

Interoperability TECHNOLOGY Today

A Resource For the Emergency Response Community

Summer 2010

Personal Identity Verification-Interoperable/First Responder Authentication Credential Standard Enables Critical Collaboration Among Emergency Response Communities

For the average person, life in today's technologically-advanced world is full of usernames and passwords. Individuals are burdened with the task of remembering which password should be used for which system. For emergency response officials (EROs), this burden is compounded by the high-pressure situations they encounter, the conditions under which they work, and the various entities with which they exchange information. During large-scale emergencies, it is imperative that incident commanders quickly and easily identify and trust ERO credentials from different regions or agencies. Despite this need, several identity management challenges exist which prohibit EROs from achieving an effective level of trusted collaboration.

To address these challenges, local, state, and regional EROs are working to incorporate the Personal Identity Verification-Interoperable (PIV-I)/First Responder Authentication Credential (FRAC) standard into their response protocols. This standard provides trusted and electronically-validated identification and attribute (qualification, authorization, certification, or privilege) information across local, state, regional (e.g., fusion centers), and Federal levels. The Command, Control and Interoperability (CCI) Division in the Science and Technology Directorate of the U.S. Department of Homeland Security; the Federal Emergency Management Agency (FEMA) Office of the National Capital Region Coordination (NCRC); the FEMA Office of the Chief Security Officer; and the FEMA Office of the Chief Information Security Officer have partnered to convene the PIV-I/FRAC Technology Transition Working Group (TTWG). Composed of representatives from roughly 12 local, state, and regional emergency management areas, the TTWG will explore PIV-I credentials as the primary identity credential for EROs.

Leading the Way Toward Trusted Collaboration

While Federal agencies are rapidly deploying secure common identification standards based on guidance from the White House and other Federal entities, the TTWG is paving the way toward robust interoperability among local, state, regional, and Federal EROs by using PIV-I/FRAC standards.

PIV-I represents guidance developed by the Federal Government for a trusted identity and credentialing standard for non-Federal issuers. Non-Federal entities that elect to conform to the PIV-I standard will be trusted by and interoperable with Federal agencies at various assurance levels. To this point, the TTWG hopes that the PIV-I/FRAC standard will drive a long-term, routine solution for cyber identity and attribute management that ensures trusted collaboration among the local, state, and regional emergency response communities.

The PIV-I/FRAC TTWG emphasizes that trust is the central characteristic of PIV-I compliant identification credentials. Karyn Higa-Smith—Program Manager of Identity Management, Privacy, and Multi-Level Information Dissemination within CCI—said, “By adhering to the PIV-I standards for credentialing, you are telling others that you are accountable and can be trusted—and you will also be able to easily identify others who can be trusted.”

The TTWG will create one voice to communicate with policy makers and develop solutions appropriate for the emergency response community, primarily regarding F/ERO attributes. Many TTWG members have already implemented innovative and secure identity management solutions in their own jurisdictions. Members are adapting to the national standards for credentialing and are participating in pilots to determine how to become PIV-I/FRAC interoperable in their own localities. Each member has agreed to share best practices, lessons learned, and success stories with other TTWG participants. The TTWG will then incorporate the participants' experiences using the credentials in pilot demonstrations testing various emergency scenarios.

CCI's Supporting Role in Enhancing Interoperability

CCI plays an integral role in TTWG's success by providing research, development, testing, and evaluation (RDT&E) to enhance capabilities with standard and interoperable technologies. As part of the TTWG, CCI documents and consolidates information garnered from pilot demonstrations and group discussions to further fine tune the collaborative approach towards trusted cyber identity and attribute management across local, state, regional, and Federal agencies.

CCI is currently gathering capability requirements from the TTWG members and will be supporting the TTWG members in pilot efforts. It will funnel these requirements and other feedback into testbed research and development support based on agency requirements. The CCI Identity Management Testbed will be conducting RDT&E on the local, state, and regional emergency management scenarios using trusted credentials. These efforts will help determine interoperable solutions that will improve the emergency management process in its entirety.

Challenges Remain

Implementing PIV-I comes with its own challenges. The cost of implementation is neither easy nor inexpensive. Technology, creation, and maintenance of the identity/attribute repository, or database system, and commitment to standards all incur significant costs. However, for entities that need to collaborate across domains—including local, state, and regional fusion centers—the collaborative benefits of using interoperable and trusted PIV-I credentials far outweigh the costs.

“The goal is to achieve interoperability with standards-based solutions,” Higa-Smith said. “This process is not easy; it's not cheap. But once you come out on the other side, you're better for it.”

Various grants are available to offset the cost of implementing PIV-I credentials. Some TTWG members have received state grant funding to realize their goal of interoperability.

To learn more about the PIV-I/FRAC standard, please contact Karyn Higa-Smith at CCI: Karyn.Higa-Smith@dhs.gov or FEMA-FRACSupport@dhs.gov.

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About Interoperability TECHNOLOGY Today

Interoperability Technology Today is published quarterly by the Science and Technology Directorate's Command, Control and Interoperability (CCI) Division at no cost to subscribers. Its mission is to provide the emergency response community, policy makers, and local officials with information about interoperability initiatives nationwide, best practices, and lessons learned.

CCI interoperability programs address both data and voice interoperability. CCI is creating the capacity for increased levels of interoperability by developing tools, best practices, technologies, and methodologies that emergency response agencies can immediately put into effect. CCI is also improving incident response and recovery by developing messaging standards that help emergency responders manage incidents and exchange information in real time.

Through a practitioner-driven approach, CCI creates and deploys information resources—standards, frameworks, tools, and technologies—to enable seamless and secure interactions among homeland security stakeholders. With its Federal partners, CCI is working to strengthen capabilities to communicate, share, visualize, analyze, and protect information.

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UPCOMING EVENTS

Events & Conferences

Association for Public Safety Communications Officials (APCO) International 76h Annual Conference and Exposition

August 1-5, 2010
Houston, Texas
<http://www.apcointl.org/>

International Association of Fire Chiefs (IAFC)—Fire Rescue International 2010

August 25-28, 2010
Chicago, Illinois
www.iafc.org

International Association of Chiefs of Police (IACP)

October 22-27, 2010
Orlando, Florida
<http://www.theiacpconference.org/iacp2010/public/enter.aspx>



DIRECTOR'S MESSAGE

By Dr. David Boyd

In terms of securing our Nation, the whole is greater than the sum of its parts. Threats to our homeland are not thwarted by research, development, testing, and evaluation based solely within our U.S. boundaries. Natural and man-made disasters are not dictated by country lines. Preparing for, responding to, and recovering from hurricanes, earthquakes, and volcanic eruptions involve the coordinated efforts of international organizations as we continue our work to secure our Nation's way of life.

With this understanding, the Command, Control and Interoperability (CCI) Division in the Science and Technology Directorate of the U.S. Department of Homeland Security is establishing crucial relationships with government agencies, research organizations, and academia throughout the world. These partnerships allow CCI to gain a vast perspective regarding how researchers around the globe solve the most challenging homeland security problems. These efforts are expected to build an enduring, broadly based coalition of organizations that will contribute to the development and application of comprehensive information management and analysis tools focused on preparing for, preventing, and responding to natural and manmade disasters and terrorist incidents. Such coalitions enable organizations to share and jointly benefit from individual efforts.

International partnerships prove to be especially fruitful in the area of basic and futures research (BFR). Our counterparts in the United Kingdom (UK), Canada, Germany, Sweden, and France have a great interest in and need for sharing research results in the areas of data and visual analytics. Detailed descriptions and discussions on CCI programs in these areas are the next step in accomplishing a mission-critical exchange of technical and operational information benefiting all parties. Furthermore, such exchanges will ultimately lead to the creation of joint research and development programs. Joint programs are cost-effective and administratively efficient, as they enable all parties to share development costs and operational lessons learned. These programs also create common standards for technology application and use.

Collaboration Across the Globe

Some examples of ongoing collaborative international activities may be found in the U.S.-German Visual Analytics for Security Applications (VASA) program, the UK Visualization Analytics Consortium (UKVAC), and U.S.-UK research in the area of Anomaly Detection.

The U.S.-German VASA program is a three-year project managed by CCI/BFR, Purdue University of West Lafayette, Indiana, and the University of Konstanz in Konstanz, Germany, that will leverage the resources of these two countries and include industrial participation. The VASA program will focus on the cascading effects of terrorist incidents or natural and man-made disasters on critical infrastructures in the U.S. and Germany. The program addresses data infrastructures encompassing power grids, cyber infrastructure, food supply, and transportation.

The UKVAC was established by CCI/BFR and the UK Home Office in an effort to facilitate development activity in the UK to complement the ongoing data and visual analytics research in the U.S. Comprised of a consortium bringing together five UK universities, the UKVAC will demonstrate the success of this U.S.-UK union. Both countries have extensive research already underway in data and visual analytics that is focused on interpretation and security. The results of this union will include student exchanges, complimentary education and training programs, and collaborative research projects. A similar consortium is currently being developed in Canada.

CCI/BFR has engaged with the UK Home Office and Research Councils UK (RCUK) in a collaborative research initiative in Anomaly Detection, which refers to pre-indicators of threats. Conversations with the UK have led the BFR team to begin organizing an Anomaly Detection Sandpit. A Sandpit is an innovative and free-thinking event involving a group of 20 to 30 people from diverse backgrounds and disciplines convened for an intensive five-day workshop. The Sandpit aims to immerse the participants in an exciting interactive collaborative environment in an effort to uncover innovative solutions to cross-disciplinary problems.



Strategic Resource Group Enhances Virtual USA Progress

Imagine the immense improvement the emergency response community would experience when making critical decisions during emergencies were information-sharing practices to significantly improve. Practitioners at all levels would have immediate access to the critical information needed to help save lives, while emergency responders would regularly participate in input and feedback-driven forums. The Command, Control and Interoperability (CCI) Division has created the Virtual USA (vUSA) initiative—bringing all of these possibilities into reality.

CCI is leading the collaborative vision of vUSA, which creates a cost-effective nationwide capability that significantly improves information sharing and decision making during emergencies and day-to-day operations. vUSA enables practitioners at all levels of government to share information and collaborate while maintaining control of their data and systems. vUSA recognizes that all incidents begin at the local level and therefore any solution that is developed has to work toward the seamless integration of local, tribal, state, and Federal practitioners. With this in mind, vUSA works with states and their localities to help them create capabilities that are best suited for their state, and in turn will integrate these regions into a nationwide vUSA framework.

This collaborative approach led CCI to create the vUSA Strategic Resource Group (SRG). The SRG is a voluntary, collaborative body of emergency preparedness and response practitioners representing a wide array of disciplines and all levels of the government. SRG members are dedicated to cultivating awareness and understanding to support and inform the emergency preparedness and response community. Specifically, members focus on the operational and technical aspects of vUSA, exchange ideas that improve national preparedness and information sharing, and promote interoperability and compatibility among local, tribal, state, and Federal response communities.

This body of experts works together with CCI in identifying equipment, technology research, and development needs; recommending program priorities; and undertaking efforts to facilitate the cultural and technological advances necessary to make vUSA a reality for the emergency preparedness and response community. Providing firsthand proficiency and strategic insight based on experience, SRG experts address issues related to Analytics, Investigative, Geographic Information Systems (GIS), Resource and Operations Coordination, Security, and Operations Coordination, Security, Architecture, and Legacy Systems and Emerging Technologies.

Further, members also make recommendations aligned with community priorities. To enable a deeper understanding of the issues surrounding information sharing, the SRG identifies potential pilot opportunities that would provide real-time scenarios and produce findings related to lessons learned and best practices.

The inaugural meeting of the vUSA SRG convened in Washington, D.C., in the fall of 2009. Through in-person and virtual meetings, the SRG will continue to address key issues related to DHS projects, existing state and local projects, training for public safety, and other issues as they arise. This culture of collaboration within the emergency preparedness and response community enables practitioners to drive and effect the implementation of a nationwide capability of crucial information sharing—creating research that makes the vUSA vision a reality.

At the end of the five days, the group will outline their outcomes and peer-reviewed research topics, which will lead to formal joint U.S./UK projects in the area of Anomaly Detection. The Anomaly Detection Sandpit is not only an example of a collaborative research activity, but also of an international collaboration in defining research needs in a peer-reviewed setting.

International Partnerships Enable Testing of Interoperable Technologies

The U.S. Northern/Canada border provides a robust landscape for testing and evaluating interoperable systems for both countries' public safety communities. CCI has established a number of activities to enhance cross-border collaboration with Canada. These activities include demonstrations and pilots of the Multi-Band Radio (MBR) project, the Remote Enforcement Analytical Data System (READS) project, and the Virtual City/Virtual Region project.

The MBR project enables emergency responders to communicate with partner agencies regardless of the radio band on which they operate. This technology was piloted in Blaine, Washington, and Vancouver, British Columbia, before, during and after the recent Winter Olympics in Vancouver. The initiative successfully linked agencies that previously could not communicate using various hand-held radios. This successful demonstration allowed for increased safety during a worldwide event where nearly every nation was represented.

The READS project is demonstrating hand-held capabilities to securely share critical information along the Northern Border in Washington State. This pilot links together every local, state, and Federal law enforcement, and justice and public safety agency via smart phone. Initially piloted with the U.S. Border Patrol during their activities related to the 2010 Olympics, READS will be expanded to the U.S. Southern Border.

CCI is also establishing the cross-border Virtual City/Virtual Region Project with the cities of Port Huron, Michigan, and Sarnia, Ontario. The Project evaluates the operation and capabilities of the respective cities' urban law enforcement agency's Operations Center, identifies capability gaps, and selectively introduces new and modified tools and processes to address these gaps. The Cross-Border Interoperability Project will establish a geospatially-enabled situational awareness platform to share information across country lines. Demonstrations such as these help further expand upon CCI's partnership with the Defense Research and Development Canada.

By working with foreign partners, CCI is able to leverage the expertise and funding from foreign agencies in areas of interest to the greater homeland security enterprise. These partnerships broaden the impact and scope of research activities, and allow for a larger body of end users to be involved in the research process. Working across borders increases the potential to develop effective, proven tools that are applicable to our growing and interconnected world.

Mississippi: Revitalized City with Revitalized Communication

The tragedy of Hurricane Katrina in 2005 still resides in recent memory as one of the most devastating examples of how a natural disaster can wreak havoc on cities and their infrastructures. The storm left states along the Gulf Coast with destroyed buildings, damaged roads, and even disabled communication systems.

The State of Mississippi, among others, was tragically left in dire need of improved interoperable communications post Katrina. Following the Hurricane, responders from all over the Nation reported to some of Mississippi's hardest-hit areas to assist in recovery efforts, but found they were unable to communicate over local systems.

"Prior to the Hurricane, the State of Mississippi had begun to consider the efficiency of our current communication system, however, nothing could prepare us for the lessons learned during Katrina," said Mike Womack, Director of the Mississippi Emergency Management Agency. "Once the storm hit, we truly understood the need to create a fully survivable communication system."

It has been a long road to recovery for the State of Mississippi, and now an exciting milestone has been achieved. Mississippi has received a Federal grant to advance the Mississippi Wireless Integrated Network (MSWIN), which will improve the State's interoperable communication system. This system will dramatically improve emergency response efforts to major crises, and will help Mississippi prepare for future disasters.

Hurricane Katrina hindered interoperable communications in several ways including the destruction of broadcast towers while causing large-scale flooding along the Gulf Coast, Mississippi River, and New Madrid fault. By improving the MSWIN, Mississippi is now able to work with the lessons learned during Katrina and move forward with building and implementing an interoperable communication system statewide.

"Although legislation was in place to improve the MSWIN, this new grant makes it possible for our communication system to change pretty dramatically," said Womack.

The MSWIN will be utilized by all Mississippi State agencies that have a law enforcement component or that require a response system for their missions. This includes such agencies as highway patrol, narcotics divisions, and state crime agencies. All agencies will be able to talk to one another and therefore will be linked anytime they need to be.

"With the new MSWIN, our highway patrol will be able to talk to state police. This will make a significant difference when agents are on the ground during an emergency scenario and require real-time information about accidents, medical situations, or bottlenecks," said Womack.

In addition to state agencies, the MSWIN will be available to all local governments. Once specific equipment is purchased, an agency will be given the opportunity to utilize communication towers and therefore be linked into the system.

In order to create the most efficient communication system, Womack explained that the State of Mississippi researched existing approaches to interoperability. "Specifically, we looked at some of the Midwestern states as well as those along the Atlantic seaboard. We allowed other states to inform us of critical upgrades that could be made to our system," he said.

At present time, the MSWIN is complete in over a third of the State. Environmental assessments of the land continue to guide where communication towers should be placed. It is anticipated that the system will be completely built out within two years. The MSWIN is being built in close coordination with the State of Louisiana.

"Since one-third of Louisiana evacuates into Mississippi during emergencies, it was imperative that we built our system concurrently with theirs," said Womack. "Since our communication systems will work together, it will aid in the efficiency of our evacuation procedures as well as ensure we have enough resources to respond to each other during large-scale evacuations."

The system has tremendous benefits for the State of Mississippi. It is more efficient, reliable, and survivable. New communication towers are being built to withstand strong winds and rain. Additionally, the new system will have one tower in a given area instead of the old system which had as many as three to six towers for different state agencies.

Natural disasters such as hurricanes are often erratic and unpredictable—and imminent. "Every five years we are likely to get a massive hurricane on the Gulf Coast," said Womack. Eerily enough, Hurricane Katrina occurred almost five years ago, and the storm's lasting impact continues to leave its mark on the Gulf Coast states. With additional funding, however, Mississippi is one step closer to achieving statewide, interoperable communication.



Analytical Tool Kit Improves Accuracy of Suspicious Activity Reports

Finding ways to strengthen the Nation's security is a vital mission of the U.S. Department of Homeland Security (DHS). Yet security events such as the attempted airplane bombing on December 25, 2009, prove that threats to America are very real and vulnerabilities do exist. To address this critical priority, the Command, Control and Interoperability (CCI) Division in the Science & Technology Directorate of DHS is working in close conjunction with the Federal Air Marshal Service (FAMS) to help investigators detect, prevent, and disrupt future terrorist attacks and criminal activity.

FAMS' primary task is to improve aviation security by finding ways to detect, deter, and defeat hostile acts threatening air carriers, airports, passengers, and crew. To achieve that goal, FAMS regularly focuses on improving the insight obtained from suspicious activity reports (SARs). Tim Upham, Special Agent in Charge of the Investigative Unit at FAMS, said, "We are regularly faced with the ongoing challenge to quickly understand and analyze SARs, particularly in identifying linkages and associations between the reports which are received from a number of sources."

As a result, FAMS recognized the critical need for a solution that would allow them to obtain information from multiple sources in order to efficiently and accurately discern suspicious persons of interest. This process would enable FAMS investigators to effectively determine whether or not a subject named in a SAR is connected to any criminal or terrorist element contained over a larger corps of SAR data.

CCI collaborated with FAMS and Eastport Analytics, a decision analytics provider, to develop a unique solution to this challenge. The team leveraged and built upon Eastport Analytics' existing process, which used technologies to rapidly and accurately identify, understand, and address some of FAMS' specific mission challenges.

Based on their existing capability, the Eastport Analytics/CCI team created the Analytic Tool Kit (ATK) using an agile and iterative methodology to obtain essential requirements during collaborative working sessions with the FAMS investigators. The ATK is a set of analytical capabilities delivered via a flexible and adaptive framework that empowers analysts, investigators, and members of the emergency operations center workforce to find and understand complex relationships within their law enforcement or terrorism-related data.

The system is designed to be user friendly and does not require extensive training or support to reach initial operational capabilities. The system delivers the ability to find closely linked suspects, vehicles, and addresses across multiple data sources; to visually explore matching results from different perspectives; and to help mitigate inexact matches across data. The ATK is a secure system and is able to integrate with the existing security and infrastructure.

The ATK was developed using predominantly open-source technologies. Its architecture was broadened to target the technical needs of the law enforcement and intelligence community by being able to work with an array of structured and unstructured data.

Currently being tested by the Eastport Analytics/CCI team as part of a focused and successful pilot, ATK allows investigators to uncover multiple actionable reports that were previously unknown. In doing so, the pilot is meeting and addressing critical mission objectives that include a greater demonstrated mission impact, lower risk associated with the process of constant collaboration, and tighter integration with the participants' and stakeholders' long-term goals.

"By working directly with FAMS to identify and focus on a specific challenge, we were able to develop a solution which directly impacted their mission and could be rapidly derived and demonstrated," said Eastport Analytics Solutions Manager, Rich Julien. "Essentially, we focused on leveraging our entire spectrum of capabilities within the realm of what is possible, rather than trying to take a specific tool and making it fit the problem."

Additionally, the ATK continues to evolve as system engineers remain committed to fully understanding the actual business problems that FAMS investigators face on a daily basis. "Once we identified FAMS' primary need, we immediately realized that the breadth and depth of our capabilities and technologies were endless," Julien said. "It was truly rewarding for us to work directly with FAMS to determine what capabilities could provide direct mission value."

The events of December 2009 brought the constant daily challenges of FAMS investigators into the public light. However, by using new, collaborative methods such as the ATK, FAMS and its partners are better equipped to keep the Nation and the "friendly skies" as safe and secure as possible.



Don Wright: Executive Director for ICIS Radio System in Southern California

Don Wright retired from the Glendale California Fire Department after 30 years of service to the community. He held all ranks in the organization, including Battalion Chief.

During his time as Chief Officer in Glendale Chief Wright has served in a myriad of assignments including the Operations section, EMS system manager, Support Services manager, manager of an 11-agency fire and EMS communications center in the Los Angeles area, and as the Executive Director of the Interagency Communications Interoperability System (ICIS) radio system, a jointly owned and operated municipal radio system serving over 20 agencies in the Greater Los Angeles area.

Chief Wright served as the Incident Commander of the Glendale Metrolink commuter train incident in 2005—an incident that involved more than 300 fire and 600 law enforcement personnel, as well as state, local and Federal agencies involved in the investigation and recovery efforts. As a result of the operations at this incident, regional policies were updated to include some of the best practices implemented during that incident.

Chief Wright is a certified Chief Officer in the State of California and is certified as a Strike Team Leader and Division/Group Supervisor in the California Incident Command Certification System. Within these roles, Chief Wright has served across the entire state as part of incident management teams at major emergencies over the past 4 years.

Currently, Don Wright leads ICIS as the Executive Director. This shared, regional communications system serves over 7,000 users that represent more than 20 public safety and municipal agencies in the Greater Los Angeles area. He is also the current Chair of the International Association of Fire Chiefs Digital Project Working Group and is the President of the Southern California Motorola Trunked User's Group.



Q&A with Don Wright

Q: Tell us about the background of Los Angeles' Interagency Communications Interoperability System, or ICIS.

A: In the late 90s, agencies were looking to replace aging, conventional UHF radio systems. Agencies evaluated their needs to determine whether or not newer technologies and/or wireless coverage were required. As technical staff teams worked to fulfill these needs, different groups began to talk with each other and build rapport. From these conversations, people realized that the solutions various agencies and regions were seeking were very similar. The question became, "Wouldn't it be cool if we all built our own system and found a way to link them together?" And that's exactly what we did!

ICIS is a UHF, trunked radio system that became operational in 2003. More than 20 agencies share it, while seven agencies actually own the network. ICIS also serves as the umbrella agency that sets the policies on how all participating regions manage the reciprocal roaming component of its emergency radio communications.

ICIS covers the vast majority of Los Angeles county. ICIS has provided a way for each agency to be part of a regional network while having and owning their own system or network. We are all interconnected in this way.

Q: Are other regions attempting to construct a similar system?

A: ICIS is truly a pioneer agency. And there are other regions throughout California that are following in our footsteps and beginning similar projects. A lot of groups want to have one large system that is managed by one overarching network.

LA RICS, or the LA Regional Interoperable Communications System, saw what had been accomplished with ICIS and were inspired to implement a similar countywide communications system. I believe that our approach has been so effective and well received by so many different areas because this approach links many small counties together. Since LA RICS is looking to include almost every square mile of the county into their scope, they are actually using an approach that operates off of one overarching system. All public safety users in the region will be able to benefit from LA RICS.

Q: What interoperability and/or information-sharing improvements is your region seeking to make?

A: We don't currently have a data component setup; that is, there is no data delivery taking place in the field, although we are currently experimenting with the addition of some data channels. We are looking forward to the extension of the roaming piece that is currently available with voice-based interoperability and applying it to the data environment. This will allow agencies to share data channels across the network.

Further, the next generation of our region's voice system will probably become the replacement for the ICIS system. A grant has recently been given to construct a broadband data network—we are thrilled about this development and look forward to participating in the implementation process.

Q: In achieving interoperability and/or information-sharing success, what challenges has your team overcome?

A: Our experience with governance has been the big issue. Governance has represented an even more significant hurdle than technology because the governance process involves aligning several different viewpoints onto the same page and moving forward with that aligned vision together. For example, there are some agencies that prefer to operate with a certain level of control while other agencies have transitioned to the ideology of less control since crises like September 11. The idea of operating in silos and each agency operating in isolation has become passé for many groups. The technology to connect agencies is currently available—now it's a matter of figuring out how to use the technology. We ask the question, "How can we find a governance model that allows everyone to feel comfortable with what they're doing?"

Additionally, interoperable technologies like ICIS have helped us to realize that we all share a lot more common ground than just the same radio frequency. We face several of the same day-to-day issues in the daily grind of what an agency is going through. I will regularly see one county learn about a tool or methodology used by another county and either generate a similar idea that works well for their area or replicate the same tool. Either way, we have gone beyond the radio component of ICIS and agencies have become more cooperative on a day-to-day basis.

Q: At this time, what is most important to you in terms of information sharing and/or interoperability?

A: In my 30 years with the Glendale Fire Department—some of that time spent as a battalion chief—I highly valued the National Incident Management System (NIMS). I saw the criticality for emergency response groups to adhere to NIMS and to make sure that the stakeholders were engaged in the decision making process. Our region experienced a Metrolink train crash in 2005 that incurred 11 fatalities and 200 injuries. This major emergency took place directly on the border of two counties, requiring 11 fire agencies to come together and determine a path forward. Not only this, but multiple law enforcement agencies and other technical teams dealing with everything from the diesel leak to the rail administration reported to the scene—the emergency called together an alphabet soup of local, regional, Federal, etc. groups.

In particular, we used the Unified Command approach. This means that I had hourly meetings in the first several hours of the event, beginning with the Incident Commander. All of the other players in the event represented Cooperating Agencies. We all had to sit down, lay our cards on the table and explain the challenges our agencies were individually facing. We discussed what we anticipated our groups would be addressing in the next hour and any gaps in capabilities and/or resources. Within a command and control context, NIMS outlined a way for us to optimize the face-to-face aspect of implementing interoperable methodologies on the scene of the incident.

Q: Are there any other tools or methodologies that you have successfully seen implemented over the years?

A: My overarching approach in supporting not only ICIS, but to the entire communications aspect of my career has been what is called "Cooperative Cleanups." This means that every emergency response player takes time to step back at the onset of an incident and determine what issues and resources groups share in common in order to leverage common concerns and issues. I have found that disparate groups move better if we're working hard to find common consensus.



VQIPs Workshop Convenes to Determine Path Forward

Surrounded by the snowcapped Rockies and the stately Flatirons, the U.S. Department of Homeland Security's Office for Interoperability and Compatibility (OIC) hosted its third Video Quality in Public Safety (VQIPS) Workshop in partnership with the Public Safety Communications Research (PSCR) program. A highly energized VQIPS Working Group—composed of volunteers from each public safety discipline, Federal partners, academia and nonprofit entities, and industry—convened in Boulder, Colorado, to discuss the feedback garnered from public and practitioner entities on Volume 1 of the VQIPS User Guide and formulate a path forward to develop the technical components of Volume 2.

One Technology, Many Purposes

Public safety practitioners and emergency responders increasingly use video content in a variety of scenarios. For example, video surveillance can act as evidence in criminal cases, provide aerial images of wildfires to firefighters, or inform personnel deployment decisions by allowing responders to assess an incident scene in real time. In these cases, video applications become a critical component in the effort to create seamless communications among practitioners.

As video technology has evolved, the options for public safety practitioners have grown and interoperability challenges have become increasingly complex. Video applications have become essential to emergency response communications, and in order to maximize their use, public safety must be able to articulate their video quality needs clearly and efficiently to the manufacturing community.

Clearing the Picture for Public Safety Practitioners

To assist public safety practitioners in articulating their needs, OIC and PSCR created the VQIPS Working Group to bridge the gap between diverse public safety entities and thereby prevent duplicative or competing efforts when defining and deploying video systems. Since 2009, OIC, PSCR, and the VQIPS Working Group—united by the common goal of improving video quality in public safety—have been gathering requirements from public safety practitioners for the development of a VQIPS User Guide.

OIC and PSCR scoped the requirements to determine what information was most beneficial to its audience and should be included in the Guide. It was determined that the Guide would need to be user friendly and easily adaptable for practitioners with all levels of technical expertise. The Guide would need to assist practitioners in defining their particular video-related needs related to items such as lighting, environment, shutter speed, camera location, and video quality.

Optimizing Resources

Through its accessibility to all users and inclusion of a range of possible use cases, the VQIPS User Guide will provide practitioners with the ability to better make decisions when entities are seeking a cost-effective solution to fit their needs. Practitioners will receive detailed feedback on ways to avoid spending money on video features that will not meet their needs—better enabling them to decipher which technologies are best suited for their purposes. The Guide will help practitioners discern, for example, when their emergency vehicles require only a basic mounted camera instead of requiring a high-maintenance system.

Notable Progress

The VQIPS Workshop offered practitioners an opportunity to reflect on how much progress has already been made on this effort. The Group has tripled in size since its inception and is already working toward piloting Volume I and developing Volume II of the User Guide. The Group will continue to rely on first-hand feedback to shape the Guide for these next stages. The first public version of the Guide is slated for release in July 2010.

For more information on VQIPS and the User Guide, please contact VQIPS_Working_Group@sra.com.

Command, Control and Interoperability Division
Science and Technology Directorate
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