of the initial dispatcher training, however when it is not used often operators forget how. Overall, there needs to be a reason for them to use the solution before training is truly an issue. We do need to better educate our dispatchers about the national interoperability channels.

General Notes

Where are the gaps in communications?

Lynchburg biggest communication gaps are with Campbell and Appomattox. Do not make the solution more difficult than it needs to be. Keep the stakeholders engaged.



Interview Questionnaire

Date: 9/12/2018

Agency Name: Amherst County

Agency Representative: Debbie Campbell

Phone: 434-946-9307

Email: djcampbell@countyofamherst.com

Are you using COMLINC today? In what capacity?

We do not use COMLINC because it is not working, and it has been problematic since its installation.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We are on a regional radio system, so which allows us to communicate with other localities.

For Nelson, we currently communicate via phone and we are looking to provide them our radios in the future.

We provide VSP our radios (which some will use and others will not) or use SIRS to communicate with them.

How could COMLINC change to be more efficient and effective for your use?

Primarily, we need a system that works. A statewide interoperability system would be very beneficial, given that it works reliably.

What initial and ongoing training would help you better utilize COMLINC?

Ongoing training is useful.



Interview Questionnaire

Date: 9/7/2018

Agency Name: Appomattox County

Agency Representative: Bobby Wingfield

Phone: 434-352-3950

Email: bobby.wingfield@appomattoxcountyva.gov

Are you using COMLINC today? In what capacity?

Yes, we are using COMLINC at three positions. We do not use the system regularly, but we do use it for special events, mainly our yearly Rail Road Festival.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

COMLINC is very cumbersome to use, which keeps us from using it regularly.

We use LE3 for incident interoperability with VSP and we also provide them several radios, but we cannot provide radios to all troopers.

Are there any Governance Issues that make using COMLINC problematic for your agency?

VSP must initiate a patch which causes difficulties as they often have inadequate staff to make a patch.

How could COMLINC change to be more efficient and effective for your use?

RIOS Light could be a good option for us, as all of our deputies have cell phones and we could use these in place of multiple radios.

COMLINC is a very good idea to simplify interoperability, but we need a system that is affordable and easy to use. We are limited as funding is not available from the County.

What initial and ongoing training would help you better utilize COMLINC?

We received adequate initial training, but when you do not use the system you forget how to use it.



Interview Questionnaire

Date: 9/7/2018

Agency Name: Augusta County

Agency Representative: Donna Good

Phone: 540-245-5503

Email: dgood@co.augusta.ca.us

Are you using COMLINC today? In what capacity?

Yes, we are using COMLINC for incidents with our surrounding localities. We currently have 5 positions using COMLINC in our Dispatch Center.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

-No Response-

Are there any Governance Issues that make using COMLINC problematic for your agency?

Obtaining permissions can be an issue, especially with VSP, and this can make it difficult to use COMLINC in an emergency situation.

How could COMLINC change to be more efficient and effective for your use?

An upgrade to RIOS Light would be great, as it would give us multiple ways to access COMLINC.

This interoperability program is important, and we believe it needs to continue. Our issue is we have no available funds to upgrade or maintain a COMLINC system.

What initial and ongoing training would help you better utilize COMLINC?

Refresher training would be good. One of our staff members has taken ownership of in house training and it is helpful for our dispatchers.

Regular roll calls would also be helpful.



Interview Questionnaire

Date: 9/7/2018

Agency Name: Buckingham County

Agency Representative: Jamie Shoemaker

Phone: 434-315-4397

Email: jshoemaker@buckinghamcounty.virginia.gov

Are you using COMLINC today? In what capacity?

We have COMLINC and do not use it all.

It is on one terminal and it is in the worst location possible. We were told to only use COMLINC in a large mutual agency event and we do not experience that situation.

The system has never been reliable and after multiple failed attempts, the dispatchers stopped trying to use it.

A specific problem we experienced when using the system to connect with surrounding localities was either we could not see them in the system or they could not see us, so a connection could not be made.

VSP technicians have been on site to correct the system issues several times, yet it continues to have problems.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

When we built our radio system, we had radios that are programmed with neighboring counties frequencies which allows us to communicate.

We use SIRS to communicate with VSP, and we have given the local VSP troopers our radios to contact us.

Are there any Governance Issues that make using COMLINC problematic for your agency?

Who made the statement about how the system can be used? Why should COMLINC only be used for large-scale incidents with multiple localities?

How could COMLINC change to be more efficient and effective for your use?

COMLINC needs to be in a convenient location, more dispatchers need to have access, and overall it need to work reliably.

COMLINC is a good idea, but we need to implement it better. For Buckingham, no funding is available from the County.

What initial and ongoing training would help you better utilize COMLINC?

Regular roll calls are beneficial, and both refresher training and regular exercises would be helpful.



Interview Questionnaire

Date: 9/14/2018

Agency Name: Campbell County

Agency Representative: JonAaron Evans

Phone: 434-332-9872

Are you using COMLINC today? In what capacity?

We use COMLINC when it works. We had five COMLINC positions, however as it is not operational most of the time, we had three positions removed and have two positions remaining.

Initially we had frequent testing, but we no longer have this testing.

Audio levels have never been correct and recently we had both VSP and SyTech trying to determine why and it was left without a solution as the problem is on the Lynchburg side. We understand the problem of a lack of resources; however, for us to use COMLINC it must work.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We use the phone to contact localities around us. We use SIRS or call on the phone to talk with VSP, and also VPS give troopers our portable radios.

Some Fire Departments have other localities radios in their vehicles.

Are there any Governance Issues that make using COMLINC problematic for your agency?

There are no real issues with governance because our region was very cohesive in the beginning.

How could COMLINC change to be more efficient and effective for your use?

Interoperability is critical with both state agencies and the localities around us. If we had a system that worked properly it would be a significant help to us.

What initial and ongoing training would help you better utilize COMLINC?

We received adequate training.



Interview Questionnaire

Date: 9/7/2018

Agency Name: Charlotte County

Agency Representative: Lisa Meyers

Phone: 4334-542-5141

Email: ccs0911@cchsheriff.com

Are you using COMLINC today? In what capacity?

No, we are not using COMLINC. The equipment was installed at one point and now it is disconnected.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We use a SIRS program, but we are in the process of switching over to UHF which allows us to talk to those around us.

We give VSP troopers and Game Wardens our radios in order to connect with them.

How could COMLINC change to be more efficient and effective for your use?

There needs to be less equipment and it must work reliably.

Overall COMLINC is a good idea, but it needs to be implemented better.

What initial and ongoing training would help you better utilize COMLINC?

We only had one training session, and not using the system regularly means the dispatchers forget how to use it.



Interview Questionnaire

Date: 8/17/18

Agency Name: Association of Public Safety Communications Officials (APCO),
Virginia Chapter

Agency Representative: Gabe Elias, Charlottesville – UVA – Albemarle County
Emergency Communications Center

Phone: 434-202-4060

Email: g Elias@albemarle.org

Contacted by: Cheryl Giggetts

Are you using COMLINC today? In what capacity?

Yes. Locally we have upgrade to RIOS LITE. We used COMLINC in the recent large public safety operation in the Charlottesville:

A field-deployed RIOS ran and kept critical (and operational/used) patches up for over 50 hours. Sytech supported it remotely and on-site. The NIFOG interoperability channels are the real thing and they worked. The Cache teams carried their own weight and mine this weekend. We integrated VSP, state and local public safety, an EOC, ICC, ECC, and multiple bases, public service and transit, general government, amateur radio... all across a large (22 channel) communications plan, staffed and supported by the VA Cache and VSP Comms techs. They were extremely hard workers, keen problem solvers, excellent coaches, and just a great group to integrate with and spend time with. I am in awe of what we can do in Virginia when we work together.

Day-to-day, we occasionally use RIOS to connect to surrounding agencies. We use it for planned events, such as dignitary visits, which involve VSP.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

- Some localities do not use COMLINC because they have found other ways to interoperate. They may distrust state-driven solutions (which we can work through

by open communication and planning), but also distrust unfamiliar technology because it has the potential to break. COMLINC needs a champion, and the system should be upgraded and sustained.

- Frustrated the COMLINC system is not used more consistently. Can be due to a lack of awareness of the systems capabilities and limitations. Although COMLINC solves the interconnectivity problem, it does not solve the coverage footprint problem.
- FirstNet—EPTT, band 14 technology had initial setup issues in local event because the commercial RAN was too powerful but was resolved by AT&T techs and worked. The system should not be only about cost and preemption, what sets it apart? FirstNet Authority gives authority to Public Safety, which we can influence. This is a unique model.
- Field users had difficulty finding national interoperability channels on radios but were trained.
- VA APCO's desire for COMLINC: a system that enables people to communicate as needed on demand; telecommunicators shouldn't be burdened with the responsibility of others, it should be a simple seamless process that doesn't complicate their job.
- Working with VSP Division dispatchers and supervisors is critical to success.
- VSP successfully operated outside of the box during Charlottesville events.

How could COMLINC change to be more efficient and effective for your use?

- Our goal is to interop more closely with surrounding localities. The system should be inherently secure but not overly complex, ultimately creating broadband talk paths. It should be an intuitive, problem solving solution which enables day-to-day interop across the geographic region. We will advance by supporting experiments and sharing lessons.
- FOOTPRINT is a limiter. We can either build an LMR overlay across the entire state (not feasible) or leverage broadband as the coverage extender/enabler and build interoperability over and within that.
- Separate Tech and Operations, and a consistent schedule of monthly training would make the process distinct and familiarize the users with the COMLINC system.
- The localities' approach needs to change, we need to get enough people to share the vision. By emphasizing what Interop will do for us, we can shift ourselves toward embracing interoperability technologies. One way forward may be a standards-based Interoperability network, with localities/regions choosing ways to connect to it, but following standards. (ESINET Model - Localities in Northern Virginia selected ATT, which is recommended but not required) Should we use the ESINET model? ISSI? The Florida model-Wildlife Surcharge?
- There is an ISSI link to FirstNet, but we need to agree on how to use it.

- Define an interoperability standard, limit costs, and keep ongoing costs low.

GENERAL NOTES

- We need to consistently fund interop, not just the equipment but also the program.
- We already have “Structured interoperability,” but our goal is a seamless, reliable, secure encryption that reaches back to the home agency, capable of remote configuration.
- Could we develop something in the middle, one ISSI that links all localities in a region and each region ISSI links into COMLINC, build roaming in, use broadband when we do not have coverage, statewide common talk groups (BTC 1-64),



Interview Questionnaire

Date: 9/12/2018

Agency Name: Fluvanna County

Agency Representative: Michael Grandstaff

Phone: (434) 591-2005

Email: mgrandstaff@fluvannasheriff.com

Are you using COMLINC today? In what capacity?

We have not been using COMLINC over the last 2 years because it became a band width hog, and we only had a 20meg pipe.

It is also difficult to have anyone come out to work on the system to get it up and running.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We use a P25 Phase II system to patch to the systems around us, and we also have all of the interoperability channels in our radios. VSP troopers check out a radio each morning or we use SIRS to communicate.

We have 800 MHz control stations on our towers.

Are there any Governance Issues that make using COMLINC problematic for your agency?

-No Response-

How could COMLINC change to be more efficient and effective for your use? What initial and ongoing training would help you better utilize COMLINC?

-No Response-



Interview Questionnaire

Date: 9/12/2018

Agency Name: Halifax County

Agency Representative: Wendy Jones

Phone: (434) 476-1784

Email: hce911@co.halifax.va.us

Are you using COMLINC today? In what capacity?

We have four positions and they are not used, because no one know how to use the system properly. We were also told by management that others do not want us on their channels.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We do not communicate with those around us, because everyone is on a different band. We use SIRS to communicate with VSP and we issue them portable radios.

We are trying to replace our radio system, but funding is difficult. We are looking at using Moto Turbo to upgrade our radio system.

Since South Boston police received a grant and went digital, we have not had car to car communications.

How could COMLINC change to be more efficient and effective for your use?

We think COMLINC is a great idea and is needed for the Commonwealth, it just needs to be better implemented.

What initial and ongoing training would help you better utilize COMLINC?

We had some initial training but we need more. If we could have in depth training and exercises, we would use RIOS.



Interview Questionnaire

Agency Name: Lunenburg County

Agency Representative: Donald Penland

Phone: 434-696-4452

Email: dpenland@lunenburgva.net

Are you using COMLINC today? In what capacity?

No – do not have this equipment

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Radio System Patch

Do not have COMLINC

Are there any Governance Issues that make using COMLINC problematic for your agency?

No

How could COMLINC change to be more efficient and effective for your use?

N/A

What initial and ongoing training would help you better utilize COMLINC?

N/A



Interview Questionnaire

Date: 9/18/2018

Agency Name: Mecklenburg County

Agency Representative: Ben Duncan

Phone: (434) 738-0029

Email: ben.duncan@mecklenburgva.com

Are you using COMLINC today? In what capacity?

We have COMLINC installed and integrated into our consoles, but we have only used one time in 3.5 years for an event with Hells Angels. In that instance, VSP created the links.

We need someone to provide us training on how we can use COMNLINC.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Currently we provide VSP with our portable radios, or call them on the phone.

We use SIRS or phone to contact surrounding localities.

Recently, we had an annual event in Clarksville and we utilized the cache out of Lunenburg to allow others to operate on our system.

We are currently implementing a new DMR system and we need to be able to talk with other counties.

Are there any Governance Issues that make using COMLINC problematic for your agency?

-No Response-

How could COMLINC change to be more efficient and effective for your use?

We could use interoperability within our County and with Counties around us, especially with Fire. Interoperability is critical and having a tool that we know how to use would be very beneficial.

What initial and ongoing training would help you better utilize COMLINC?

We need additional training, and a schedule of regular exercises would be helpful.



Interview Questionnaire

Date: 10/1/2018

Agency Name: Waynesboro

Agency Representative: Gary Critzer

Phone: 540-942-6698

Email: critzergp@ci.waynesboro.va.us

Are you using COMLINC today? In what capacity?

The system did not work for quite some time, so we upgraded it ourselves within last two years.

We use COMLINC with partners to the east of us, and also share frequencies with Stanton and Augusta.

On Afton Mountain we are in the process of installing a radio connected to an ACU 2000. It can be used on 700/800/VHF/UHF, and will either connect back to Waynesboro or Charlottesville RIOS, which will allow everyone to have access. VDOT may also include a link to their STARS talkgroups.

Our upgrades included RIOS LiTE which we provided to the regional drug task force and others that benefit from using a communications device other than an LMR radio. Video feature and logging are very useful.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We use SIRS to communicate with VSP. Overall, VSP seems to be sensitive about others accessing their system.

Are there any Governance Issues that make using COMLINC problematic for your agency?

We made the governance over-complex, as there are many committees, leading to a lot of talk and little action.

How could COMLINC change to be more efficient and effective for your use?

The equipment needs to be upgraded because the systems are old and failing. The current version is very stable and works well.

Smartphone use has been significant, so COMLINC should continue to pursue advancements in this area.

The system needs to be maintained with readily available resources.

What initial and ongoing training would help you better utilize COMLINC?

We were provided with very little initial training. Significantly, there was no preparation of how we could use COMLINC.

We should have regular exercises in the regions using RIOS, which can be part of any state exercise.

There needs to be a regular schedule of rolls calls and tests, and a responsible entity (maybe VDEM) needs to monitor and ensure these occur.



Interview Questionnaire

Date: 9/13/2018

Agency Name: Tazwell County

Agency Representative: Derrick Ruble

Phone: (276) 385-1727

Email: Derrick.Ruble@tcsova.org

Are you using COMLINC today? In what capacity?

We started using COMLINC several years ago, and we want to establish day-to-day use by our dispatchers. We currently have 12 frequencies and only 6 or 8 are allowed on COMLINC, so our use is limited. In the past when we have needed to use the system, the traffic has been on a channel that was not connected to COMLINC.

We use COMLINC to monitor surrounding localities if they alert us to an event, and we have used it to link incompatible channels through telephone.

We use fiber as our connection, and we intentionally setup COMLINC the way we need it so it is easy for us to use. The system went down once and it was corrected.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We use the interoperability channels, and we are working to program into all systems in the region.

Our current technology is comprised of 5 RIOS kits, and 1 radio kit (700, 800, UHF, VHF, Low Band) which allows us to patch disparate systems.

We give portable radios to the VSP troopers. In the case of an event, our dispatcher will call the VSP dispatcher and then VSP will monitor the incident on COMLINC.

Are there any Governance Issues that make using COMLINC problematic for your agency?

Right now there is no written governance agreement. We are currently working on a regional communications plan.

Connecting with VSP is an important need in our locality. VSP will not allow us to connect to their channels, so we are not allowed to link or listen to them.

If we were able to monitor VDOT, VDEM, and Department of Forestry, for instance, the Region 4 use of COMLINC would increase dramatically.

How could COMLINC change to be more efficient and effective for your use?

We need to connect to VDOT, VDEM, DGIF, and Forestry, and the option for monitoring from the dispatcher would be useful and save resources.

Dispatch to Dispatch communication would be useful, even if we do not link radio to radio. It would also be great to link to West Virginia.

We should set up a mobile setup to be placed in a mobile command post or communications trailer.

RIOS Lite will be a good addition.

We want a VHF region wide interop channel which can be used in COMLINC, and we would like to run video over COMLINC as well.

What initial and ongoing training would help you better utilize COMLINC?

Very little training has been provided.

Some 911 Centers are very short staffed, and some directors are even dispatching. It is difficult to find resources to send dispatchers to training and still staff the centers.

Augmenting in-person training with online training will be very helpful to our region.



Interview Questionnaire

Date: 8/29/2018

Agency Name: Bland County

Agency Representative: Jenna Dunn

Phone: (276) 688-4641

Email: jdunn@bland.org

Are you using COMLINC today? In what capacity?

We do not use COMLINC because it no longer works.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We are currently using telephones to connect. COMLINC is not working, it went down for us after a radio upgrade and we have not been able to get it back up.

Are there any Governance Issues that make using COMLINC problematic for your agency?

No

How could COMLINC change to be more efficient and effective for your use?

It could be improved by fixing it to make it usable.

What initial and ongoing training would help you better utilize COMLINC?

We were fine with training when the system was still working.



Interview Questionnaire

Date: 8/29/2018

Agency Name: Bristol County

Agency Representative: Charles Robinette

Phone:

Email: crobinette@bristolva.org

Are you using COMLINC today? In what capacity?

We are using COMLINC to connect with the surrounding agencies.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We are using a RIOS system to connect to Washington County.

Are there any Governance Issues that make using COMLINC problematic for your agency?

No

How could COMLINC change to be more efficient and effective for your use?

It could be improved by providing a link to more jurisdictions.

What initial and ongoing training would help you better utilize COMLINC?

Periodic re-training and consistent training updates would make COMLINC more effective for us.



Interview Questionnaire

Date: 9/28/18

Agency Name: Buchanan County 911

Agency Representative: Sonny Riggsby

Phone: (276) 935-8343

Email: sonny.riggsby@buchanancounty-va.gov

Are you using COMLINC today? In what capacity?

No, we are not using COMLINC.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We use a system of radio patches and telephone to interoperate.

Are there any Governance Issues that make using COMLINC problematic for your agency?

There are none.

How could COMLINC change to be more efficient and effective for your use?

-No Response-

What initial and ongoing training would help you better utilize COMLINC?

-No Response-



Interview Questionnaire

Agency Name: Dickenson County

Agency Representative: Matt Slempp

Phone: 276-926-6330

Email: mslempp@dc911.org

Are you using COMLINC today? In what capacity?

No – Equipment is not installed

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

AZTEC Console

Do not have COMLINC installed

Are there any Governance Issues that make using COMLINC problematic for your agency?

No

How could COMLINC change to be more efficient and effective for your use?

N/A

What initial and ongoing training would help you better utilize COMLINC?

N/A



Interview Questionnaire

Date: 8/31/2018

Agency Name: Giles County

Agency Representative: John Davis

Phone: (540) 921-3842

Email: jdavis@gilessheriff.org

Are you using COMLINC today? In what capacity?

Never, no drills.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

SIRS radio

Are there any Governance Issues that make using COMLINC problematic for your agency?

No

How could COMLINC change to be more efficient and effective for your use?

Training

What initial and ongoing training would help you better utilize COMLINC?

Operator Training



Interview Questionnaire

Date: 8/15/18

Agency Name: Lee County

Agency Representative: Alan Bailey

Phone: 276-346-7791

Email: abailey@lee911.org

Are you using COMLINC today? In what capacity?

No equipment currently not installed due to other radio and data center equipment upgrades.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Programed into new Digital Radio system to Scott & Wise Counties. Disconnect due to upgrade

Are there any Governance Issues that make using COMLINC problematic for your agency?

The other upgrades and not having enough room for all the new equipment.

How could COMLINC change to be more efficient and effective for your use?

Room to hook up equipment

What initial and ongoing training would help you better utilize COMLINC?

Refresher courses



Interview Questionnaire

Agency Name: City of Norton

Agency Representative: James Lang

Phone: (276) 679-1211

Email: jamesl@nortonva.org

Are you using COMLINC today? In what capacity?

Yes, we use COMLINC. We participate in testing. Used with VSP to deal with motorcycle gang issue.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Limited by the number of other jurisdictions that use COMNLINC.

How could COMLINC change to be more efficient and effective for your use?

Sheriff just converted to digital and we lost communications with them and COMNLINC could be useful.

The equipment needs to be where it is easy to use.

What initial and ongoing training would help you better utilize COMLINC

We could use more training and hands on exercises.



Interview Questionnaire

Date: 8/29/2018

Agency Name: Pulaski County

Agency Representative: Chris Akers

Phone: (540) 980-7858

Email: cakers@pcva911.org

Are you using COMLINC today? In what capacity?

Very Seldom

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We are using a local Radio Mutual Aid Channel, with no connection to state police.

Are there any Governance Issues that make using COMLINC problematic for your agency?

No

How could COMLINC change to be more efficient and effective for your use?

The system should be more stable.

What initial and ongoing training would help you better utilize COMLINC?

Local staff training.



Interview Questionnaire

Date: 8/30/2018

Agency Name: Scott County

Agency Representative: Janice Jennings

Phone: (276) 386-7220

Email: jjennings@scottcountyva.com

Are you using COMLINC today? In what capacity?

We rarely use COMLINC, and when we do it is just to test the system.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We manually transfer via telephone or computer.

Are there any Governance Issues that make using COMLINC problematic for your agency?

No

How could COMLINC change to be more efficient and effective for your use?

It would be helpful if you built it in a CAD dispatch system, as it would be easier to use with an ICON on the dispatch system instead of supporting a separate system.

What initial and ongoing training would help you better utilize COMLINC?

There should be training hosted every 6 months for new dispatchers and as a refresher for others.



Interview Questionnaire

Agency Name: Smyth County

Agency Representative: Shannon Williams

Phone: 276-706-8314

Email: smyth911@smythcounty.org

Are you using COMLINC today? In what capacity?

No

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Shared Frequency

Are there any Governance Issues that make using COMLINC problematic for your agency?

No

How could COMLINC change to be more efficient and effective for your use?

Does not meet the needs for our county, radio systems meet our needs.



Interview Questionnaire

Agency Name: Twin County

Agency Representative: Jolena Young

Phone: 276-236-5122

Email: jyoung@galaxva.com

Are you using COMLINC today? In what capacity?

Test to State Police, Mobile sometimes used for planned or unplanned incidents.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Mutual Aid already programmed in.

Unified Command

Are there any Governance Issues that make using COMLINC problematic for your agency?

No

How could COMLINC change to be more efficient and effective for your use?

Needs to be same system as day to day operations. Not a separate system

What initial and ongoing training would help you better utilize COMLINC?

None



Interview Questionnaire

Agency Name: Wise County

Agency Representative: Nancy Mullins

Phone: 276-328-3756

Email: nmullins@wiseco.net

Are you using COMLINC today? In what capacity?

Rarely

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Radio between agency's, State Police RIOS system, CAD with Lee County, Dickenson County, and City of Norton

Not connected to the main channel



Interview Questionnaire

Agency Name: Wythe County

Agency Representative: Darlene Lang

Phone: 276-223-4533

Email: dmlang@wytheco.org

Are you using COMLINC today? In what capacity?

Yes, we are using COMLINC. We patch channels, with other counties, for pursuits. (most recently with Bland County).

We also test with State Police. Regularly we contact VSP via landline.

We have SIRS on our consoles, but do not use.

VSP sends a tech every 6 months to check COMLINC and when it went down several months ago VSP came quickly and fixed.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

N/A

Are there any Governance Issues that make using COMLINC problematic for your agency?

No issues.

How could COMLINC change to be more efficient and effective for your use?

It is extremely useful, but we do not use every day. Long transport could be a good use of COMLINC to track them along route. Good to link to DGIF and VDOT.

What initial and ongoing training would help you better utilize COMLINC?

Do not use often so we have training challenges. Exercises would be helpful.



Interview Questionnaire

Date: 9/7/2018

Agency Name: York County / SIEC Chair

Agency Representative: Terry Hall

Email: hallt@yorkcounty.gov

We have a division in the Commonwealth some use it as their interoperability and other have it just because it was installed. Many of the installed system do not work.

State agencies are using COMLINC in place of a radio system.

Are you using COMLINC today? In what capacity?

We have COMLINC, but we do not use it for anything other than testing. We are no longer using SIRS.

Eastern Shore is using COMLINC as a patch.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We gave VSP radios to interoperate on the York system. We interoperate on a daily basis using radios they check out, which is not an efficient system. The need for interoperability is there.

Hampton refuses to use COMLINC as they have ORION. York system is truly interoperable. Suffolk has a bus that has COMLINC, but they do not use it on a daily basis.

Are there any Governance Issues that make using COMLINC problematic for your agency?

There is a governance issue with VSP, which needs to be addressed. VSP does not want localities on their channels, which counteracts interoperability. Also, VSP does not want their troopers off their channels because their dispatches will lose track of them.

Technology is an issue that can be solved. VSP has a solution available to contact the lion's share of localities in Virginia, but they are very selective about who can contact them through this system.

How could COMLINC change to be more efficient and effective for your use?

We need interoperability more than ever, and our region is further away from interoperability it has been before. I believe a COMLINC program is a necessity, and it will be more important in the future than it is now. There is a need for interoperability in the Commonwealth, and we should fund it.

The solution must be robust, usable for day-to-day operations and for incidents, and sustainable. We need to acquire funding for all aspects of the project. (equipment, installation, upkeep, etc.)

If matching funds are required by the localities, it is likely no one in Hampton Roads will participate. The ones that cannot afford to participate are the ones who need it the most.

What initial and ongoing training would help you better utilize COMLINC?

Training is essential and frequent exercises are critical.



Interview Questionnaire

Date: 9/25/2018

Agency Name: Brunswick

Agency Representative: Devon Clary

Phone: (434) 532-8239 x303

Email: Dclary@brunswickso.org

Are you using COMLINC today? In what capacity?

We have COMLINC technology but we don't use it. With our upcoming radio system upgrade, we may turn to using COMLINC more, but right now it's sitting in dispatch unused.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We use SIRS to connect to both VSP and other localities.

We don't have a need to use COMLINC at this time. Our current system meets our needs, and it has been so long since we used the system, we don't know how to operate it anymore.

Are there any Governance Issues that make using COMLINC problematic for your agency?

Not that I am aware of.

How could COMLINC change to be more efficient and effective for your use?

Any opportunities for interoperability would be useful.

COMLINC worked to a point, but we do not have the need for it at present. Our current solution meets our interoperability needs.

With the upgrades we have planned in the coming year, we may need to transition over to using COMLINC more regularly.

What initial and ongoing training would help you better utilize COMLINC?

We would benefit from face to face and hands on training, so we know everyone is proficient with using the system. We would take part in additional training exercises like roll calls as well.



Interview Questionnaire

Date: 8/9/2018

Agency Name: Eastern Shore 911 PSAP

Agency Representative: Jeff Flournoy

Phone: (757) 787-0909

Email: JFlournoy@co.northampton.va.us

Are you using COMLINC today? In what capacity?

No, we are not primarily using Sytech RIOS at this time. We have 8 slots or patch capabilities, but only 6 of 8 work well. The 6 working channels are tested from time to time, but they are never utilized much. Sytech sent personnel out to the 911 Dispatch center in an attempt to resolve the issues with the 2 problematic channels, but there are no results as of August 9th, 2018.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Accomack is in the process of developing a Memorandum of Understanding with Worcester County, Maryland to allow both responding Accomack and the Maryland Fire/EMS units to communicate within and outside of each other's jurisdictions.

How could COMLINC change to be more efficient and effective for your use?

We would like to see COMLINK integrated into our main 911 Dispatch console, because it would lead to SyTech RIOS (COMLINC) becoming a part of the dispatch routine instead of sitting on the side away from the day to day activities.

We would also like to know if COMLINC can be tied in as a backup to the current console.

What initial and ongoing training would help you better utilize COMLINC?

-No Response-



Interview Questionnaire

Date: 9/7/2018

Agency Name: Franklin City

Agency Representative: Bruce Edwards

Phone: 757-562-8696

Email: bedwards@franklinpolice.org

COMLINC is a good idea and should be implemented. Our biggest need is to upgrade our radio system for Citywide operability, and we currently have no available funding to support a system like COMLINC.

Are you using COMLINC today? In what capacity?

No, we were never offered COMLINC, although we did request it a year ago and never heard back. This was through or during a meeting of the Hampton Roads Planning District Radio Interoperability and ORION Steering Committee meeting.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We are no longer using SIRS as it was too noisy. We use telephone to contact VSP, along with VTAC and VCALL. We use ORION and direct radio contact with Southampton and Isle of Wight. ORION is used for Command and Control and not for direct communications. Fire & Rescue use the statewide mutual aid channels and also use direct radio contact with Southampton and Isle of Wight. We have no funds to implement COMLINC.



Interview Questionnaire

Date: 9/28/2018

Agency Name: Gloucester County

Agency Representative: Liz Simmons

Phone: 804-693-1378

Email: lsimmons@gloucesterva.info

Are you using COMLINC today? In what capacity?

I am uncertain. York County handles our equipment.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

I do not know.

Are there any Governance Issues that make using COMLINC problematic for your agency?

There are none.

How could COMLINC change to be more efficient and effective for your use?

-No Response-

What initial and ongoing training would help you better utilize COMLINC?

-No Response-



Interview Questionnaire

Date: 9/18/2018

Agency Name: Greenville County

Agency Representative: Ryan Aerni

Phone: 434-348-4116

Email: raerni@greenvillecountyva.gov

Are you using COMLINC today? In what capacity?

We have COMLINC and use it during emergencies. Our hardware is very outdated and problematic. The system is used as instant recall on radio traffic.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We use SIRS, and share channels to connect with surrounding localities. We exclusively use COMLINC to contact VSP.

Are there any Governance Issues that make using COMLINC problematic for your agency?

-No response-

How could COMLINC change to be more efficient and effective for your use?

For our locality, interoperability is important but not something we will use every day.

What initial and ongoing training would help you better utilize COMLINC?

We need additional training and having exercises would be helpful. Online training would also be helpful.



Interview Questionnaire

Date: 9/12/2018

Agency Name: Hampton Police Department

Agency Representative: Lt. Michael Wisniewski

Phone: (757) 727-6313

Email: mwisniewski@hampton.gov

Statewide interoperability is very important, and we would take part in any interoperability state initiative.

Are you using COMLINC today? In what capacity?

We are not familiar with COMLINC at all. It is not a system we have heard of before, and we do not use in any capacity.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We are using an ORION radio program for regional interoperability. The system is tried and true and meets our regional needs for interoperability.

Are there any Governance Issues that make using COMLINC problematic for your agency?

-No Response-

How could COMLINC change to be more efficient and effective for your use? What initial and ongoing training would help you better utilize COMLINC?

-No Response



Interview Questionnaire

Date: 9/18/2018

Agency Name: Isle of Wight

Agency Representative: Ronald Bryan

Phone: 757-365-6274

Email: rbryan@isleofwightus.net

Are you using COMLINC today? In what capacity?

We do not have COMLINC.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We have SIRS radios, but distance makes it difficult to talk with VSP. Instead, we currently contact VSP on phone. We also have access to ORION, but do not use it. That system is currently down due to air conditioning issue.

We are upgrading to 800 MHz which will be operational by the end of the year.

Are there any Governance Issues that make using COMLINC problematic for your agency?

No issues.

What initial and ongoing training would help you better utilize COMLINC?

Training and exercises will be helpful.



Interview Questionnaire

Agency Name: Matthews County

Agency Representative: Christian Foster

Phone: 804-725-2174

Email: cfoster@matthewscountyva.gov

Are you using COMLINC today? In what capacity?

No – Do not have this equipment

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Radio Patching

Do not have COMLINC

Are there any Governance Issues that make using COMLINC problematic for your agency?

No

How could COMLINC change to be more efficient and effective for your use?

N/A

What initial and ongoing training would help you better utilize COMLINC?

N/A



Interview Questionnaire

Date: 9/21/2018

Agency Name: Middlesex County

Agency Representative: Eileen Koehl

Phone: (804) 758-2779

Email: e.koehl@co.middlesex.va.us

Are you using COMLINC today? In what capacity?

We do not have COMLINC.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We use the phone to contact other localities and VSP.

We used SIRS to reach VSP in the past, but have lost that with our new 700 MHz system. We are working on re-establishing this lost interoperability.

Are there any Governance Issues that make using COMLINC problematic for your agency?

-No Response-

How could COMLINC change to be more efficient and effective for your use?

Having an interoperability tool would be useful, if those around us also have the same tool.

What initial and ongoing training would help you better utilize COMLINC?

-No Response-



Interview Questionnaire

Date: 9/12/2018

Agency Name: Sussex Sheriff's Department

Agency Representative: Crystal Wyche

Phone: (434) 246-5361 x238

Email: cwyche@sussexso.com

Are you using COMLINC today? In what capacity?

We have COMLINC, but it is not being used. When the system was first installed years ago, we were trained to use it but there was no further training. At this point, only 2 out of our 10 dispatchers remain who know how to use it, and even they would need a refresher on how to operate it. As there was no retraining on the system, it fell out of use and now it is never switched on.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We use telephone and a SIRS system to interoperate.

The training is the key reason we don't use COMLINC. We did not use the system often even when it was new, so even those of us who know how would need a refreshed.

Are there any Governance Issues that make using COMLINC problematic for your agency?

Not that I'm aware of.

How could COMLINC change to be more efficient and effective for your use?

COMLINC is just another tool for us to use. I don't find anything wrong with the system the way it is, but it should be incorporated into daily use.

What initial and ongoing training would help you better utilize COMLINC?

Initial training was excellent, but we happened to have an older staff who were really used to the old ways of connecting with other localities so we didn't utilize it often. There needs to be more frequent training to cover system updates and we think that new hires would perform better on the system if they were trained by your staff than by veteran dispatchers here.



Interview Questionnaire

Date: 9/17/2018

Agency Name: Virginia Beach

Agency Representative: Stephen Williams

Phone: (757) 385-8089

Email: SCWillia@vbgov.com

Are you using COMLINC today? In what capacity?

We do not have COMLINC.

Localities feel like they already give a lot of money to the state and finding more money to fund an interoperability system would be difficult.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We use ORIEN and test the system daily. ORION has reached capacity and if everyone needed to use it at once, there would be issues. In addition, the equipment is old and needs replacing.

We communicate with VSP and VDOT over the phone. We also connect to Chesapeake, Norfolk, and Virginia Beach through the Tri-city dispatch for Fire.

We are preparing to encrypt our law enforcement communications, and this will create interoperability challenges.

Are there any Governance Issues that make using COMLINC problematic for your agency?

It is difficult to agree on how to use an interoperability system.

We are embarking on a shared CAD system and working thru the governance is challenging.

How could COMLINC change to be more efficient and effective for your use?

We could use statewide interoperability, there are issues with the willingness of localities to use such a system and finding funding.

What initial and ongoing training would help you better utilize COMLINC?

Training and ongoing exercises will be important.



Interview Questionnaire

Date: 8/29/2018

Agency Name: Region 6, Roanoke County

Agency Representative: Rodney Thompson

Phone: 540-777-8556

Email: rthompson@roanokecountyva.gov

Are you using COMLINC today? In what capacity?

Yes; Roanoke City, Roanoke County, Botetourt, City of Salem, County of Rockbridge, County of Craig, County of Franklin and the Virginia State Police all actively use COMLINC. We perform a roll call daily with Roanoke City, Roanoke County, City of Salem, and Franklin County, but VSP does not participate in the daily roll call.

More active use in the last 5 years.

The New River Valley is not using COMLINC. They intended to use the system, but it has been sitting in an equipment room.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

The Commonwealth used Motobridge, with a T1 requirement that no one could afford, but Motobridge is now at the end of its life.

We have WAVE and an ISSI.

There is a place for the Radio Cache.

Roanoke Valley Radio system Includes City of Roanoke, County of Roanoke, City of Salem, County of Franklin, Town of Vinton, RVRFS has an ISSI link that could be used to link adjacent localities systems together, including VSP.

Are there any Governance Issues that make using COMLINC problematic for your agency?

The governance part was implemented later in the process of adopting COMLINC and was not well coordinated prior to Stafford County.

We need to educate localities as to what an interoperability tool can do for them, and we need maximum buy-in to get localities to use any system.

We need to have the Emergency Management Region meetings coordinated with the RPAC-I meetings, this will elevate coordination and cooperation.

How could COMLINC change to be more efficient and effective for your use?

Some shortcomings of the current system are the fact that we can't use outside of each Localities current footprint, we don't have Rios Lite or PTT app on the current system. Current RIOS equipment is too old and sometimes dysfunctional, and we do not realize this until we go to use it.

Interoperability Products need to use a standard similar to P25, so it can be used with any LMR system or other Interoperability solution, something similar to SIP protocol.

What initial and ongoing training would help you better utilize COMLINC?

The onsite trainings were very successful, but this was years ago, and it was not continued.



Interview Questionnaire

Date: 9/14/2018

Agency Name: Alleghany County

Agency Representative: Ryan Muterspaugh

Phone: 540-863-6600

Email: rmuterspaugh@co.alleghany.va.us

Are you using COMLINC today? In what capacity?

We do not have COMLINC.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We provide VSP with portable radios and they have the chargers mounted in the vehicle. We provide DCR, Douthat State Park, with portable radios so we can communicate, and also exchange portable radios with Forest Services. All Fire & Rescue have UHF radios that allow them to communicate with surrounding localities.

Our new system will take us off 800 which will promote interoperability with our surrounding localities as they are all on UHF.

How could COMLINC change to be more efficient and effective for your use?

Both Alleghany and the City of Covington will benefit from increased interoperability with state agencies.



Interview Questionnaire

Date: 9/12/2018

Agency Name: Botetourt County

Agency Representative: Nicole Manspile

Phone: 540-928-2211

Email: nmanspile@botetourtva.gov

Are you using COMLINC today? In what capacity?

Yes, we have three RIOS positions which we use for daily testing. However, we only use COMLINC occasionally for interoperability purposes.

We often call adjacent localities to share information. We used COMLINC, during an emergency situation with a mountain fire, to patch Botetourt Fire and Bedford Fire and the system worked well.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Some localities have their frequencies programmed into our radios. We also use phones to contact VSP.

Are there any Governance Issues that make using COMLINC problematic for your agency?

VSP dispatchers are unable to consistently patch for us, so we were instead required to hand out radios to facilitate interoperability during a manhunt.

How could COMLINC change to be more efficient and effective for your use?

COMLINC is a good concept and we see opportunities to work more with other localities in the future.

If we are required to support with some funding we would try.

What initial and ongoing training would help you better utilize COMLINC?

Training was adequate.



Interview Questionnaire

Date: 9/4/2018

Agency Name: Craig County

Agency Representative: Jim Cady, Robert Wrzosec

Phone: (540) 864-5127

Email: craige911@tds.net

Are you using COMLINC today? In what capacity?

We have the equipment but we really never started using it. It is currently in the back server room.

Dispatch has never been introduced to COMLINC because it didn't function for us.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

COMLINC is cumbersome to use. We have a regional committee that met every month or so and the biggest complaint from the smaller municipalities was how time consuming and difficult it is to create a patch. For those smaller localities with only one dispatcher on duty, the system is just not practical.

COMLINC also requires a dedicated internet line which the county cannot fund.

We are currently using VCIN, telephone, and radios to communicate with our surrounding localities.

Overall, COMLINC it is not designed for speed and simplicity.

Are there any Governance Issues that make using COMLINC problematic for your agency?

-No response-

How could COMLINC change to be more efficient and effective for your use?

The vendor promised to create premade patches and that never happened, so supplying those would make the system more efficient for us.

There is a need for Interoperability in the Commonwealth and we have spent a lot of money to address the issue, but we are not much further along than we were 10 years ago.

What initial and ongoing training would help you better utilize COMLINC?

Initially, COMLINC was installed at dispatch desk and a dispatcher was trained. This training was sufficient as the system is rarely used.



Interview Questionnaire

Date: 9/27/2018

Agency Name: City of Danville

Agency Representative: Michael Gobble

Phone: 434-799-5206

Email: Michael.gobble@danvilleva.gov

Are you using COMLINC today? In what capacity?

No, we originally implemented a CISCO solution, but it is no longer in use.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We use SIRS to talk with VSP, and also use the National Interoperability channels such as VTAC and UTAC.

We share radio channels with Pittsylvania County.

Are there any Governance Issues that make using COMLINC problematic for your agency?

-No response-

What initial and ongoing training would help you better utilize COMLINC?

We need training and ongoing exercises to become proficient with the system.



Interview Questionnaire

Date: 9/28/2018

Agency Name: Floyd County

Agency Representative: Kevin Sowers

Phone: (540) 745-9313

Email: ksowers@floydcova.org

Are you using COMLINC today? In what capacity?

No, we do not have equipment to use COMLINC

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We interoperate through radio patching, but we do not have a connection to Roanoke County, which would be helpful. We don't use COMLINC because we don't have it.

Are there any Governance Issues that make using COMLINC problematic for your agency?

There are no issues.

How could COMLINC change to be more efficient and effective for your use?

-No Response-

What initial and ongoing training would help you better utilize COMLINC?

-No Response-



Interview Questionnaire

Date: 9/14/2018

Agency Name: Highland County

Agency Representative: Captain Ronald Wimer

Phone: (540) 468-1210

Email: hcsowimer@htcnet.org

Are you using COMLINC today? In what capacity?

We do not have COMLINC; we have requested it but have not received anything yet.

We have also tried to obtain grant funding to upgrade our system and have been told we cannot.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We do not talk with VSP or other state agencies. We do not use the SIRS program because of skip.

Currently have a UHF system that needs to be upgraded. Many times our personnel are out on their own with no way to communicate.

How could COMLINC change to be more efficient and effective for your use?

Our County is 422 square miles, and mostly composed of state or federal land. We NEED interoperability with state agencies like: VSP, VDOT, DGIF



Interview Questionnaire

Date: 9/4/2018

Agency Name: New River Valley

Agency Representative: Matt Hobson, Derick Rogers

Phone: (540) 391-4460,

Email: hobsonmd@nrv911.org,

Are you using COMLINC today? In what capacity?

No, we do not use it. It is available as an option to be used as a remote radio, but not for regular use. We have COMLINC and we could integrate it to be used as a remote radio console. There is some functionality, but it is not used often enough to train our dispatchers on it.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We have 15 disparate radio systems in use, and it is not easy to integrate them. In the case of a serious disaster we would be using all 15 channels at once to communicate with the localities around us. We are working on transitioning to MW link.

COMLINC is connected to control stations currently.

Are there any Governance Issues that make using COMLINC problematic for your agency?

-No Response-

How could COMLINC change to be more efficient and effective for your use?

SIRS was an efficient and simple system with sufficient range, and our interoperability solution moving forward should be similar. Interoperability Channels - VCall 10 is on a radio on top of their building.

We would use COMLINC if it were more cost effective, and able to link to the 15 systems we need to talk with.

The state should look at going back to the basics and invest in infrastructure build-out for smaller localities so they first become functional, then focus on building forward towards interoperability.

What initial and ongoing training would help you better utilize COMLINC?

If COMLINC was in place at consoles we would need initial and ongoing training. We would need training if it were used more often, but at this point it is used so rarely.



Interview Questionnaire

Date: 9/18/2018

Agency Name: City of Salem

Agency Representative: Bekki Craft

Phone: 540-375-3078

Email: racraft@salemva.gov

Are you using COMLINC today? In what capacity?

We have COMLINC, but we do not use it due to poor connectivity. We did not use the recommended internet connection during installation because we did not have broadband. VSP has done some work to make COMLINC operational.

We have it set up beside the console with CAD, which makes the system accessible. In our original setup, we had 5 terminals, and now have 2 (Police and EMS).

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We contact VSP dispatch on the phone. When they are in the field, our people do not have SIRS.

We swap radios for intercommunication with surrounding localities, and we have mutual aid channels for police and fire.

We will be joining the Roanoke County radio system, which will provide enhanced local interoperability.

Are there any Governance Issues that make using COMLINC problematic for your agency?

Overall we just need more communications between agencies in the Region.

How could COMLINC change to be more efficient and effective for your use?

It would be helpful if we could use COMLINC over broadband.

COMLINC is a great tool but localities do not know how to use it or are not familiar with the best opportunities to use it day to day. Ideally, we could find ways to incorporate COMLINC into our daily operations. If COMLINC could be incorporated onto a radio console, like SIRS is today, it would be used far more often.

It would be beneficial to develop use cases for how to apply COMLINC.

What initial and ongoing training would help you better utilize COMLINC?

Recently, training for the system was more technical and not geared towards front-line users.

Regular exercises would be beneficial. These do not need to be mock disasters, but they could be a monthly opportunity to learn new ways to use COMLINC, which could in turn give localities a reason to use the system more regularly.



Interview
COMLINC EVALUATION
Questionnaire

Date: 9/11/2018

Agency Name: Prince William County

Agency Representative: Captain Thomas Clark

Phone: 571-722-8080

Email: tclark@pwcgov.org

**Can you provide more information about Culpepper/Rappahannock and how they talk with your region?*

Are you using COMLINC today? In what capacity?

We only use COMLINC for regular patch testing, we do not use it to actually connect to localities in our region.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Systems in the region have worked together to program talk groups into each other's radio systems.

We use the radio system to patch to other localities, such as Quantico. We are not directly patched to VSP, but relayed thru dispatchers. Our radio system meets our needs.

Additionally, we are currently setting up an ISSI to link into VDOT.

Are there any Governance Issues that make using COMLINC problematic for your agency?

Governance is a critical area to address, given restrictions like VSP's policy to never leave their channel.

How could COMLINC change to be more efficient and effective for your use?

-No Response-

What initial and ongoing training would help you better utilize COMLINC?

PSAP's need training as part of regular protocol, and additional exercises could be beneficial.



Interview Questionnaire

Date: 9/26/2018

Agency Name: Falls Church

Agency Representative: Pilar Uelmen

Phone: 703-248-5275

Email: puelmen@fallschurchva.gov

Are you using COMLINC today? In what capacity?

No, we do not have this equipment.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We use shared radio.

Are there any Governance Issues that make using COMLINC problematic for your agency?

We do not have COMLINC installed.

How could COMLINC change to be more efficient and effective for your use?

No.

What initial and ongoing training would help you better utilize COMLINC?

-No Response-



Interview Questionnaire

Date: 9/26/2018

Agency Name: Manassas Park

Agency Representative: Captain Kevin Hampton

Phone: 703-335-0110

Email: k.hampton@manassaspark.va.gov

Are you using COMLINC today? In what capacity?

We do not have COMLINC.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We have a common radio system and shared frequencies that allow us to communicate with other localities, and we use phones to talk with VSP.

Are there any Governance Issues that make using COMLINC problematic for your agency?

-No Response-

How could COMLINC change to be more efficient and effective for your use?

Our current system meets our needs, so we do not need to invest in another solution.



Interview Questionnaire

Date: 9/28/2018

Agency Name: Manassas City

Agency Representative: Sean Whitfield

Phone: (703) 257-8293

Email: swhitfield@manassasva.gov

Are you using COMLINC today? In what capacity?

No, we are not using COMLINC.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

I am uncertain of what program we are using.

Are there any Governance Issues that make using COMLINC problematic for your agency?

None.

How could COMLINC change to be more efficient and effective for your use?

-No Response-



Notes from Discussion about COMLINC

Date: 9/19/2018

Agency Name: Radio Amateur Civil Emergency Service (RACES)

Agency Representative: Dr. Joe Palsa

Phone: 804-350-2665

Email: djgpalsa@gmail.com

Are you using COMLINC today? In what capacity?

We do not directly use COMLINC, but the agencies we work with use COMLINC.

Not all agencies use the system because we have other ways set up with surrounding agencies for interoperability. The way events occur in Virginia, there are not many reasons to use it. If state needs to get involved, we let the state set up whatever is necessary for the situation.

There are some issues within the agencies and with the state regarding the use of COMLINC, but they could be worked out.

Some reliability issues need to be corrected. Radio systems have changed a lot over the last 10 plus years creating a more diverse requirement, and operational requirements have also changed. While these changes were not overwhelming, they still need to be addressed.

When the system was first deployed, training and SOP's left a little to be desired.

There is always a need for immediate and ongoing training to establish and maintain familiarity with the system.

Note:

There were several instances (searches) where COMLINC worked well but most of them were during the early days of the original deployment



Interview Questionnaire

Date: 9/26/2018

Agency Name: Stafford

Agency Representative: Ray Davis

Phone: (540) 658-4962

Email: raydavis@staffordcountyva.gov

Are you using COMLINC today? In what capacity?

We very rarely use the system.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We use P25 shared radio to interoperate. We do not use COMLINC because it is difficult to make connections.

Are there any Governance Issues that make using COMLINC problematic for your agency?

None.

How could COMLINC change to be more efficient and effective for your use?

The system needs to be more reliable and adding features like streaming video would be helpful.

What initial and ongoing training would help you better utilize COMLINC?

We would benefit from refresher training on a scheduled basis.



Interview Questionnaire

Date: 8/23/2018

Agency Name: Stakeholder

Agency Representative: Charles Werner

Phone: (434) 825-5402

Email: charleswerner@gmail.com

Background – COMLINC developed in an ad hoc way by individual grants largely funded by DHS grants following 9/11. It was never established as a program while it continued to expand among state and local agencies.

Is COMLINC being used today? In what capacity?

COMLINC is used extensively in some counties, like in Charlottesville where it is utilized on a daily basis with neighboring localities and was utilized in a large recent emergency event. The success of each locality is based on how much they know about how COMLINC can be used through best practices, training and practical use with the VSP, VDOT, VDH, and neighboring localities.

Regarding the Charlottesville Protest this past August 12 weekend - I have talked with a number of people (directly involved with Comms) who have shared their thoughts on COMLINC, the Radio Caches and cross discipline/agency collaboration. While I know that there will be a thorough AAR to follow, I am compelled to echo some of the points that I have heard from different sources and as an observation to my own experience monitoring communications.

COMLINC proved invaluable by providing 7 TAC patches that allowed multiple agencies and assets to effectively communicate. As I was told, the patches were going to be used as a backup but performed better and became the primary link. Additionally, all of the radio traffic on all 7 patches were recorded through the COMLINC RIOS. Last, when there were operational configuration issues, Sytech was able to make adjustments remotely.

The Radio Caches and all of the planning, deployment and ability to adapt was exceptional. This asset combined with COMLINC were a winning combination.

One area that I must highlight is the story I heard about local dispatchers and VSP dispatchers working closely together in the same room.

Additionally, and perhaps for the first time, COMLINC through a RIOS client was used in the Governor's Situation Room and allowed the Governor and staff to directly monitor radio traffic from Charlottesville on the August 12 protests.

Again, I know that you will hear about this and more, but I wanted to share the sense of accomplishment and excitement that I am hearing from others.

Communications is generally a critical issue in a major event and the recent event in Charlottesville was no exception. However, with COMLINC, the Radio cache and proper planning, communications were effective, and communications problems were minimal.

What interoperability tools are being used?

The large majority of localities (102) are using RIOS; replacing the RIOS with a new tool would be difficult at best as many localities and state agencies are using the RIOS on a daily basis. In addition, many local and state agencies have invested their own money to upgrade their RIOS equipment. Changing to a new system will require all localities to pull their current RIOS, schedule for replacement, retrain all personnel which is both time consuming and costly. Removing a working system will create animosity which will not likely be well received. Additionally, the cost of a new system may be as much as 10x the amount of the estimated refresh without any substantial gain.

Are there any Governance Issues that make using COMLINC problematic for your agency?

Early on, COMLINC had a steering committee. A COMLINC Steering Committees needs to be in place to develop governance, SOPs, Training & Exercises, and provide Best Practices to define what the tool can do.

How could COMLINC change to be more efficient and effective?

1. Make COMLINC into a sustainable program that embraces sound governance (COMLINC Steering Committee), implements effective SOPs, addresses refreshes technology, provides annual training to state and local agencies, is exercised in

annual emergency management and/or interoperability exercises and promotes best practices to promote the various and daily use of COMLINC.

2. Develop a department-wide policy for a common SOP across all VSP dispatchers
3. Presently VSP does not have the RIOS client on all of their main consoles and a patch requires a dispatcher to move to another location to accomplish this task. This is problematic.
4. From the beginning, VSP assumed the initial maintenance responsibility without any additional personnel. In order to keep the system functional, VSP needs the necessary staff resources to keep the system operational with prompt response to technical issues.
5. From the beginning, COMLINC did not have a maintenance contract with the vendor, this is absolutely necessary as with any mission critical program to ensure its readiness 24/7.

VSP uses COMLINC differently. Each division is allowed to determine whether or not to use COMLINC, and how they will use COMLINC if they choose to use it at all.

Using the five lanes of Interoperability is a critical tool to measure overall progress within the Commonwealth.

Many localities did not and do not presently have the money to sustain COMLINC.

What initial and ongoing training/maintenance would help better utilize COMLINC?

Maintenance should be handled by a combination of technicians from both VSP and the Technology Vendor. VSP needs additional staffing to properly maintain a statewide system.

GENERAL NOTES

COMLINC initially came about because of the STARS program, which was designed to solve the issue of interoperability and initially failed in Region 1 when using another technology Motobridge. However, COMLINC became more successful once the technology was changed to utilize the SyTech (a Virginia Veteran Small Business) RIOS which was selected after an extensive RFP process. The Virginia General Assembly required the issue of interoperability to be addressed and a sustainable solution provided before they would fund STARS. COMLINC was formed, but it is critical to recognize its weaknesses, as it was never designed as a program. To overcome these issues, we must develop a program that embraces the DHS interoperability continuum with governance, operations, training, maintenance and sustainability.

If we do not fund COMLINC, this will remove interoperability for 102 localities, 14 hospitals, and as a result, VDOT/VSP and VDH will not be able to communicate with and between localities.

There is no current alternative to how they will communicate without COMLINC. COMLINC is used:

- Regionally by VDH to communicate on a daily basis with regional hospitals
- Regionally by VSP with localities for situations such as the Charlottesville/Richmond protests, presidential motorcades, large events such as presidential debates, pipeline protests
- Regionally by VDOT for effective Traffic Incident Management with and between local public safety responders
- Also used in situations like the military aircraft crash in Augusta and linking local, state and federal agencies
- Localities use COMLINC to communicate with neighboring localities on disparate radio systems to effectively communicate on incidents that utilize resources from both localities. This may include large scale events, cross jurisdiction pursuits, presidential motorcades, etc.

When the question is asked, “Is COMLINC a ‘nice to have’ or a ‘need to have’ – the answer is that in order to effectively communicate between the wide variety of responders (local, state and federal) to effectively manage a significant incident – COMLINC IS NEED TO HAVE!

Also, as FirstNet is built out and coverage is acceptable, COMLINC IS ABLE TO OPERATE ON FIRSTNET which will provide priority and preemption for responders and make COMLINC even more effective.



Interview Questionnaire

Agency Name: Communications Cache

Agency Representative: Greg Hunter

Phone: 804-592-7920

Email: Gregory.hunter@Fairfaxcounty.gov

Are you using COMLINC today? In what capacity?

The system is separated into two cache groups. One Cache uses a RIOS client, the other does not because system is unstable (appears to be a configuration issue). All systems were originally intended to use common programming, but they do not appear to have been set up that way. SyTech was originally set up to do the system programming.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Yes, the second cache system uses Incident Commander's Radio Interface (ICIR) gateways, using a manual gateway connected to subscriber, then to COMLINC. The RIOS equipment is not used. ICRI has been found to be less expensive and easier to use.

Are there any Governance Issues that make using COMLINC problematic for your agency?

Not directly but there have been some issues with VSP.

How could COMLINC change to be more efficient and effective for your use?

By offering additional RF resources and controlling station access to STARS, and keeping tactical RIOS as needed for unscheduled tactical use.

Large systems are not as impacted by loading as small systems. A Stars talkgroup can be provided by region and system wide using control stations and console patches to access a region wide or statewide talkgroup on the STARS system.

What initial and ongoing training would help you better utilize COMLINC?

ComLinc has never been able to sustain training. The system is not used enough for operators to retain information. Online training would help. The training model is woefully inadequate. In many areas, only supervisors can authorize patches and users find that policies get in the way of using the system.

While the new phone application has been well received, most of the newly implemented systems have a phone application supplied by the vendor, making the RIOS application unnecessary.

Mr. Hunter felt that a lot of the problems with ComLinc RIOS could be mitigated by a system redesign that considers user requirements and each user system capabilities.

Comments

The ComLinc system could be a very good asset to the agencies but over the years, the lack of funding for training and maintenance, programming without extensive user input, complicated operation, political restrictions and overall user support has rendered a potentially good system almost unusable for many of the agencies it was meant to serve. The only fix for this is a total restructure of the system to address the issues above.



Interview Questionnaire

Date: 9/18/2018

Agency Name: Department of Military Affairs

Agency Representative: Christopher Johnson

Phone: 434-294-1649

Email: christopher.h.johnson@vadoc.virginia.gov

Are you using COMLINC today? In what capacity?

We do not use COMLINC often, but in emergency situations (such as a hurricane, ect.) when we do need to use it, the system is invaluable. We normally run at 30% to 40% staffing and bring in reserves for major issues, and COMLINC supports that staffing procedure.

We use COMLINC for communications with small disparate systems. We like the system and while we do not use it often, it is one of the most valuable tools we have.

Are there any Governance Issues that make using COMLINC problematic for your agency?

There are not really issues but putting COMLINC under one agency like VSP would make it easier to set up for disaster situations, because there would be only one Agency coordinating every facet of its use.

How could COMLINC change to be more efficient and effective for your use?

The system would benefit from a focus on improving system management and maintenance, and by offering more training.

What initial and ongoing training would help you better utilize COMLINC?

The training provided should be modified to better fit how each Agency uses it. Training should be done at least twice a year, perhaps during the State mandated training.



Interview Questionnaire

Date: 9/19/2018

Agency Name: Radio Amateur Civil Emergency Service (RACES)

Agency Representative: Dr. Joe Palsa

Phone: 804-350-2665

Email: djgpalsa@gmail.com

Are you using COMLINC today? In what capacity?

We do not directly use COMLINC, but the agencies we work with use COMLINC.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Not many use because we have other ways set up with surrounding agencies for interoperability. The way events occur here, there are few reasons to use it. If state needs to get involved, we let the state set up whatever is necessary for the situation.

Are there any Governance Issues that make using COMLINC problematic for your agency?

There are some issues within the agencies and with the state regarding the use of COMLINC, but they could be worked out.

How could COMLINC change to be more efficient and effective for your use?

The reliability issues need to be corrected. Radio systems have changed a lot over the last 5 or 10 years creating a more diverse requirement, and operational requirements have also changed. While these changes were not overwhelming, they still need to be addressed.

What initial and ongoing training would help you better utilize COMLINC?

When the system was first deployed, training and SOP's left a little to be desired.

There is a need for immediate and ongoing training to establish and maintain familiarity with the system.

Note:

There were several instances (searches) where COMLINC worked well but most of them were during the early days of the original deployment



Interview Questionnaire

Date: 8/22/18

Agency Name: VA Municipal League

Agency Representative: Michelle Gowdy

Email: mgowdy@vml.org

The Municipal Leagues is an advocate for Cities and towns. We are a voice with the General Assembly.

Are you using COMLINC today? In what capacity?

COMLINC was a great system when first implemented, but over the years it was not maintained. A primary issue is equipment which is either outdated or not well-serviced in many localities.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We do not use COMLINC on a regular basis, only occasionally when it is needed. Localities have worked with each other to fulfill their interoperability needs and while it may not always be the most efficient method, it works for them. If a tool could be implemented that would make interoperability more efficient they would likely use it.

Are there any Governance Issues that make using COMLINC problematic for your agency?

Not that I am aware of.

How could COMLINC change to be more efficient and effective for your use?

The concern about COMLINC is we cannot pay for it and we cannot spend a lot of time figuring it out. If it is not a tool to be used every day, it must be reliable and easy to use when needed.

Some potential additional uses of COMLINC include: public utilities, wreckers, and schools.

What initial and ongoing training would help you better utilize COMLINC?

Our dispatchers already have so much training and so many rules it takes up too much of their time. Requiring another training is difficult. COMLINC must find a way to make training more hands on.



Interview Questionnaire

Date: 9/4/2018

Agency Name: VDEM

Agency Representative: Isaac Janak

Phone: 804-663-7754

Email: visaac.janak@governor.virginia.gov

GENERAL DISCUSSION

We need to communicate with VSP to see if they are going to own and manage COMLINC like they do STARS. Whoever is going to own the system will determine the implementation of security standards.

VITA is the organization for technology and security, and they have strict security standards (reference Mike Watson, VITA Deputy CIO; Tom Bradshaw, VSP; Leslie Larkin VSP Security Rep).

There must be standards in place and they must be adhered to by all localities, because the weakest link will break the security protocol.

NIST Cyber Security Framework - Executive Order 13636 (Generic Standard) is the starting point for security.

VSP is a hybrid because of radio and therefore the governance model will be different than the standard VITA model.

We need to determine what system are in place today, and if they are sufficient or are there gaps?

I will coordinate a meeting between the security representative of VITA and VSP to further discuss security protocols.



Interview Questionnaire

Agency Name: Virginia Department of Emergency Management

Agency Representative: Mike Keefe-Thomas

Phone: 804-484-4195

Email: mike.keefe@vdem.virginia.gov

Are you using COMLINC today? In what capacity?

Yes

VDEM typically uses COMLINC more as a situational awareness tool rather than patching difference entities or groups together. That is, they use RIOS to monitor entities or groups

VDEM uses COMLINC for planned events; not so much for an emerging event

VDEM does not consider COMLINC a mission critical tool.

VDEM has had about a 50/50 success with the RIOS lite smartphone app.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

VDEM has had issues after SyTech RIOS sends out updates. Although it has started to settle down

VDEM indicates that it takes a technical individual to initially set up RIOS. It has too many nuances when it comes out of the box, (figuratively speaking)

Because VDEM is a State agency, they do not require COMLINC. Rather, VDEM talks directly to other state agencies.



Interview Questionnaire

Agency Name: Virginia Department of Fire Programs

Agency Representative: Brook M. Pittinger

Phone: 804-371-0220

Email: brook.pittinger@vdfp.virginia.gov

Are you using COMLINC today? In what capacity?

Never used

Does not believe to have COMLinc hardward

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

Train facility not in Operations

Are there any Governance Issues that make using COMLINC problematic for your agency?

N/A

What initial and ongoing training would help you better utilize COMLINC?

Use this agency as a catalyst to train other agencies and localities in COMLINC. Also think about Criminal Justice --DCJS



Interview Questionnaire

Date: 9/24/2018

Agency Name: VDH

Agency Representative: Karen Owens, Emergency Operations Manager

Phone: 804-888-9100

Email: karen.owens@vdh.virginia.gov

Are you using COMLINC today? In what capacity?

We have COMLINC Client, but we do not use the system because we have never had the need. I was unaware the primary objective of COMLINC was to link localities with the state.

We have RIOS LiTe on smart phones.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We have direct access to STARS, cell phone, and texting to interoperate, typically using phones to reach other localities.

We have never needed to use COMLINC, as other systems serve its purpose.

Are there any Governance Issues that make using COMLINC problematic for your agency?

No, there are none.

How could COMLINC change to be more efficient and effective for your use?

COMLINC would be more useful if we had information on who has access to the system and more training to establish familiarity with it.

Note—Bill Webb in VDH (Office of Emergency Preparedness within VDH) gave a training session on RIOS LiTE just before Hurricane Florence.

What initial and ongoing training would help you better utilize COMLINC?

We would benefit from more information about access; by whom, how and where the system is able to be used.

We did receive initial training on the RIOS lite client and tested at the time, but have since forgotten as we do not use the system.



Interview Questionnaire

Date: 8/10/2018

Agency Name: Virginia Department of Health

Agency Representative: William Webb & Robert Bradley

Email: william.webb@vdh.virginia.gov

robert.bradley@vdh.virginia.gov

Are you using COMLINC today? In what capacity?

Usage of the COMLINC system varies by VHHA Region from daily to infrequently. The Virginia Hospital and Healthcare Association, VHHA, represents the hospitals collectively to VDH. Each of the six (6) VDH regions has a Primary Regional Hospital Coordinating Center (RHCC) and an Alternate RHCC, except Far Southwest where Alternate site is TBD. Each Primary and Alternate site has a RIOS gateway. When the PSIC Project was completed 104 hospitals each had a RIOS client to connect to the Primary and Alternate gateway in their region. Each of the RIOS gateways was equipped with a radio with the same code plug as the hospitals in that region.

Only the hospitals that housed the gateways got a client computer for their Hospital Coordination Center, HCC. All other hospitals provided a computer for the RIOS Client. The hospitals provide internet connections and IT support for the Gateways and computer clients on a voluntary basis. VDH does not have the authority to require hospitals use the COMLINC System, though it is highly recommended.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

STARS Control Stations were installed in all thirty-five (35) District Health Department offices. Two (2) of our health districts, Lord Fairfax and Rappahannock-Rapidan, have purchased four (4) STARS each to be used for redundant communications. These radios are

tested monthly as part of that regions roll call. STARS control stations have be installed on the Central Primary RHCC and Eastern Primary RHCC gateways, Cabling is being purchased so that STARS control stations can be installed on the remaining four (4) Primary RHCC gateways.

A power outage at CJW Hospital occurred July 10, 2018. The Richmond Ambulance Authority under their MOA with the Central Region RHCC used their COMLINC client to alert the Central Region hospitals about possible patient movement and Emergency Room diversions.

What initial and ongoing training would help you better utilize COMLINC?

VDH requires all employees with access to a STARS radio to be trained. A record of that training is maintained in TRAIN. All VDH STARS radios are on a monthly test schedule. Testing is done by VDH Region. We conduct testing and maintain the records.



Interview Questionnaire

Agency Name: VDOT

Agency Representative: Earl Sharp

Phone: 804-225-3157

Email: earl.sharp@vdot.virginia.gov

Are you using COMLINC today? In what capacity?

Largely no, we are a partner agency and have some interop capable equipment. Lack of governance and deployment are not conducive to using COMLINC. Although 5 locations have usable equipment, it is 1st generation and requires updates.

Not all regions are using COMLINC, 4 of 5 have a presence but are not doing interop. Usage is limited and sporadic with localities. COMLINC is used to link in some legacy systems for intra-agency interop, and is also used in Southwest between some localities.

The localities have tried to use it from field in special events, but VSP did not know how to use it.

VDOT falls more to the left on the Interoperability Continuum.

VDOT primarily uses COMLink to monitor localities and STARS. That is, COMLink is used as primarily a radio receiver resource. COMLink is not so much used to patch or tie-in to their systems as a radio transmit resource. (PTT—Push-To-Talk resource)

With regard to the Regional Traffic Operations Centers, VDOT has five Regional Traffic Operations Centers around the Commonwealth; 4 of the 5 Traffic Operations Centers utilize COMLink as a dispatch tool. VDOT has COMLink set to a specific STARS talk group.

VDOT also has the capability via COMLink to tie-in their VDOT LOW Band ops to a STARS operational talk group. To that degree, there is a success story in Hampton Roads area. VDOT tied in their low band system to a STARS talk group. This was left in as a permanent patch early this year for about 5 to 6 months with great success.

At one of the 5 Traffic Operations Centers, VDOT uses a consolette in lieu of COMLink. Although this does not have the same capabilities as COMLink, it serves a purpose (Earl, please expand on the purpose of the consolette.), and cost less than the COMLink

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We use a telephone or shared radios, data streams.

Are there any Governance Issues that make using COMLINC problematic for your agency?

Governance is problematic, and we need to be clear on what it is and set expectations. What are the operating procedures? We need to establish best practices for steady, sustainable state and adaptable governance.

We are willing to invest in equipment, but not willing to invest and get equipment that does not help meet our mission. It is not helpful for us to pay for a system that has barriers and will not work.

What tier of maintenance will be required?

With regard to Governance, no day to day policy on how to link-in to COMLink.

No direction on maintenance procedures or service level agreements

Suggest that COMLink have a governance model that would encourage an expansion to link or pull in other agencies—both state and local.

How could COMLINC change to be more efficient and effective for your use?

Our main partner is VSP, so we would need to develop procedures that would outline how we do business and interact with VSP.

- Catalyst
- ICRI
- JPS
- Mutual Link – law enforcement centric

Some suggestions to make COMLink more effective from a VDOT perspective are:

- Have an agreed life cycle
- Maintenance agreements
- What can do/not do
- Routine management exercise rhythm
- HAVE COMLink TIED DIRECTLY TO THE VEOC (Virginia Emergency Operations Center); especially during Governor declared emergencies.
- Have way to visually monitor the health of COMLink: also have visual aids indicating:

- IN SERVICE (IS)
- OUT OF SERVICE (OOS)
- LONG TERM OOS
- SHORT TERM OOS
- COMLink must be on state contract

What initial and ongoing training would help you better utilize COMLINC?

Everyone relies on vendor training, not integrated training beyond initial deployment. The COMLINC training needs to be responsible, receptive, innovative, and it must go beyond law enforcement.

GENERAL COMMENTS

We prefer you to recommend sustainable long term items. Do not throw money and personnel without good governance. We NEED operating procedures, and no unfunded mandates.

Security – We do general business, but we need to adhere to good standards

How do we get buy in from localities? – We invest in a program with no direct costs, no recurring costs, find a reason to motivate them to use it.

Bear in mind, the state has requirements for emergency management exercises based on past events.

COMLINC is All Hazards and the interoperability tools used must address this environment.

The vendor should have provided an inventory, site visit, and usage data.

As a side note, it has been reported (unconfirmed report) that the Staunton District NW Operations Center uses some sort of texting feature to jurisdictions within their region or district.



Interview Questionnaire

Date: 8/17/18

Agency Name: VITA

Agency Representative: Steve Marzolf

Phone: 804-298-3127

Email: steve.marzolf@vita.virginia.gov

Are you using COMLINC today? In what capacity?

Not really.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

What options do we have for interconnecting the disparate systems we have today?

Localities have cobbled together different ways to talk with those around them. What they do not know is what possibilities interoperability could create. Localities have a great need for a daily-use option to establish communications with their neighbors, however many localities need to achieve operability before interoperability.

What initial and ongoing training would help you better utilize COMLINC?

Region 4 did a lot of training at one time, but it is imperative for the operators to use it every day.

GENERAL NOTES

COMLINC, because it is a good concept, but it is not implemented well. In the Commonwealth, we find a technology solution without clearly defining the problem, which results in a solution neither well communicated nor developed. It started as a way to spend grant money, which is not sustainable because of leased lines, and peters out after the first year.

When asked, no one could tell us exactly what we are trying to do with this system. COMLINC is a system to system solution.

Some localities still have ACU 1000, but I have not seen anyone operationalize. There have been a few success stories for a planned event.

Lynchburg received a COPS grant and deployed a SyTech solution.

What is the problem we are trying to solve?

The “three-legged stool” of linked systems: COMLINC, Radio Caches, and Interoperability Channels.

Consider probability instead of possibility; we need a practical solution.

We are not using interoperability frequencies as robustly as we could.



Interview Questionnaire

Date: 8/16/2018

Agency Name: Virginia State Police (VSP)

Agency Representative: Captain Bradshaw, John Agee, Travis Cox

Phone: 804-674-8021

Email: travis.cox@vsp.virginia.gov

Are you using COMLINC today? In what capacity?

Our use of COMLINC is operationally dependent, limited to major events and the localities in Region 3, 4, and 7.

VDOT is using COMLINC as a primary dispatch system.

We could not use COMLINC to patch because the Virginia State Police only had 2 dispatchers on duty.

If you don't have COMLINC, what program are you using? Is there a reason you don't use COMLINC?

We used the cache team for the recent events in Charlottesville. COMLINC patched their ops (NOP LE3) to the Charlottesville event radio for recording. We also used the 700 TAC and had one 800 TAC channel on reserve, FirstNet in the ICP and logistics, and could have used an ICRI.

VSP uses ORION for Port Authority, Virginia Beach, and most metropolitan areas. The coverage is good, all troopers have the channels in their radios. RIOS on the other hand is used largely in rural areas.

FirstNet is used through band 14 to tie into the phone system.

Are there any Governance Issues that make using COMLINC problematic for your agency?

Dominion may be able to use COMLINC because of the two nuclear plants.

The Virginia Department of Health may or may not be able to use the system to patch hospitals.

How could COMLINC change to be more efficient and effective for your use?

The Virginia State Police would like to maintain any version of COMLINC, but we desperately need funding and staff to maintain the system.

The Virginia State Police were impressed with MutualLink (Colin McWay 203-741-5616 & Robert Wright 201-832-8507) which has a presence in NC, and we may use this system to further interoperability. The downside of the MutualLink system is PS grade backhaul, which is internet based. In the past we have also linked in to FirstNet using Band 14.

Captain Bradshaw mentioned that funding is critical for the project. They have open positions but experience difficulty staffing.

Promised 4 FTE positions and funding and we are currently using a radio shop position.

SIRS is used primarily for DOC, allowing localities use to call troopers to an incident, but the system should not be considered a COMLINC.

Microwave backhaul for VSP would be easy, but for localities it would be more difficult.

VSP very concerned about security of COMLINC.

What initial and ongoing training would help you better utilize COMLINC?

COMLINC is part of in-services training which takes place every two years. We should stress role calls for each shift.

GENERAL NOTES

COMLINC is a concept, and RIOS is a platform. The original intent of COMLINC was to link localities to STARS, and a byproduct of this link allows localities to talk with each other. The system is footprint dependent.

Most of the equipment (around 75-80%) is out of date.

Adoption of RIOS was a heavy lift, changing to a new platform will be similarly difficult.

SyTech is connected by three information servers (in Cincinnati & Northern Virginia) and they can shut down the system at any time.

APPENDIX G

Interview / Survey Response Log

COMLINC EVALUATION

INTERVIEW / SURVEY RESPONSE LOG

Organization	SIEC Member / Contact	Governance Interview Complete	Survey Complete
RPAC-I Chair Region 1 [Hanover]	Charles Smith	9/7/18	
Amelia	Ranna D. Cope	9/18/18	
Caroline	Lisa Harvey	9/24/18	9/24/18
Charles City	Davon Jones	9/18/18	
Chesterfield	Richard Troshak	9/21/18	
Colonial Heights	Eric Albert	9/18/18	
Dinwiddie	Denice Crowder	9/12/18	
Essex	James Brann	8/6/18	
Goochland	Terry Pleasants	9/26/18	9/26/18
Henrico	Steve Weis		7/30/18
Hopewell	Kimberly Parson	9/18/18	
King and Queen	Greg Hunter	8/6/18	7/18/18
King George	Rhonda Smith		
King William	Loretta Collier	9/8/18	9/27/18
Lancaster	Glenn Rowe	9/25/18	9/25/18
Louisa	Tonya Hovey Miller	9/26/18	7/29/18
New Kent	Kathy Cheely		7/23/18
Northumberland	Robert Headley	9/25/18	9/25/18
Nottoway	Nikki Lester	9/18/18	9/18/18
Petersburg	Shantel Cooper	9/19/18	9/19/18
Powhatan	Tom Nolan	9/14/18	9/14/18
Prince George	Denise Johnson		
Richmond Ambulance Authority	Danny Garrison	10/3/18	9/27/18
Richmond City	Stephen Willoughby	9/20/18	7/23/18
Richmond County	Chris Jett	9/25/18	9/25/18
Westmoreland	Bill Cease		

COMLINC EVALUATION

INTERVIEW / SURVEY RESPONSE LOG

Organization	SIEC Member / Contact	Governance Interview Complete	Survey Complete
RPAC-I Chair Region 2 [Spotsylvania]	Mike Christie	8/31/18	8/31/18
Clarke	Pam Hess	9/21/18	7/23/18
Culpeper	William Martin	7/24/18	7/24/18
Fauquier	Chuck Kuhler	8/3/18	8/3/18
Frederick	LeeAnna Pyles	9/11/18	9/11/18
Fredericksburg	Mark Purcell	9/17/18	9/17/18
Harrisonburg-Rockingham	Jim Junkins	8/23/18	7/20/18
Madison	Brian Gordon	9/7/18	9/7/18
Orange	Tina Ball	9/7/18	9/7/18
Page	Chris Molina	9/25/18	9/25/18
Rappahannock	Sandi Carter	9/20/18	9/20/18
Shenandoah	R. Jason Malloy		
Warren	Karen Crum	9/20/18	9/20/18
Winchester	Erin Malloy	9/21/18	7/20/18

COMLINC EVALUATION

INTERVIEW / SURVEY RESPONSE LOG

Organization	SIEC Member / Contact	Governance Interview Complete	Survey Complete
RPAC-I Chair Region 3 [Lynchburg]	Jenifer Maul Melissa Foster	8/15/18	7/24/18
Amherst	Sam Bryant Debbie Campbell	9/12/18	9/12/18
Appomattox	Bobby Wingfield	9/7/18	7/25/18
Augusta	Donna Good	9/7/18	7/17/18
Buckingham	Jamie Shoemaker	9/7/18	
Campbell	Tracy Fairchild JonAaron Evans	9/14/18	7/18/18
Charlotte	Lisa Myers	9/7/18	9/7/18
Charlottesville-UVA-Albemarle	Todd Richardson	8/15/18	8/15/18
Cumberland	Shawn Howard		
Farmville	Jackie Gilbert		7/18/18
Fluvanna	Michael Grandstaff	9/12/18	
Greene	Tami Steighner Melissa Mehter		
Halifax	Wendy Jones	9/12/18	7/25/18
Lunenburg	Donald Penland	9/24/18	9/24/18
Mecklenburg	Ben Duncan	9/18/18	7/19/18
Nelson	Susan Rorrer		7/24/18
Staunton	E.J. Salemi Scott Bird		
Waynesboro	Gary Critzer	10/1/18	7/24/18

COMLINC EVALUATION

INTERVIEW / SURVEY RESPONSE LOG

Organization	SIEC Member / Contact	Governance Interview Complete	Survey Complete
RPAC-I Chair Region 4 [Tazewell County]	Derrick Ruble	9/13/18	9/13/18
Bland	Jenna Dunn	8/29/18	8/29/18
Bristol	Charles C. Robinette	8/29/18	8/28/18
Buchanan	Sonny Riggsby	9/28/18	9/28/18
Dickenson	Matt Slep	9/26/18	9/26/18
Giles	John Davis	8/31/18	8/31/18
Lee	Alan Bailey	8/31/18	8/31/18
Norton	James Lane	10/26/18	10/26/18
Pulaski	Chris Akers	8/29/18	8/29/18
Russell	Bo Bise		7/23/18
Scott	Janice Jennings	8/30/18	8/30/18
Smyth	Shannon Williams	9/4/18	7/23/18
Twin County	Jolena Young	9/4/18	9/4/18
Washington	Theresa Kingsley-Varble	9/4/18	7/23/18
Wise	Nancy Mullins	9/5/18	9/5/18
Wythe	Darlene Lang	10/26/18	10/26/18

COMLINC EVALUATION

INTERVIEW / SURVEY RESPONSE LOG

Organization	SIEC Member / Contact	Governance Interview Complete	Survey Complete
RPAC-I Chair Region 5 [York-Poquoson-Williamsburg]	Terry Hall	9/7/18	9/7/18
Brunswick	Devon Clary	9/25/18	9/25/18
Chesapeake	Richard Huttenbrauck		7/30/18
Eastern Shore	Jeff Flournoy	8/10/18	7/22/18
Emporia	Lt. John Romano Lt. Chaveir	9/18/18	9/18/18
Franklin City	Bruce Edwards	9/7/18	9/7/18
Gloucester	Liz Simmons	9/28/18	9/28/18
Greensville	Mike Veliky Ryan Aerni	9/18/18	9/18/18
Hampton	Lt. Michael Wisniewski	9/12/18	9/12/18
Isle of Wight	Ronald Bryan	9/18/18	9/18/18
James City	Shawn Wallace		
Mathews	Christian Foster	9/20/18	9/20/08
Middlesex	Eileen Koehl	9/21/18	7/23/18
Newport News	Carol Render		
Norfolk	Anthony Castillo		7/24/18
Portsmouth	Chris Patterson		
Southampton	Shanna Rollins		
Suffolk	Kimberly Hendricks		7/30/18
Surry	Tamara Arthur	9/24/18	9/24/18
Sussex	Crystal Wyche Stephen Williams	9/12/18	9/12/18
Virginia Beach	Rob Delaney	9/17/18	7/24/18

COMLINC EVALUATION

INTERVIEW / SURVEY RESPONSE LOG

Organization	SIEC Member / Contact	Governance Interview Complete	Survey Complete
RPAC-I Chair Region 6 [Roanoke County]	Rodney Thompson	8/29/18	7/19/18
Alleghany	Ryan Muterspaugh	9/14/18	9/14/18
Bath	Teresa Phillips		7/25/18
Bedford	Jeff Johnson		7/20/18
Botetourt	Nicole Manspile	9/12/18	9/12/18
Covington	Anthony Morgan	9/14/18	9/14/18
Craig	Robert Wrzosek	9/4/18	7/29/18
Danville	Michael Gobble	9/27/18	9/27/18
Floyd	Kevin Sowers	9/28/18	9/28/18
Franklin County	Melissa Cundiff		7/25/18
Highland	Ronald Wimer	9/14/18	9/14/18
Martinsville-Henry	J.R. Powell		7/25/18
New River Valley	Matt Hobson	9/4/18	9/4/18
Patrick	Mickie Martin		7/20/18
Pittsylvania	Daniel Kendrick		
Radford	Chris Caldwell		
Roanoke City	Sonya Roman		7/20/18
Rockbridge	Scott Bedell		
Salem	Bekki Craft	9/19/18	7/25/18

COMLINC EVALUATION

INTERVIEW / SURVEY RESPONSE LOG

Organization	SIEC Member / Contact	Governance Interview Complete	Survey Complete
RPAC-I Chair Region 7 [Prince William County]	Thomas Clark	9/11/18	9/11/18
Alexandria	Renee Gordon		7/18/18
Arlington	Dave Mulholland		7/26/18
Fairfax	Bill Kang	9/7/18	9/7/18
Falls Church	Pilar Uelman	9/26/18	9/26/18
Loudoun	Patricia Turner		7/18/18
Manassas	Sean Whitfield	9/28/18	9/28/18
Manassas Park	Kevin Hampton	9/26/18	
Stafford	Ray Davis	9/26/18	

COMLINC EVALUATION

INTERVIEW / SURVEY RESPONSE LOG

Organization	SIEC Member / Contact	Governance Interview Complete	Survey Complete
Department of Military Affairs	Christopher Johnson	10/2/18	
VA State Police	Tom Bradshaw	8/16/18	
VA Department of Emergency Management	Mike Keefe-Thomas	8/21/18	
VA Department of Emergency Management Emerg Coordinator Mgr I	James Ninnis	9/15/18	
VA Department of Health - Emergency Operations Mgr.	Karen Owens	9/24/18	
VA Department of Health - Public Health Preparedness Systems Mgr	Brad Bradley Bill Webb	8/10/18	
VA Department of Transportation	Albert "Earl" Sharp	8/17/18	
VA Information Technology Agency	Steve Marzolf	8/17/18	
VA Department of Fire Programs	Brook Pittinger	9/28/18	
VA Association of of Public Safety Communications Officials	Gabe Elias	8/15/18	
VA Municipal League	Michelle Gowdy	8/22/18	
Amateur Radio Emergency Service (RACES)	Dr. Joe Palsa	9/19/18	
Virginia Communications Cache	Gregory Hunter	8/24/18	
OEC Survey	Jeff Lilly Charlie Bush	8/14/18	
HSD Cyber Program Manager	Issac Janek	9/4/18	
HSD Grants and Budget	Jocelyn Bagby	8/20/18	
Stakeholder	Charles Werner	8/24/18	
Sytech	Aaron Armendariz	8/10/18	

APPENDIX H

Detailed Upgrade Cost Data

COMLINC DETAILED UPGRADE COSTS

	Quantity	Price Per	Total	
Fixed Site Hardware	120	\$21,968.00	\$ 2,636,160.00	Router Portion for Fixed Sites \$ 427,000.00
Includes Windows 10 Rackmount Computer, Pullout Monitor,				
RIOS Client Workstation	248	\$1,955.00	\$ 484,840.00	
Includes Windows 10 Client Computer, Monitor, Mouse, Keyboard,				
Mobile Command Vehicle Hardware	12	\$ 24,446.00	\$ 293,352.00	Router Portion for MCV \$ 42,000.00
Includes RIOS Rackmount Server, Replacement SuperRIB I/O				
RIOS Tactical Retro Fit	12	\$ 7,640.00	\$ 91,680.00	Router Portion for TAC2 \$ 42,000.00
Includes Replacement Ruggedized Computer, Pelican Case and I/O				
Replacement Router	146	\$ 3,500.00	\$ 511,000.00	\$ 511,000.00
Cisco Router with Multiport VLAN with RIOS COMLINC Configured VPN				
COMLINC Retrofit/Upgrade Total			\$ 4,017,032.00	

Sites Labeled "Moto" are RIOS Sites converted from Motorola Motobridge equipment. Moto sites are not dual rackmount servers. Those sites will require I/O chassis from existing dual systems and a rackmount environment.

COMLINC EVALUATION

	COMLINC Site	Fixed Site Count	Fixed Site Hardware Upgrade Required	Server/Clients/ Site Hardware	Client Workstation Quantity per Site (Recommend 2)	Client Workstation Configuration	Mobile Command Hardware Upgrade Required	Mobile Command Configuration	TAC Kit Hardware Upgrade Required	Tactical Hardware	Replacement Router Quantity	Router Price
1	Accomack County (Shared with Northampton, Eastern Shore area)	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
2	Alexandria, City	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
3	Amelia - Moto	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
4	Amherst County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
5	Appomattox, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
6	Arlington, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
7	Augusta County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
8	Augusta Mobile			\$ -		\$ -	1	\$ 24,446.00		\$ -	1	\$ 3,500.00
9	Bedford County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
10	Bland County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
11	Botetourt County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
12	Bristol, City	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
13	Brunswick County - SRT	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
14	Buchanan County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
15	Buckingham, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
16	Campbell County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
17	Caroline County - Moto	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
18	Carroll TAC			\$ -		\$ -		\$ -	1	\$ 7,640.00	1	\$ 3,500.00
19	Charles City - Moto	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
20	Charlotte County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
21	Charlottesville (Includes Albemarle and UVA)	1	0	\$ -	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
22	Chesterfield, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
23	Clarke County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
24	Craig County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
25	Culpeper County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
26	Cumberland, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
27	Dickenson County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
28	Dinwiddie, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
29	Essex, County - Moto	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
30	Farmville, Town	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
31	Fauquier Mobile			\$ -		\$ -	1	\$ 24,446.00		\$ -	1	\$ 3,500.00
32	Fauquier, Blue MTN		1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
33	Fauquier, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
34	Fluvanna County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
35	Franklin County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
36	Frederick County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
37	Fredericksburg	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
38	Galax TAC 2			\$ -		\$ -		\$ -	1	\$ 7,640.00	1	\$ 3,500.00
39	Galax Twin County (Shared with Grayson, Galax, Carrol)	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00

COMLINC EVALUATION

	COMLINC Site	Fixed Site Count	Fixed Site Hardware Upgrade Required	Server/Clients/ Site Hardware	Client Workstation Quantity per Site (Recommend 2)	Client Workstation Configuration	Mobile Command Hardware Upgrade Required	Mobile Command Configuration	TAC Kit Hardware Upgrade Required	Tactical Hardware	Replacement Router Quantity	Router Price
40	Giles County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
41	Goochland - Moto	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
42	Greene County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
43	Greensville, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
44	Halifax	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
45	Hanover - Moto	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
46	Harrisonburg (HRECC. Shared with Harrisonburg and Rockingham)	1		\$ -	0	\$ -		\$ -		\$ -	0	\$ -
47	Henrico - Moto	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
48	Henry County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
49	James Madison University	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
50	King & Queen, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
51	King George - Moto	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
52	King William, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
53	Lancaster - Moto	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
54	Lee County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
55	Liberty University, Lynchburg	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
56	Loudoun County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
57	Louisa, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
58	Lynchburg, City of	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
59	Madison, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
60	Meadow Event Park	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
61	Mecklenburg, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
62	Nelson County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
63	New Kent, County- Moto	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
64	New River Valley 911	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
65	Northumberland, County - Moto	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
66	Norton, City	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
67	Nottoway - Moto	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
68	Orange - Sheriff	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
69	Orange, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
70	Page, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
71	Patrick County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
72	Petersburg, City	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
73	Powhatan, County - Moto	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
74	Prince Edward, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
75	Prince George, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
76	Prince William, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
77	Pulaski County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
78	Quantico, FBI			\$ -		\$ -		\$ -		\$ -	0	\$ -
79	Rappahannock, Co	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
80	Richmond County - Moto	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00

COMLINC EVALUATION

	COMLINC Site	Fixed Site Count	Fixed Site Hardware Upgrade Required	Server/Clients/ Site Hardware	Client Workstation Quantity per Site (Recommend 2)	Client Workstation Configuration	Mobile Command Hardware Upgrade Required	Mobile Command Configuration	TAC Kit Hardware Upgrade Required	Tactical Hardware	Replacement Router Quantity	Router Price
81	Richmond, City	1		\$ -		\$ -		\$ -		\$ -	0	\$ -
82	Richmond, City TAC 2			\$ -		\$ -		\$ -		\$ -	0	\$ -
83	Roanoke County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
84	Roanoke, City	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
85	Rockbridge County	1		\$ -	2	\$ 3,910.00		\$ -		\$ -	0	\$ -
86	Russell County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
87	Salem, City of	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
88	Scott County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
89	Shenandoah, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
90	Smyth County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
91	Spotsylvania, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
92	Stafford, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
93	Staunton, City	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
94	Suffolk Cmd Vehicle			\$ -		\$ -	1	\$ 24,446.00		\$ -	1	\$ 3,500.00
95	Suffolk, City	1		\$ -	2	\$ 3,910.00		\$ -		\$ -	0	\$ -
96	Sussex, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
97	Tazewell County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
98	Tazewell TAC			\$ -	2	\$ 3,910.00		\$ -	1	\$ 7,640.00	1	\$ 3,500.00
99	University of Mary Washington	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
100	VA Cache - Chesapeake / Hampton			\$ -		\$ -	1	\$ 24,446.00	1	\$ 7,640.00	2	\$ 7,000.00
101	VA Cache - Fairfax			\$ -		\$ -	1	\$ 24,446.00	1	\$ 7,640.00	2	\$ 7,000.00
102	VA Cache - Harrisonburg			\$ -		\$ -	1	\$ 24,446.00	1	\$ 7,640.00	2	\$ 7,000.00
103	VA Cache - Lunenburg			\$ -		\$ -	1	\$ 24,446.00	1	\$ 7,640.00	2	\$ 7,000.00
104	VA Cache - Montgomery			\$ -		\$ -	1	\$ 24,446.00	1	\$ 7,640.00	2	\$ 7,000.00
105	VANG - JOC, Richmond	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
106	VDEM - COM 1	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
107	VDEM - IV Mobile CMD			\$ -		\$ -	1	\$ 24,446.00		\$ -	1	\$ 3,500.00
108	VDEM - VEOC Richmond	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
109	VDH - C ALT-CJW	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
110	VDH - C Pri-DoH	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
111	VDH - E Alt-Sentara Norfolk	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
112	VDH - E Pri-Riverside	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
113	VDH - FAR SW PRI	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
114	VDH - N ALT-MWH	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
115	VDH - N PRI	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
116	VDH - NEAR SW ALT	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
117	VDH - NEAR SW PRIM	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
118	VDH - NW ALT-Winchester	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
119	VDH - NW PRIM-UVA	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
120	VDOT - Hampton Roads	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
121	VDOT - Salem	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
122	VDOT - Staunton	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00

COMLINC EVALUATION

	COMLINC Site	Fixed Site Count	Fixed Site Hardware Upgrade Required	Server/Clients/ Site Hardware	Client Workstation Quantity per Site (Recommend 2)	Client Workstation Configuration	Mobile Command Hardware Upgrade Required	Mobile Command Configuration	TAC Kit Hardware Upgrade Required	Tactical Hardware	Replacement Router Quantity	Router Price
123	VSP - DIV 1, Glen Allan	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
124	VSP - DIV 2, Culpeper	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
125	VSP - DIV 3, Appomattox	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
126	VSP - DIV 4, Wytheville	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
127	VSP - DIV 5, Chesapeake SRT	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
128	VSP - DIV 6, Salem	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
129	VSP - DIV 7, Fairfax	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
130	VSP - MCP, DIV 1			\$ -		\$ -	1	\$ 24,446.00		\$ -	1	\$ 3,500.00
131	VSP - MCP, DIV 5			\$ -		\$ -	1	\$ 24,446.00		\$ -	1	\$ 3,500.00
132	VSP - MCP, DIV 7			\$ -		\$ -	0	\$ -		\$ -	1	\$ 3,500.00
133	VSP - NOC HQ Richmond	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
134	VSP - TAC 01			\$ -		\$ -		\$ -	1	\$ 7,640.00	1	\$ 3,500.00
135	VSP - TAC 02			\$ -		\$ -		\$ -	1	\$ 7,640.00	1	\$ 3,500.00
136	VSP - TCS Transportable			\$ -		\$ -	1	\$ 24,446.00		\$ -	1	\$ 3,500.00
137	Warren, County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
138	Washington County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
139	Washington TAC 2			\$ -		\$ -		\$ -	1	\$ 7,640.00	1	\$ 3,500.00
140	Waynesboro, City	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
141	Westmoreland - Moto	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
142	Winchester, City	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
143	Wise County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
144	Wythe County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
145	Wythe TAC 2			\$ -		\$ -		\$ -	1	\$ 7,640.00	1	\$ 3,500.00
146	York County	1	1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
147	Spare		1	\$ 21,968.00	2	\$ 3,910.00		\$ -		\$ -	1	\$ 3,500.00
	Number of State-Owned Fixed Sites	123	120	\$ 2,636,160.00	248	\$ 484,840.00	12	\$ 293,352.00	12	\$ 91,680.00	146	\$ 511,000.00

APPENDIX I

Current VSP / SyTech Maintenance Contract



VIRGINIA COMLINC MAINTENANCE AND SUPPORT CONTRACT

Contract No.

156-915790-017-PTT

between

Department of Virginia State Police

on behalf of

The Commonwealth of Virginia

and

**Systems Engineering Technologies Corporation
(SyTech)**

COMLINC EVALUATION

COMMONWEALTH OF VIRGINIA

SOLE SOURCE

STANDARD CONTRACT

Contract Number: 156-915790-017-PTT

This contract entered into this 20th day of September, 2016, by Systems Engineering Technologies Corporation (SyTech), hereinafter called the "Contractor" and Commonwealth of Virginia, Virginia State Police called the "Purchasing Agency."

WITNESSETH that the Contractor and the Purchasing Agency, in consideration of the mutual covenants, promises and agreements herein contained, agree as follows:

SCOPE OF CONTRACT The Contractor shall provide the goods/services to the Purchasing Agency as set forth in the Contract Documents

PERIOD OF PERFORMANCE. From September 20, 2016 through September 19, 2017

The contract documents shall consist of:

(1) This signed form which consists of the following Sections:

- (a) Purpose and Scope of Work
- (b) Method of Payment
- (c) General Terms and Conditions
- (d) Special Terms and Conditions

(2) The Contractor's Written Offer, all of which documents are incorporated herein

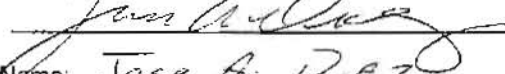
IN WITNESS WHEREOF the parties have caused this Contract to be duly executed intending to be bound thereby

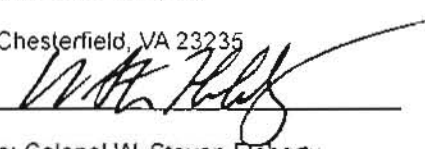
CONTRACTOR:

PURCHASING AGENCY:

SYSTEMS ENGINEERING TECHNOLOGIES
 CORPORATION (SyTech)
 6121 Lincolnia Road, Suite 200
 North Chesterfield, VA 23235
 Alexandria, VA 22312

VIRGINIA STATE
 7700 Midlothian Turnpike
 North Chesterfield, VA 23235

By: 
 Print Name: Jose A. Diaz
 Title: President/CEO

By: 
 Print Name: Colonel W. Steven Flaherty
 Title: Superintendent

Contract Officer: Patricia T. Trent, VCM, VCO, CPPB

Note: This public body does not discriminate against faith-based organizations in accordance with the Code of Virginia, § 2.2-4343.1 or against a bidder or offeror because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment.

BACKGROUND:

This Virginia COMLINC Maintenance and Support Contract is hereby entered into and agreed upon between the Department of Virginia State Police (VSP) and Systems Engineering Technologies Corporation (SyTech), to be effective as of the date it is signed by a legally authorized representative of the VSP Effective Date.

Department of Virginia State Police shall remain the primary technical managing authority over all services rendered under this contract. Virginia State Police will operate as a Tier 1 point of contact for all technical services with Tier 2 support provided by SyTech in accordance with the services defined in this agreement.

Tier 1 is defined as first point of contact for all required services from COMLINC RIOS user sites and SyTech when issues have been identified for maintenance support.

Tier 2 is defined as services provided under this contract by SyTech in support of VSP responsibility for technical and engineering support of the COMLINC RIOS system.

1. TERMS and LENGTH

- 1.1. The term of this Maintenance and Support Contract will apply for a period of one (1) year.
- 1.2. The price for the one year Maintenance and Support Contract will be the agreed to price of \$314,420.00 per year, paid in advance annually upon receipt of an invoice. This amount is due 30 days after the signing of the Maintenance and Support Contract, therein the price of any follow on year/s will be the negotiated price of the preceding year plus 3%.
- 1.3. As new sites are added to the COMLINC system the price increase for the new items will be due at the next yearly anniversary of the Maintenance and Support Contract.
- 1.4. The price for any new sites as agreed upon between Virginia State Police and the user agency will increase the price of the Maintenance and Support Contract by 10% of the value added to the contract.
- 1.5. It is understood by SyTech for any direct sales to localities or other agencies not supported or approved by the Department of Virginia State Police that those purchasing localities and agencies shall be responsible for establishing service and support agreements separate from this maintenance and support contract.

2. OVERVIEW OF SERVICE:

- 2.1. SyTech Corporation's Service Contract will support the Virginia State Police in maintaining the COMLINC Radio Interoperability System (RIOS) in all aspects of day to day operations and maintenance. Included in the Service Contract are the following:
 - 2.1.1. Access to SyTech's 24 hour, 7 day a week support, consisting of qualified technicians to every level of RIOS support.
 - 2.1.2. Dial-in technical support: This includes a dial-in capability for diagnostics, access to error logs, and the ability to download new software loads and/or patches to the system.
 - 2.1.3. Replace and maintain the three (3) Information routers. Provide for the required service plan for IP connectivity to the COMLINC system.
 - 2.1.4. Provide support at any COMLINC site with the configuration of the site router. Support will extend to the IT staff of the COMLINC site. This support contract will assure that the COMLINC router will be configured to the requirements of the site which is receiving the new hardware and/or any RIOS software upgrades.

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- 2.1.5. Full warranty of all "new" hardware included in any Purchase Orders for a total of one (1) year from the date of purchase. Repair or replacement is guaranteed in this Maintenance and Support Contract. In most cases a replacement item (e.g., computer, router, keyboard etc.) will be shipped within 24 hours to limit customers down time.
- 2.1.6. All software bug fixes and new features considered to be enhancements to existing capabilities released by SyTech during the service contract period will be downloaded at no additional cost provided the software updates are compatible with the Customer's existing hardware. Depending on the software enhancement, SyTech reserves the right to charge for upgrades, which are considered to be outside of the main functionality of the RIOS COMLINC system, e.g., . a site requiring a capability that is unique to that particular site or installation.
- 2.1.7. SyTech Corporation shall replace or repair any SyTech proprietary hardware that fails, and correct and fix proprietary software issues within the time period of the service and support contract as outlined in the attached Addendum 1 to this agreement. Any "new" hardware, such as the information routers will be supported by SyTech for any upgrades as provided by the original manufacture. Should other "new" hardware such as computers be provided during the time period of the contract, SyTech will warrant the hardware during the time period of the contract.

3. JOINT OBLIGATIONS:

- 3.1. SyTech Corporation's obligation under this Contract is to provide the highest level of service as stated in this document.
- 3.2. The Virginia State Police and user agency shall work together to ensure SyTech access to any and all equipment covered under this Contract when services are required under this agreement.
- 3.3. SyTech undertakes; the responsibility to respond to Virginia State Police calls for service within 30 minutes during normal business hours Monday thru Friday (8am to 6pm ET) and within two (2) hour(s) during non-business hours (7 days a week).
- 3.4. Virginia State Police will notify SyTech Corporation promptly of any system malfunction that comes to its attention. In a "System Down" scenario, SyTech in coordination with Virginia State Police, will attempt by all means necessary (including dialing in to the system) to resolve any problem remotely, before dispatching a SyTech technician to an on-site location to resolve the issue.
- 3.5. SyTech shall immediately notify Virginia State Police of any discovered or known defects, failures or software bug fixes required.

4. SCOPE of WORK:

The SyTech Corporation will provide Virginia State Police technical assistance and services in the following areas.

4.1. Network Monitoring Services:

- 4.1.1. Provide continuous network monitoring of the COMLINC RIOS system. Upon detection of an event immediately notify the Virginia State Police network Operations center (NOC) for service ticket generation and assist in evaluating the event, run available diagnostic routines, and initiate an appropriate response.
- 4.1.2. Recommend and coordinate installation of any needed connectivity or monitoring equipment.
- 4.1.3. Provide the dedicated resources necessary for monitoring the COMLINC-RIOS.

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- 4.1.4. Verify connections and event monitoring prior to the system acceptance of any new sites or upgrades.
- 4.1.5. Remotely Monitor the COMLINC-RIOS system continuously as the primary monitoring entity during contract period.
- 4.1.6. Access the COMLINC-RIOS system to perform remote diagnostics as required to assist VSP in maintaining the sites.
- 4.1.7. Create a Trouble Ticket when action is required.
- 4.1.8. Coordinate with the respective sites and VSP whenever devices are to be disabled and enabled within COMLINC-RIOS as needed for Service Technicians who go to the site when intervention is required.
- 4.1.9. Provide activity reports to VSP on Trouble Ticket history.
- 4.1.10. Provide Performance Reports for the COMLINC-RIOS on a monthly basis as outlined in sections 4.2.3 and 4.2.4.

4.2. IP Network Management:

- 4.2.1. SyTech will assist Virginia State Police technical staff with site troubleshooting and fixing local and wide area IP network connectivity problems. These issues include but are not limited to subnet to subnet connectivity, multiple subnet device configuration, firewall/security issues and various compatibility problems.
- 4.2.2. Network Management will provide management and operational activities necessary to ensure performance, availability and utilization to meet the service level requirements, including remote-system monitoring and alarm diagnostics, system utilization, and a network optimization plan.
- 4.2.3. Reports of the system performance, use, operational and maintenance activities.
- 4.2.4. Standard reports include device availability and system performance, repair activity, response and restoration cycle time and open/closed Trouble Tickets for tracking issue resolution.
- 4.2.5. Identify system capacities pertaining to the radio interoperability system.
- 4.2.6. Identify other technologies that may be implemented and their benefits.
- 4.2.7. On a monthly basis, analyze the data and provide recommendations for improvement.
- 4.2.8. Custom reports that might be needed to meet specific requirements as defined by Virginia State Police for the Sites are available subject to design and costing considerations.
- 4.2.9. SyTech will perform annual Technology Refresh reviews with the Virginia State Police and determine any modifications necessary to the existing scope of services provided.

4.3. System Audit:

- 4.3.1. Sytech shall perform annually or upon request of the Department of Virginia State Police a System Audit to gather system configuration information related to the Equipment. The audit is to include information on software versions, hardware versions, model and serial numbers, equipment distribution and system layout/architecture. SyTech will provide a soft copy of the audit data to VSP.
- 4.3.2. Determine information to be collected in the audit, which may include software versions, hardware versions, model and serial numbers, equipment distribution and system layout/architecture.
- 4.3.3. Contact the Sites COMLINC-RIOS POC to schedule a mutually acceptable date and time for the audit, and inform the Sites and Virginia State Police of scheduled down-time
 - in order to complete the audit.
- 4.3.4. Service will be performed during Standard Business Day hours.
- 4.3.5. Collect system audit data.

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- 4.3.6. Notify the VSP NOC if malfunctioning Equipment is discovered during the audit and if that Equipment cannot be audited due to the malfunction.
- 4.3.7. Update the COMLINC-RIOS asset management database and provide the Department of Virginia state Police a copy of the data as updates and changes are applied.

4.4. Software Upgrades/Bug Fixes

- 4.4.1. SyTech will continue to assist with keeping all Windows based computers current with Operating system, security and device driver updates.
- 4.4.2. SyTech will continue to assist with any IT related problems that affect the normal operation of the RIOS software and system routers.
- 4.4.3. **New Features:** New features and enhancements will be available through the service and support contract. SyTech will consult with Virginia State Police on new features for consideration in deployment. Some new features are considered major and most are considered minor. Some of the major enhancements require separate licensing.
- 4.4.4. **Bug Fixes:** Through the Service and Support Contract software bug fixes will be applied at no additional increase in price.
- 4.4.5. **Software Upgrade Procedures:** SyTech Corporation will periodically offer Software Upgrade Packages (SUP) as necessary throughout the life cycles of the contract. The SUP will be conducted in a manner most appropriate to the nature of the software build and surrounding circumstances of the release. Confirmation of the SUP and its relevancy will be documented and discussed with VSP and the appropriate stakeholders at each site.

4.4.6. Software Installation

- 4.4.6.1. Prior to beginning any software upgrade, provide the VSP COMLINC Project Engineer with documentation regarding the relevancy and effects of the procedure. In addition, SyTech will provide a problem mitigation method to restore COMLINC-RIOS to the previous version of software if a problem occurs during the upgrade.
- 4.4.6.2. Install Enhancement Releases that may be provided by SyTech.
- 4.4.6.3. Service will be performed during standard business days.

4.4.7. Additional SyTech responsibilities:

- 4.4.7.1. Prior to beginning any software upgrade, provide VSP a detailed software migration plan with step-by-step activities and a problem mitigation plan to restore COMLINC-RIOS to the previous version of software if a problem occurs during the upgrade.
- 4.4.7.2. Provide to VSP bulletins announcing enhancement and core releases. Identify the features and capabilities that pertain to the current configuration of COMLINC-RIOS. Notify the VSP of any potential hardware or software upgrades that may be required.
- 4.4.7.3. Obtain VSP COMLINC Project Engineer permission prior to the SUP.

4.5. Inventory Management:

- 4.5.1. SyTech will set up an Inventory Management System in parallel with the Department of Virginia State Police Asset Management System.

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- 4.5.2. This service will include confirming VSP requirements for asset specific data tracking, gathering existing asset specific information from the sites, and loading and implementing a database tool with the asset specific data elements.
- 4.5.3. The delivery of this service begins once SyTech has initially loaded the database with the site-specific data elements as performed in the Inventory Management Setup. SyTech will track and manage installs, moves, additions and changes to serialized asset-specific data elements during the warranty period. SyTech will provide standard reporting on asset specific data elements as defined in section 4.5.3.1.

4.5.3.1. Included in this service:

- 4.5.3.1.1. Asset Location – Lists those assets currently in possession by specific locations such as a department (agency) or site location along with other asset specific information.
- 4.5.3.1.2. Asset Status – Provides status of assets so that the number of assets in repair, active, spare, etc. may be understood and managed accordingly.
- 4.5.3.1.3. Warranty Expiration – Advises when expiration date of warranty is due.
- 4.5.3.1.4. Spares by Location – Provides details on what types of spares and quantities are available at a given location.
- 4.5.3.1.5. Unit Data Input via bar code scanner if appropriate.
- 4.5.3.1.6. Location of equipment by name and ID.
- 4.5.3.1.7. Trouble ticket tracking system.
- 4.5.3.1.8. Ability to track all SyTech provided hardware and software.
- 4.5.3.1.9. SyTech will provide an agreed upon set of data from its Asset and Configuration Services to VSP. SyTech and VSP will agree to the content and format of this data.

5. SALES AND MARKETING:

Under this agreement the Department of Virginia State Police recognizes that as a commercial private entity, SyTech reserves the right to visit sites and solicit additional sales throughout the Commonwealth.

SyTech acknowledges that any sales of new sites or additional equipment, features or services not acknowledged or approved by the Department of Virginia State Police shall relieve and indemnify the Virginia State Police of any additional cost increase as outlined in section 1.3 and 1.4 of this contract.

6. LIMITATION OF LIABILITY:

It is agreed that, in providing the services included in this agreement, the SyTech Corporation is not an insurer, and does not guarantee that no damage or injury to persons or property will occur. The failure must not result from Customer negligence, or from fire, lightning, water damage, etc. The warranty applies only to SyTech provided products (hardware and software). All such warranties expire at the termination of the contract. All RIOS equipment shall be powered from an uninterruptible power source (UPS). SyTech Corporation provides hands-on training on site at the time of installation and will provide continuous training throughout the lifetime of the contract.

SyTech Corporation's responsibility for damage or injury to persons or property that may be caused by or arise through furnishing, installing, maintaining, servicing, monitoring or performing any obligation under the agreement will be limited only to losses proximately caused by the SyTech Corporation's negligence. In no event will the SyTech Corporation be liable for indirect, consequential, special, speculative, or remote damages.

7. OBTAINING THE SERVICE:

Questions regarding the RIOS Wide-Area Interoperability System or system repair request shall follow these steps to obtain the service:

Contact SyTech Service Representative providing the following information:

- (1) Site Name.
- (2) Name of person making the call.
- (3) Help required for what part/section of the system.
- (4) Software version currently using.
- (5) Description of the symptom and problem.

Telephone assistance may be obtained by dialing 703-941-7887 or 1-800-385-8977

Direct Telephone Assistance shall be available:

Monday to Friday – 8 AM to 6 PM ETS

Twenty-Four Hour SyTech Operator Assistance is available:

Sunday thru Saturday – 5 PM to 8 AM ETS

Operator will answer call and Service Technician will return call within one hour

Weekends and Holidays Assistance is available:

Service Technician on call 24-hours a day via cell phone.

Virginia State Police will be given a minimum three (3) cell numbers for three technicians.

SyTech Corporation shall provide services in accordance with the Maintenance and Support Plan and any special provisions as written in any new contracts and/or task orders.

The Maintenance and Support contract will become active only after the signature is executed on Page 2 in space titled: "Approval for SyTech Corporation" and upon continuance of approval by SyTech Corporation. No waiver or modification of any terms or conditions on this agreement shall be binding on the SyTech Corporation unless made in writing and signed by an authorized manager of the SyTech Corporation.

SECTION B

METHOD OF PAYMENT: The Contractor shall submit one invoice for the annual payment which will be paid in advance upon receipt of an invoice. This amount is due 30 days after the signing of the Maintenance and Support Contract. The invoice must include the contract number and/or applicable purchase order number. The invoice shall be forwarded directly to Virginia State Police, Accounts Payable, P. O. Box 27472, Richmond, VA 23261. Method of payment will be by check or direct deposit.

SECTION C

GENERAL TERMS AND CONDITIONS

- A. **VENDORS MANUAL**: This solicitation is subject to the provisions of the Commonwealth of Virginia *Vendors Manual* and any changes or revisions thereto, which are hereby incorporated into this contract in their entirety. The procedure for filing contractual claims is in section 7.19 of the *Vendors Manual*. A copy of the manual is normally available for review at the purchasing office and is accessible on the Internet at www.eva.virginia.gov under "Vendors Manual" on the vendors tab.
- B. **APPLICABLE LAWS AND COURTS**: This solicitation and any resulting contract shall be governed in all respects by the laws of the Commonwealth of Virginia and any litigation with respect thereto shall be brought in the courts of the Commonwealth. The agency and the contractor are encouraged to resolve any issues in controversy arising from the award of the contract or any contractual dispute using Alternative Dispute Resolution (ADR) procedures (*Code of Virginia*, § 2.2-4366). ADR procedures are described in Chapter 9 of the *Vendors Manual*. The contractor shall comply with all applicable federal, state and local laws, rules and regulations.
- C. **ANTI-DISCRIMINATION**: By submitting their (bids/proposals), (bidders/offerors) certify to the Commonwealth that they will conform to the provisions of the Federal Civil Rights Act of 1964, as amended, as well as the Virginia Fair Employment Contracting Act of 1975, as amended, where applicable, the Virginians With Disabilities Act, the Americans With Disabilities Act and § 2.2-4311 of the *Virginia Public Procurement Act (VPPA)*. If the award is made to a faith-based organization, the organization shall not discriminate against any recipient of goods, services, or disbursements made pursuant to the contract on the basis of the recipient's religion, religious belief, refusal to participate in a religious practice, or on the basis of race, age, color, gender or national origin and shall be subject to the same rules as other organizations that contract with public bodies to account for the use of the funds provided, however, if the faith-based organization segregates public funds into separate accounts, only the accounts and programs funded with public funds shall be subject to audit by the public body. (*Code of Virginia*, § 2.2-4343.1E).

In every contract over \$10,000 the provisions in 1. and 2. below apply:

1. During the performance of this contract, the contractor agrees as follows:
 - a. The contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment, except where there is a bona fide occupational qualification reasonably necessary to the normal operation of the contractor. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause.
 - b. The contractor, in all solicitations or advertisements for employees placed by or on behalf of the contractor, will state that such contractor is an equal opportunity employer.
 - c. Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient for the purpose of meeting these requirements.
 2. The contractor will include the provisions of 1. above in every subcontract or purchase order over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.
- D. **ETHICS IN PUBLIC CONTRACTING**: By submitting their bids, bidders certify that their bids are made without collusion or fraud and that they have not offered or received any kickbacks or inducements from any other bidder, supplier, manufacturer or subcontractor in connection with

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their bid, and that they have not conferred on any public employee having official responsibility for this procurement transaction any payment, loan, subscription, advance, deposit of money, services or anything of more than nominal value, present or promised, unless consideration of substantially equal or greater value was exchanged

- E. **IMMIGRATION REFORM AND CONTROL ACT OF 1986**: By entering into a written contract with the Commonwealth of Virginia, the Contractor certifies that the Contractor does not, and shall not during the performance of the contract for goods and services in the Commonwealth, knowingly employ an unauthorized alien as defined in the federal Immigration Reform and Control Act of 1986.
- F. **DEBARMENT STATUS**: By participating in this procurement, the vendor certifies that they are not currently debarred by the Commonwealth of Virginia from submitting a response for the type of goods and/or services covered by this solicitation,. Vendor further certifies that they are not debarred from filling any order or accepting any resulting order, or that they are an agent of any person or entity that is currently debarred by the Commonwealth of Virginia.
- G. **ANTITRUST**: By entering into a contract, the contractor conveys, sells, assigns, and transfers to the Commonwealth of Virginia all rights, title and interest in and to all causes of action it may now have or hereafter acquire under the antitrust laws of the United States and the Commonwealth of Virginia, relating to the particular goods or services purchased or acquired by the Commonwealth of Virginia under said contract.
- H. **MANDATORY USE OF STATE FORM AND TERMS AND CONDITIONS FOR IFBs**
1. Failure to submit a bid on the official state form provided for that purpose shall be a cause for rejection of the bid. Modification of or additions to any portion of the Invitation for Bids may be cause for rejection of the bid; however, the Commonwealth reserves the right to decide, on a case by case basis, in its sole discretion, whether to reject such a bid as nonresponsive. As a precondition to its acceptance, the Commonwealth may, in its sole discretion, request that the bidder withdraw or modify nonresponsive portions of a bid which do not affect quality, quantity, price, or delivery. No modification of or addition to the provisions of the contract shall be effective unless reduced to writing and signed by the parties.
- I. **CLARIFICATION OF TERMS**: If any prospective bidder has questions about the specifications or other solicitation documents, the prospective bidder should contact the buyer whose name appears on the face of the solicitation no later than five working days before the due date. Any revisions to the solicitation will be made only by addendum issued by the buyer.
- J. **PAYMENT**:
1. **To Prime Contractor**:
 - a. Invoices for items ordered, delivered and accepted shall be submitted by the contractor directly to the payment address shown on the purchase order/contract. All invoices shall show the state contract number and/or purchase order number; social security number (for individual contractors) or the federal employer identification number (for proprietorships, partnerships, and corporations).
 - b. Any payment terms requiring payment in less than 30 days will be regarded as requiring payment 30 days after invoice or delivery, whichever occurs last. This shall not affect offers of discounts for payment in less than 30 days, however.
 - c. All goods or services provided under this contract or purchase order, that are to be paid for with public funds, shall be billed by the contractor at the contract price, regardless of which public agency is being billed.
 - d. The following shall be deemed to be the date of payment: the date of postmark in all cases where payment is made by mail, or the date of offset when offset proceedings have been instituted as authorized under the Virginia Debt Collection Act.

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- e. **Unreasonable Charges.** Under certain emergency procurements and for most time and material purchases, final job costs cannot be accurately determined at the time orders are placed. In such cases, contractors should be put on notice that final payment in full is contingent on a determination of reasonableness with respect to all invoiced charges. Charges which appear to be unreasonable will be researched and challenged, and that portion of the invoice held in abeyance until a settlement can be reached. Upon determining that invoiced charges are not reasonable, the Commonwealth shall promptly notify the contractor, in writing, as to those charges which it considers unreasonable and the basis for the determination. A contractor may not institute legal action unless a settlement cannot be reached within thirty (30) days of notification. The provisions of this section do not relieve an agency of its prompt payment obligations with respect to those charges which are not in dispute (*Code of Virginia, § 2.2-4363*).
2. To Subcontractors:
- a. A contractor awarded a contract under this solicitation is hereby obligated:
 - (1) To pay the subcontractor(s) within seven (7) days of the contractor's receipt of payment from the Commonwealth for the proportionate share of the payment received for work performed by the subcontractor(s) under the contract; or
 - (2) To notify the agency and the subcontractor(s), in writing, of the contractor's intention to withhold payment and the reason.
 - b. The contractor is obligated to pay the subcontractor(s) interest at the rate of one percent per month (unless otherwise provided under the terms of the contract) on all amounts owed by the contractor that remain unpaid seven (7) days following receipt of payment from the Commonwealth, except for amounts withheld as stated in (2) above. The date of mailing of any payment by U. S. Mail is deemed to be payment to the addressee. These provisions apply to each sub-tier contractor performing under the primary contract. A contractor's obligation to pay an interest charge to a subcontractor may not be construed to be an obligation of the Commonwealth.
3. Each prime contractor who wins an award in which provision of a SWaM procurement plan is a condition to the award, shall deliver to the contracting agency or institution, on or before request for final payment, evidence and certification of compliance (subject only to insubstantial shortfalls and to shortfalls arising from subcontractor default) with the SWaM procurement plan. Final payment under the contract in question may be withheld until such certification is delivered and, if necessary, confirmed by the agency or institution, or other appropriate penalties may be assessed in lieu of withholding such payment.
4. The Commonwealth of Virginia encourages contractors and subcontractors to accept electronic and credit card payments.
- K. **PRECEDENCE OF TERMS:** The following General Terms and Conditions *VENDORS MANUAL, APPLICABLE LAWS AND COURTS, ANTI-DISCRIMINATION, ETHICS IN PUBLIC CONTRACTING, IMMIGRATION REFORM AND CONTROL ACT OF 1986, DEBARMENT STATUS, ANTITRUST, MANDATORY USE OF STATE FORM AND TERMS AND CONDITIONS, CLARIFICATION OF TERMS, PAYMENT* shall apply in all instances. In the event there is a conflict between any of the other General Terms and Conditions and any Special Terms and Conditions in this solicitation, the Special Terms and Conditions shall apply.
- L. **QUALIFICATIONS OF BIDDERS:** The Commonwealth may make such reasonable investigations as deemed proper and necessary to determine the ability of the bidder to perform the services/furnish the goods and the bidder shall furnish to the Commonwealth all such information and data for this purpose as may be requested. The Commonwealth reserves the right to inspect bidder's physical facilities prior to award to satisfy questions regarding the bidder's capabilities. The Commonwealth further reserves the right to reject any bid if the evidence submitted by, or investigations of, such bidder fails to satisfy the Commonwealth that such bidder is properly

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qualified to carry out the obligations of the contract and to provide the services and/or furnish the goods contemplated therein.

- M. **TESTING AND INSPECTION:** The Commonwealth reserves the right to conduct any test/inspection it may deem advisable to assure goods and services conform to the specifications.
- N. **ASSIGNMENT OF CONTRACT:** A contract shall not be assignable by the contractor in whole or in part without the written consent of the Commonwealth.
- O. **CHANGES TO THE CONTRACT:** Changes can be made to the contract in any of the following ways:
1. The parties may agree in writing to modify the terms, conditions, or scope of the contract. Any additional goods or services to be provided shall be of a sort that is ancillary to the contract goods or services, or within the same broad product or service categories as were included in the contract award. Any increase or decrease in the price of the contract resulting from such modification shall be agreed to by the parties as a part of their written agreement to modify the scope of the contract.
 2. The Purchasing Agency may order changes within the general scope of the contract at any time by written notice to the contractor. Such written notice shall be executed by the Contractor to evidence its acceptance of the changes. Changes within the scope of the contract include, but are not limited to, things such as services to be performed, the method of packing or shipment, and the place of delivery or installation. The contractor shall comply with the notice upon receipt, unless the contractor intends to claim an adjustment to compensation, schedule, or other contractual impact that would be caused by complying with such notice, in which case the contractor shall, in writing, promptly notify the Purchasing Agency of the adjustment to be sought, and before proceeding to comply with the notice, shall await the Purchasing Agency's written decision affirming, modifying, or revoking the prior written notice. If the Purchasing Agency decides to issue a notice that requires an adjustment to compensation, the contractor shall be compensated for any additional costs incurred as the result of such order and shall give the Purchasing Agency a credit for any savings. Said compensation shall be determined by one of the following methods:
 - a. By mutual agreement between the parties in writing; or
 - b. By agreeing upon a unit price or using a unit price set forth in the contract, if the work to be done can be expressed in units, and the contractor accounts for the number of units of work performed, subject to the Purchasing Agency's right to audit the contractor's records and/or to determine the correct number of units independently; or
 - c. By ordering the contractor to proceed with the work and keep a record of all costs incurred and savings realized. A markup for overhead and profit may be allowed if provided by the contract. The same markup shall be used for determining a decrease in price as the result of savings realized. The contractor shall present the Purchasing Agency with all vouchers and records of expenses incurred and savings realized. The Purchasing Agency shall have the right to audit the records of the contractor as it deems necessary to determine costs or savings. Any claim for an adjustment in price under this provision must be asserted by written notice to the Purchasing Agency within thirty (30) days from the date of receipt of the written order from the Purchasing Agency. If the parties fail to agree on an amount of adjustment, the question of an increase or decrease in the contract price or time for performance shall be resolved in accordance with the procedures for resolving disputes provided by the Disputes Clause of this contract or, if there is none, in accordance with the disputes provisions of the Commonwealth of Virginia *Vendors Manual*. Neither the existence of a claim nor a dispute resolution process, litigation or any other provision of this contract shall excuse the contractor from promptly complying with the changes ordered by the Purchasing Agency or with the performance of the contract generally.
- P. **DEFAULT:** In case of failure to deliver goods or services in accordance with the contract terms and conditions, the Commonwealth, after due oral or written notice, may procure them from other

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sources and hold the contractor responsible for any resulting additional purchase and administrative costs. This remedy shall be in addition to any other remedies which the Commonwealth may have.

- Q. **TAXES:** Sales to the Commonwealth of Virginia are normally exempt from State sales tax. State sales and use tax certificates of exemption, Form ST-12, will be issued upon request. Deliveries against this contract shall usually be free of Federal excise and transportation taxes. The Commonwealth's excise tax exemption registration number is 54-73-0076K.
- R. **USE OF BRAND NAMES:** Unless otherwise provided in this solicitation, the name of a certain brand, make or manufacturer does not restrict bidders to the specific brand, make or manufacturer named, but conveys the general style, type, character, and quality of the article desired. Any article which the public body, in its sole discretion, determines to be the equivalent of that specified, considering quality, workmanship, economy of operation, and suitability for the purpose intended, shall be accepted. The bidder is responsible to clearly and specifically identify the product being offered and to provide sufficient descriptive literature, catalog cuts and technical detail to enable the Commonwealth to determine if the product offered meets the requirements of the solicitation. This is required even if offering the exact brand, make or manufacturer specified. Normally in competitive sealed bidding only the information furnished with the bid will be considered in the evaluation. Failure to furnish adequate data for evaluation purposes may result in declaring a bid nonresponsive. Unless the bidder clearly indicates in its (bid/proposal) that the product offered is an equivalent product, such (bid/proposal) will be considered to offer the brand name product referenced in the solicitation.
- S. **TRANSPORTATION AND PACKAGING:** By submitting their bids, all bidders certify and warrant that the price offered for FOB destination includes only the actual freight rate costs at the lowest and best rate and is based upon the actual weight of the goods to be shipped. Except as otherwise specified herein, standard commercial packaging, packing and shipping containers shall be used. All shipping containers shall be legibly marked or labeled on the outside with purchase order number, commodity description, and quantity.
- T. **INSURANCE:** By signing and submitting a bid under this solicitation, the bidder certifies that if awarded the contract, it will have the following insurance coverage at the time the contract is awarded. For construction contracts, if any subcontractors are involved, the subcontractor will have workers' compensation insurance in accordance with §§ 2.2-4332 and 65.2-800 et seq. of the *Code of Virginia*. The bidder further certifies that the contractor and any subcontractors will maintain these insurance coverage during the entire term of the contract and that all insurance coverage will be provided by insurance companies authorized to sell insurance in Virginia by the Virginia State Corporation Commission.

MINIMUM INSURANCE COVERAGES AND LIMITS REQUIRED FOR MOST CONTRACTS:

1. Workers' Compensation - Statutory requirements and benefits. Coverage is compulsory for employers of three or more employees, to include the employer. Contractors who fail to notify the Commonwealth of increases in the number of employees that change their workers' compensation requirements under the *Code of Virginia* during the course of the contract shall be in noncompliance with the contract.
 2. Employer's Liability - \$100,000.
 2. Commercial General Liability - \$1,000,000 per occurrence and \$2,000,000 in the aggregate. Commercial General Liability is to include bodily injury and property damage, personal injury and advertising injury, products and completed operations coverage. The Commonwealth of Virginia must be named as an additional insured and so endorsed on the policy.
- U. **ANNOUNCEMENT OF AWARD:** Upon the award or the announcement of the decision to award a contract as a result of this solicitation, the purchasing agency will publicly post such notice on the DGS/DPS eVA VBO (www.eva.virginia.gov) for a minimum of 10 days.

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- V. **DRUG-FREE WORKPLACE:** During the performance of this contract, the contractor agrees to (i) provide a drug-free workplace for the contractor's employees; (ii) post in conspicuous places, available to employees and applicants for employment, a statement notifying employees that the unlawful manufacture, sale, distribution, dispensation, possession, or use of a controlled substance or marijuana is prohibited in the contractor's workplace and specifying the actions that will be taken against employees for violations of such prohibition, (iii) state in all solicitations or advertisements for employees placed by or on behalf of the contractor that the contractor maintains a drug-free workplace; and (iv) include the provisions of the foregoing clauses in every subcontract or purchase order of over \$10,000, so that the provisions will be binding upon each subcontractor or vendor.

For the purposes of this section, "drug-free workplace" means a site for the performance of work done in connection with a specific contract awarded to a contractor, the employees of whom are prohibited from engaging in the unlawful manufacture, sale, distribution, dispensation, possession or use of any controlled substance or marijuana during the performance of the contract.

- W. **NONDISCRIMINATION OF CONTRACTORS:** A bidder or contractor shall not be discriminated against in the solicitation or award of this contract because of race, religion, color, sex, national origin, age, disability, faith-based organizational status, any other basis prohibited by state law relating to discrimination in employment or because the bidder employs ex-offenders unless the state agency, department or institution has made a written determination that employing ex-offenders on the specific contract is not in its best interest. If the award of this contract is made to a faith-based organization and an individual, who applies for or receives goods, services, or disbursements provided pursuant to this contract objects to the religious character of the faith-based organization from which the individual receives or would receive the goods, services, or disbursements, the public body shall offer the individual, within a reasonable period of time after the date of his objection, access to equivalent goods, services, or disbursements from an alternative provider.

- X. **eVA BUSINESS-TO-GOVERNMENT VENDOR REGISTRATION, CONTRACTS AND ORDERS:** The eVA Internet electronic procurement solution, web site portal www.eVA.virginia.gov, streamlines and automates government purchasing activities in the Commonwealth. The eVA portal is the gateway for vendors to conduct business with state agencies and public bodies. All vendors desiring to provide goods and/or services to the Commonwealth shall participate in the eVA Internet e-procurement solution by completing the free eVA Vendor Registration. All bidders must register in eVA and pay the Vendor Transaction Fees specified below; failure to register will result in the bid being rejected

Vendor transaction fees are determined by the date the original purchase order is issued and the current fees are as follows:

- a. For orders issued July 1, 2014, and after, the Vendor Transaction Fee is:
- (i) DSBSD-certified Small Businesses: 1%, capped at \$500 per order.
 - (ii) Businesses that are not DSBSD-certified Small Businesses: 1%, capped at \$1,500 per order.
- b. Refer to Special Term and Condition "eVA Orders and Contracts" to identify the number of purchase orders that will be issued as a result of this solicitation/contract with the eVA transaction fee specified above assessed for each order.

The specified vendor transaction fee will be invoiced, by the Commonwealth of Virginia Department of General Services, typically within 60 days of the order issue date. Any adjustments (increases/decreases) will be handled through purchase order changes.

- Y. **AVAILABILITY OF FUNDS:** It is understood and agreed between the parties herein that the agency shall be bound hereunder only to the extent of the funds available or which may hereafter become available for the purpose of this agreement.

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- Z. **SET-ASIDES IN ACCORDANCE WITH THE SMALL BUSINESS ENHANCEMENT AWARD PRIORITY:** This solicitation is set-aside for award priority to DSBSD-certified micro businesses or small businesses when designated as "Micro Business Set-Aside Award Priority" or "Small Business Set-Aside Award Priority" accordingly in the solicitation. DSBSD-certified micro businesses or small businesses also includes DSBSD-certified women-owned and minority-owned businesses when they have received the DSBSD small business certification. For purposes of award, bidders shall be deemed micro businesses or small businesses if and only if they are certified as such by DSBSD on the due date for receipt of bids.
- AA. **BID PRICE CURRENCY:** Unless stated otherwise in the solicitation, bidders shall state bid prices in US dollars.
- BB. **AUTHORIZATION TO CONDUCT BUSINESS IN THE COMMONWEALTH:** A contractor organized as a stock or nonstock corporation, limited liability company, business trust, or limited partnership or registered as a registered limited liability partnership shall be authorized to transact business in the Commonwealth as a domestic or foreign business entity if so required by Title 13.1 or Title 50 of the *Code of Virginia* or as otherwise required by law. Any business entity described above that enters into a contract with a public body pursuant to the *Virginia Public Procurement Act* shall not allow its existence to lapse or its certificate of authority or registration to transact business in the Commonwealth, if so required under Title 13.1 or Title 50, to be revoked or cancelled at any time during the term of the contract. A public body may void any contract with a business entity if the business entity fails to remain in compliance with the provisions of this section.

SECTION D

SPECIAL TERMS AND CONDITIONS

- A. **AUDIT:** The contractor shall retain all books, records, and other documents relative to this contract for five (5) years after final payment, or until audited by the Commonwealth of Virginia, whichever is sooner. The agency, its authorized agents, and/or state auditors shall have full access to and the right to examine any of said materials during said period.
- B. **CANCELLATION OF CONTRACT:** Except as noted in the Scope of Work, the purchasing agency reserves the right to cancel and terminate any resulting contract, in part or in whole, without penalty, upon 60 days written notice to the contractor. In the event the initial contract period is for more than 12 months, the resulting contract may be terminated by either party, without penalty, after the initial 12 months of the contract period upon 60 days written notice to the other party. Any contract cancellation notice shall not relieve the contractor of the obligation to deliver and/or perform on all outstanding orders issued prior to the effective date of cancellation.
- C. **eVA BUSINESS-TO-GOVERNMENT CONTRACTS AND ORDERS:** This contract will result in one purchase order with the eVA transaction fee specified below assessed for each order.
- a. For orders issued July 1, 2014, and after, the Vendor Transaction Fee is:
 - (i) DSBSD-certified Small Businesses: 1%, capped at \$500 per order.
 - (ii) Businesses that are not DSBSD-certified Small Businesses: 1%, capped at \$1,500 per order.
 - b. The specified vendor transaction fee will be invoiced by the Commonwealth of Virginia Department of General Services, typically within 60 days of the order issue date. Any adjustments (increases/decreases) will be handled through purchase order changes.

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- c. The eVA Internet electronic procurement solution, website portal www.eva.virginia.gov, streamlines and automates government purchasing activities in the Commonwealth. The portal is the gateway for vendors to conduct business with state agencies and public bodies.
- D. **PRIME CONTRACTOR RESPONSIBILITIES:** The contractor shall be responsible for completely supervising and directing the work under this contract and all subcontractors that he may utilize. Subcontractors who perform work under this contract shall be responsible to the prime contractor. The contractor agrees that he is as fully responsible for the acts and omissions of his subcontractors and of persons employed by them as he is for the acts and omissions of his own employees. Contractor is obligated to comply with applicable standards of normal engineering care in the performance of the services and covenants that the services will be performed in accordance with the specifications set forth in the statement of work. Written notice of non-conforming services must be promptly given by Commonwealth to Contractor. Contractor's obligations arising from non-conforming services as set forth in this paragraph shall extend for a term commencing at the substantial completion of such services under a work authorization or work order and ending one (1) year later. Contractor hereby disclaims all other warranties both express and implied.
- E. **SUBCONTRACTS:** No portion of the work shall be subcontracted without prior written consent of the purchasing agency. In the event that the contractor desires to subcontract some part of the work specified herein, the contractor shall furnish the purchasing agency the names, qualifications and experience of their proposed subcontractors. The contractor shall, however, remain fully liable and responsible for the work to be done by its subcontractor(s) and shall assure compliance with all requirements of the contract.
- F. **WORK SITE DAMAGES:** Any damage to existing utilities, equipment or finished surfaces resulting from the Contractor's negligent performance of this contract shall be repaired to the Commonwealth's reasonable satisfaction at the contractor's expense.
- G. **FORCE MAJEURE:** An event of "Force Majeure" happens when an event beyond the control of the party claiming Force Majeure prevents such party from fulfilling its obligations. An event of Force Majeure includes, without limitation, acts of God (including floods, hurricanes and other adverse weather), war, riot, civil disorder, acts or threatened acts of terrorism, disease, epidemic, strikes and labor disputes, actions or inactions of government or other authorities, law enforcement actions, curfews, closure of transportation systems or other unusual travel difficulties, or inability to provide a safe working environment for employees. In the event of Force Majeure, the obligations of Contractor to perform the services shall be suspended for the duration of the event of Force Majeure.
- H. **SECURITY:** The Contractor shall comply with the following VSP Security Policies and Procedures and may be subject to security inspections:

The Contractor and all employed personnel are subject to VSP's standard Contractor's background check and drug testing. The Contractor and all employees must not have a criminal history and must be insured.

- I. **UNAPPROVED WORK (OUT OF SCOPE WORK):** The Contractor shall not be entitled to an increase in the contract price with respect to any services or work performed that is not required by the Contract as amended, modified, or supplemented as provided in Paragraph O. A change in the contract price shall be accomplished only by a written change order. Accordingly, no course of conduct or dealings between the parties, no expressed or implied acceptance of extra work or services, and no claim that the Commonwealth has been unjustly enriched by any extra work or services shall be the basis of any claim for an increase in any amount due under the Contract.

Correspondingly, the Contractor shall not be required to provide any services or work not required by the Contract as amended, modified, or supplemented as provided in this paragraph and Paragraph O unless and until the parties have executed an appropriate a change order.

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ADDENDUM 1

SyTech Maintenance and Support Contract

Explanation of what is covered under repair and replacement with respect to SyTech Proprietary Hardware, Software, and Firmware:

1. Hardware:
 - a. Proprietary SyTech hardware associated with the COMLINC RIOS systems regardless of age and date of install shall be covered under the agreement for repair and replacement as required to keep the sites in operation for a period of one year from the date of the contract document.: The Proprietary SyTech Hardware are; (1) I/O Chassis, (2) TCI Cards, (3) TCI Chassis, and (4) CCU Kits.
 - b. Non-Proprietary SyTech Hardware which is new and specific to the COMLINC RIOS system shall be fully covered under the normal Warranty period of 1 year by SyTech: Examples of non-Proprietary hardware include desktop client stations/computers, routers, switches, UPS systems, power strips etc.
2. Software/Firmware:
 - a. All SyTech proprietary software including RIOS Client, Server and associated supporting software, regardless of deployment date shall be fully covered under the agreement for bug fixes, compatibility with operating systems, and compatibility with each version of RIOS software deployed.
3. RIOS Lite and Smartphones:
 - a. SyTech under this agreement will be responsible for software and support of all deployed RIOS Lite software which is being used with the RIOS Server version of 3.44 or higher but will not be responsible for hardware failures of specific smartphones (iPhone, Androids etc.)
4. Agency owned hardware:
 - a. Any agency owned or purchased hardware (desktop computers, workstations, laptops, smartphones) in which the agency has chosen to install and use RIOS Client software on, will be the responsibility of the agency for hardware repair. SyTech will offer either a separate maintenance or time/materials contract.
 - b. SyTech will support software issues only when it is determined to be a global bug or programming issue not specific to that agency owned hardware.