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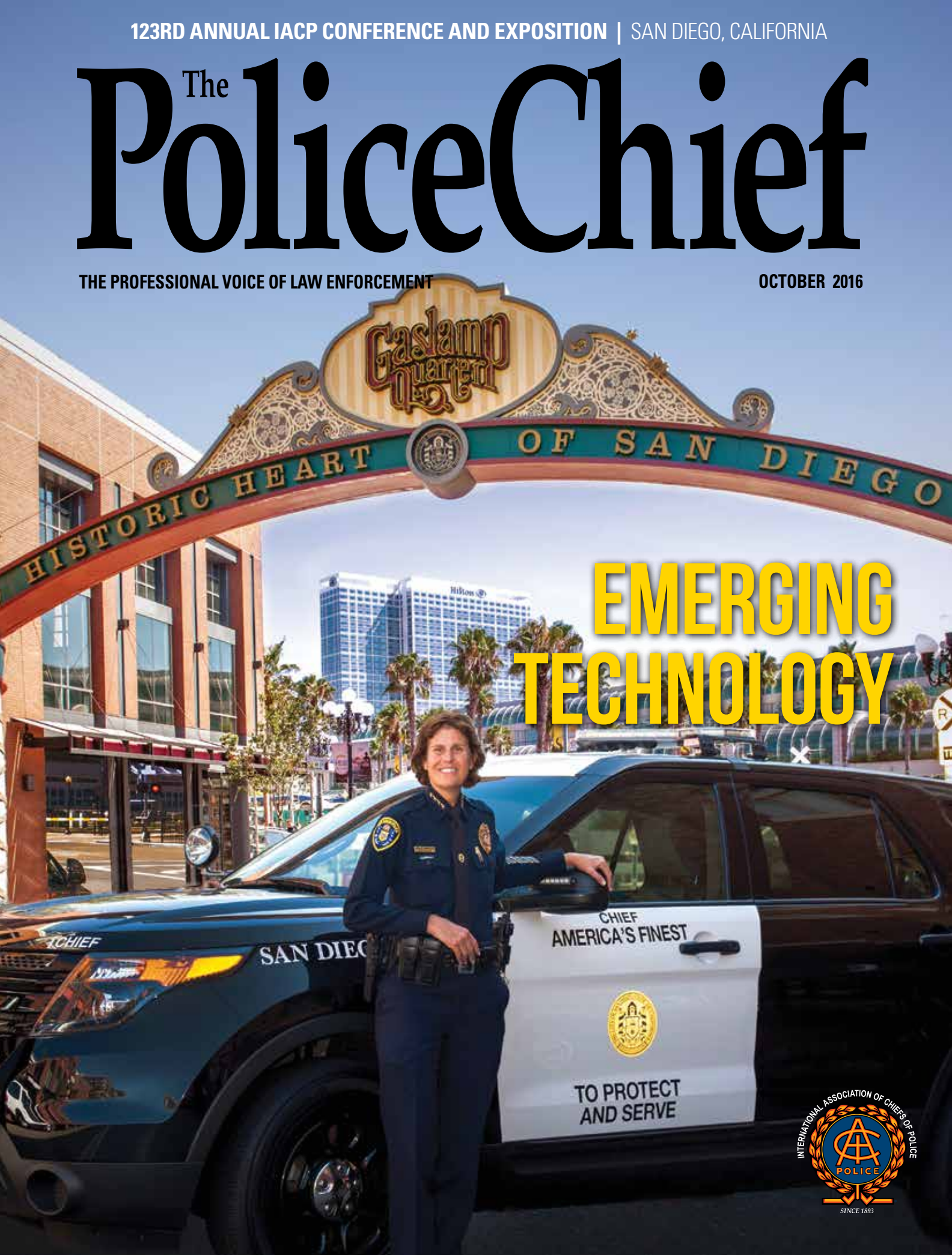

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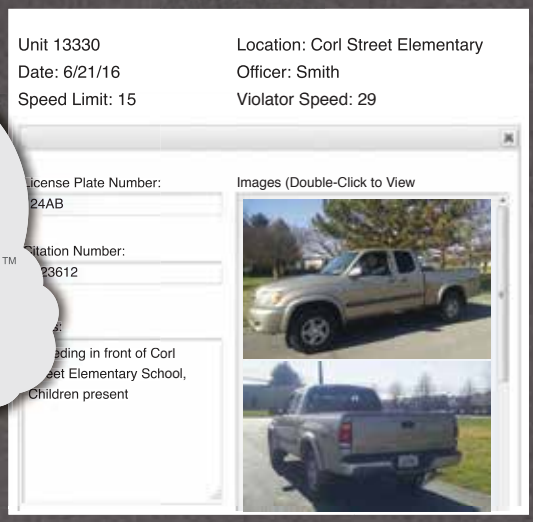

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New technology is developed every day—and such a rapid pace can make it difficult for professionals in any field to keep up. Many of these new or improved technologies have applications or implications for law enforcement officers in their day-to-day work. This issue explores some of those emerging technologies and provides valuable information for leaders regarding what tools exist, what challenges accompany new technologies, and how some members of law enforcement are using recently developed or updated technologies.

IACP 2016 will take place in San Diego, California, on October 15–18, 2016. Cover photo provided by San Diego Police Department.

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Gene Voegtlin/*Editor*
Danielle Gudakunst/*Managing Editor*
Betsy Self/*Guest Editor*
Margaret M. White/*Proofreader*
Joycelyn Newell/*Circulation Assistant*
The Townsend Group/*Advertising*
Christian D. Faulkner and Mara Johnston/*Member Services*
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James Baker, Amanda Burstein, Samuel Capogrossi, John Collins, Michael Fergus, John Firman, Sarah Guy, Domingo Herraiz, Sarah R. Horn, Cecilia Rosser, Paul Santiago, Betsy Self, David Spotts/*Editorial Advisors*
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ASSOCIATION OFFICERS — 2015–2016

President Terrence M. Cunningham, Chief of Police, Wellesley Police Department, 485 Washington Street, Wellesley, MA 02482

Immediate Past President Richard Beary, Chief of Police, University of Central Florida Police Department, PO Box 163550, Orlando, FL 32816

First Vice President Donald De Lucca, Chief of Police, Doral Police Department, 6100 NW 99 Avenue, Doral, FL 33178

Second Vice President Louis M. Dekmar, Chief of Police, LaGrange Police Department, 100 W Haralson St, LaGrange, GA 30241

Third Vice President Paul Cell, Chief of Police, Montclair State University Police, College Avenue, Montclair, NJ 07043

Fourth Vice President Steven Casstevens, Chief of Police, Buffalo Grove Police Department, 46 Raupp Blvd, Buffalo Grove, IL 60089

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Vice President at Large Richard E. Smith, Chief of Police, Wakefield Police Department, 1 Union Street, Wakefield, MA 01880

International Vice President Patrick Stevens, Chief Superintendent, Belgian Federal Police, Embassy of Belgium, 3330 Garfield St NW, Washington, DC 20008

Vice President–Treasurer Dwight Henninger, Chief of Police, Vail Police Department, 75 S Frontage Road, Vail, CO 81657

Division of State Associations of Chiefs of Police General Chair John Letteney, Chief of Police, Apex Police Department, 205 Sanders Street, Apex, NC 27502

Division of State and Provincial Police General Chair Steven Flaherty, Colonel, Superintendent, Virginia State Police, 15139 State Police Road, Culpeper, VA 22701

Parliamentarian Peter L. Carnes, Chief of Police, Stonehill College Police & Safety, 320 Washington Street, Easton, MA 02357-7168

Executive Director and Chief Executive Officer Vincent Talucci, International Association of Chiefs of Police, 44 Canal Center Plaza, Suite 200, Alexandria, VA 22314

Deputy Executive Director Gwen Boniface International Association of Chiefs of Police, 44 Canal Center Plaza, Suite 200, Alexandria, VA 22314

IACP Fellows

Nathan Aller, U.S. Customs and Border Protection

Darryl De Sousa, Baltimore, Maryland, Police Department

Chris Izquierdo, United States Army

Kirk McLean, Prince George's County, Maryland, Police Department

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The Year in Review

When I was sworn in a year ago, I could not have imagined the incredible journey I would embark upon as the president of the International Association of Chiefs of Police. I feel truly fortunate to have had the opportunity to represent global law enforcement and to have been able to meet so many remarkable and thoughtful law enforcement leaders over the course of the year.

Almost immediately following the 2015 IACP Conference and Exposition, I set out on a mission to learn about the global challenges being faced by law enforcement—terrorism, community-police relations, border security, cybercrime, human trafficking, and narcotics addiction—and how agencies are dealing with these challenges, what is working, and what we can all respectively and collectively do to thwart crime and safeguard our citizens.

My travels brought me to Rwanda, Mexico, Thailand, France, the Netherlands, Canada, and to every corner of the United States. I was fortunate to attend many world regional meetings of law enforcement officials, including personnel from INTERPOL, AMERIPOL, and EUROPOL. I am proud to say that the IACP has expanded its global reach and now serves more than 27,000 members in 133 countries. This is a record high, and I hope that we will continue this trend.

As many of you have heard me say, I believe that law enforcement is currently facing, arguably, the most challenging time in policing history. Over the course of this year, we have witnessed horrific acts of terrorism and violent extremism that have taken the lives of too many innocent people, such as those in Paris, France; San Bernardino, California; Brussels, Belgium; Istanbul, Turkey; Orlando, Florida; Nice, France; and countless more. All of these tragedies, have shocked the world and left many questions and concerns in their wake. These attacks have also steeled our resolve and reinforced the need for all of us to work together to prevent further tragedies.

In addition to terrorism, we find ourselves in a period where our actions are constantly being called into question. At times, it almost feels as if we are under a microscope and that the gulf between law enforcement and many of our communities, particularly those that feel disenfranchised, has never felt so vast. Each incident that calls into question law enforcement's actions in a particular community is like a flash point that explodes around the globe. An incident that occurs in one jurisdiction now causes protests in a town thousands of miles away, igniting a dialogue that transcends one incident or one location. We find ourselves, as chiefs, commissioners, colonels, commanders, and patrol officers, having to defend our policies and practices, as well as the actions of our fellow officers.

Like any profession, while there are a few bad officers, the overwhelming majority of the men and women in law enforcement are honorable and noble. The reason we chose this profession is our passion and drive to help others, to safeguard citizens, and to protect the people who need it the most. It's a calling we cannot resist, and we put our lives on the line every day to make this world a safer place and to safeguard people's rights and freedom.

While all of us who wear the uniform know this to be the case, there are many in the public who either do not know, do not believe, or paint our intentions with a broad brush.

Conversely, while many of us in law enforcement have felt misrepresented and negatively characterized, there are some in our communities who harbor these feelings and a general distrust of law enforcement. Those feelings are exacerbated by incidents that grab headlines and may reinforce a deep-seated history that predates many of us who now patrol the streets.

Terrence M. Cunningham, Chief of Police, Wellesley, Massachusetts, Police Department

Because of this, the topic of community-police relations has dominated the conversation for the past two years. In July, law enforcement experienced a particularly tragic month with the death of five Dallas, Texas, police officers—the deadliest attack on law enforcement in the United States since 9/11. Then, just 10 days after the Dallas shooting, we experienced more tragedy with an attack on law enforcement officers in Baton Rouge, Louisiana.

I was able to attend the memorial services to honor the brave officers who lost their lives in both Dallas and Baton Rouge. No words are strong enough to express how I feel about the tragic and senseless deaths of the officers in Dallas and Baton Rouge and the other law enforcement officers who were wounded or killed in shootings around the United States.

Leading up to and following those tragedies, I participated in meetings with U.S. President Obama and Vice President Biden to talk about the challenges confronting policing and communities. The purpose of these meetings was to look at the present divides and, more importantly, find ways to bridge those gaps and work toward collaborative solutions among law enforcement, government officials, support organizations, and other community members. The hope was to directly educate policy makers about our role and the challenges we face daily and drive meaningful conversations that would produce collective changes and solutions.

I have also had countless media interviews with national U.S. affiliates such as *Face the Nation*, CNN, MSNBC, Fox News, the *Washington Post*, *New York Times*, NPR, and *Los Angeles Times*. During each of these media interviews, I worked hard to engage in a meaningful dialogue, inform the general public about issues confronting law enforcement, and weigh in on high-profile situations so the voice of law enforcement was part of the global discussion.

As part of our continuing effort to address community-police relations, I am proud to say that the IACP stood up the Institute for Community-Police Relations (ICPR) in May 2016 to help provide law enforcement with the tools and resources they need to build and sustain a culture in policing that values transparency, accountability, and community engagement and increases community trust. The work of the ICPR will be guided by an advisory panel of law enforcement practitioners, community

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leaders, civil rights advocates, and academics. Recognizing the universal nature of the issues being addressed by the ICPR, the advisory panel will also include representatives from multiple nations and regions of the world.

The topics of de-escalation and use of force coincide with community-police relations. For this reason, the IACP formed a partnership with the Fraternal Order of Police to convene a law enforcement leadership summit with 16 law enforcement organizations to examine use of force by law enforcement officers, discuss differences surrounding proposals that seek to change use-of-force standards, identify areas of consensus, and collectively map out a path forward on use-of-force issues. The IACP plans to reconvene members of this summit at the 2016 IACP Annual Conference and Exposition in San Diego, California, to resume these discussions and to work toward the development of a well-thought-out, comprehensive, consensus model policy on use of force.

Evidence-based research is an important factor in implementing effective, long-lasting police practices and strategies. In May 2016, the IACP partnered with the University of Cincinnati (UC) to develop the IACP/UC Center for Police Research and Policy. The IACP/UC Center for Police Research and Policy will provide a path for law enforcement and researchers to work together on evidence-based research that will address critical policing issues and drive future practices and policies.

Our legislative efforts on behalf of the law enforcement profession and police executives are a centerpiece of IACP's activities. Throughout the year, the IACP worked with the U.S. administration, as well as with members of Congress, on a wide range of issues critical to public safety and the law enforcement profession. When it was announced in December 2015 that there would be major changes to the Department of Justice's (DOJ's) Asset Forfeiture Program and that all payments from the equitable sharing program would cease, the IACP worked immediately to relay the negative impact this would have on law enforcement and our ability to safeguard the public. Following several conversations with Congress, the DOJ, and the administration, we were pleased when payments from DOJ's equitable sharing program were renewed. In addition to advocating to preserve the asset forfeiture program, we also worked to educate members of Congress on the issue of encryption and the current barriers to accessing electronic communications faced by law enforcement. Those efforts included partnering with the National District Attorneys Association to host a series of congressional briefings on the issue and the effects on public safety capabilities.

These narratives only scratch the surface of the issues we have weighed in on during the course of the year. We also constantly provided feedback on legislation as it was being drafted to ensure it took law enforcement considerations into account. With the U.S. presidential election quickly approaching, the IACP wants to ensure that law enforcement is informed of U.S. candidates' policy positions specific to criminal justice and how they plan to work with law enforcement to safeguard the citizens of the United States. That is why the IACP sought answers to 10 questions on criminal justice policy issues from the Hillary Clinton and Donald Trump campaigns and distributed those answers to our members so they could familiarize themselves with the candidates' policy positions and philosophies.

The reason we chose this profession is our passion and drive to help others, to safeguard citizens, and to protect the people who need it the most.

As always, we worked hard throughout the year to provide our members with the tools and resources they need to make their jobs easier. We developed critical issues dashboards that contain key messaging worksheets pertaining to topics that law enforcement leaders face each day. These messaging worksheets are designed to break down critical topics and provide key talking points and facts to assist you in your daily communications. We have also centralized our resources relating to these topics to provide you with a clearinghouse of the most up-to-date resources available, including model policies, guides, reports, and more. The IACP will continue to expand the critical issues dashboard offerings in the years to come.

The IACP also launched a daily news clip service, *The Lead*, that captures relevant global news on topics of interest to law enforcement. The daily clips are delivered to your inbox each morning to help you keep up to date on the news in an easy, digestible manner.

The IACP held Critical Issues Forums in eight locations in the United States during the months of August and September. These Critical Issues Forums allowed IACP leadership to hear directly from police leaders about the challenges confronting their respective agencies and the collective profession and how IACP can assist on both fronts. The topics and policy issues emerging from these sessions will help focus IACP's efforts over the next several years.

Clearly, this has been a remarkably busy and productive year for the IACP. It has been my honor and privilege to have had the opportunity to lead this amazing organization for the past year, and it has been the highlight of my career thus far. I would like to offer IACP 1st Vice President Don De Lucca my congratulations and complete support as he assumes the IACP presidency. I know he will do a terrific job leading our organization and continuing to advocate on behalf of the profession.

Finally, I would like to express my deepest appreciation to my family, professional colleagues, friends, the staff at IACP headquarters, and the men and women of the Wellesley Police Department. All of you have played a vital role in allowing me to take on this tremendous challenge and experience it to the fullest. I look forward to continuing to being actively involved in the IACP and serving in any way that I can. ❖

LEGISLATIVE ALERT

IACP to Unveil New Policy Priorities Document

As the 114th congressional session draws to an end, the IACP has been busy working on preparing a policy priorities document for the 115th U.S. Congress. The policy priorities document will focus on the most important issues to the association and serve as a guiding framework for the IACP's advocacy work. The IACP will unveil its policy priorities for the upcoming Congress in November 2016.

IACP Testifies at Hearing on Information Sharing

On September 8, 2016, IACP Immediate Past President Richard Beary testified before the U.S. House of Representatives Homeland Security Subcommittee on Counterterrorism and Intelligence on federal, state, and local information sharing. Members of the subcommittee reconvened the witnesses from the 2015 hearing on the same topic to provide an update on the progress made and remaining challenges within counterterrorism and homeland security information sharing environments. To read a copy of President Beary's testimony or watch the hearing proceedings, visit https://homeland.house.gov/hearing/state-local-perspectives-federal-information-sharing. ❖

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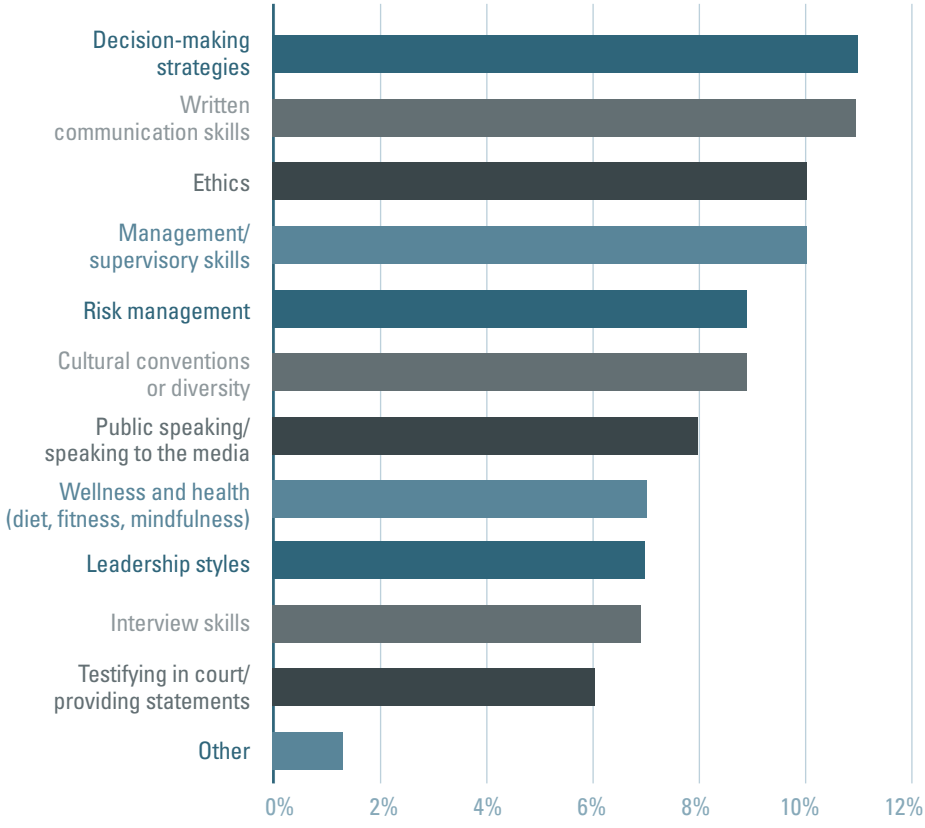
Police Chief *knows that many of the best ideas and insights come from IACP members who serve their communities every day. The Dispatch is an opportunity for members and other readers to share their wisdom, thoughts, and input on policing and the magazine.*

MEMBERS SPEAK OUT

In August, *Police Chief* asked our readers which non-tactical subjects should receive more emphasis in recruit and officer training. Here are your answers:



> "Ethics training can always be reinforced throughout an officer's career. How an agency communicates with its community is paramount in taking steps toward transparency while building trust."
>
> —Richard A. Ruck, Jr.,
> Professor of Criminal Justice
> East Stroudsburg University
> of Pennsylvania

> "I was in the military for many years prior to becoming a police officer. Comparing the two careers, I see the military spends a lot of effort training supervisors. Each time you get promoted, you receive more leadership training. In the military, each person receives weeks to months of training at each promotion, while in policing a new supervisor is lucky to get a two- to three-day class. I see the military leaders as far more prepared for leadership positions than new police supervisors."
>
> G.M. Cleverley, Patrol Sergeant
> Gatesville Police Department, Texas

YOUR TURN

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A Practical Approach to Prevent Officer Suicide

By Debora Black, Police Chief, Prescott, Arizona, Police Department, and Michael Cofield, PhD, PSG Consulting, Inc.

The incidence of police officer suicide and the related topics of post-traumatic stress disorder (PTSD) and the emotional health of officers has demanded the attention of law enforcement leaders for decades. Yet, year after year, more officers take their own lives than are killed in the line of duty.[1] The need to address the conditions within the law enforcement profession and culture that contribute to these tragedies has never been greater.

By the time a police officer is seriously contemplating suicide, a chain of events has taken place that puts leaders well behind the curve. At this point, direct, compassionate, non-stigmatizing administrative intervention may be the only available option. Linking at-risk officers with skilled professional services, implementing a safety plan, and establishing clear guidelines regarding any possible return to work to reinforce hope are important steps to protect the officer, his or her coworkers, and the organization.

Research into police suicide provides valuable insight. For example, men are far more likely to commit suicide than women. These officers have often served in policing for more than a decade and are likely to be in their early to mid-40s. They may also show a higher rate of personal or relationship problems prior to attempting suicide, and risky or excessive use of alcohol is common in these individuals.[2]

The recognition of which officers may be vulnerable to suicide is helpful. In order to truly prevent officer self-harm, however, a much earlier focus on the chain of causation is required.

Law enforcement hiring processes focus on identifying individuals with the character, physical ability, intellect, heart, and drive to be good police officers. Psychological evaluations are a critical method of revealing an applicant's strengths and weaknesses, biases, and motivation as they pertain to the individual's suitability for law enforcement. It is also important to screen for any mental health history that relates to the potential for suicide. As an example, the "kindling effect" is a mental health term referring to the fact that adults who have an episode of major depression are 50 percent more likely to experience a second episode. If they experience a second episode, they're nearly 80 percent more likely to experience a third.[3]

Since depression is the most common mental health disorder associated with suicide, it is critically important that the psychologist responsible for conducting pre-employment psychological screenings for an agency understand the relevance of the kindling effect when they make suitability recommendations. A history of stormy interpersonal relationships and risky alcohol use are also risk factors that should be considered when making a hiring decision.

While hiring individuals psychologically suited to begin a career in law enforcement creates a good foundation, officer socialization and organizational culture play a significant role in their ability to successfully navigate police work and life challenges. Resiliency—defined as the capacity to adjust to change, disruption, or difficulty and resolve negative or traumatic experiences in a positive way—should be taught and reinforced throughout the course of an officer's career. Resiliency training bolsters officers' resources and can help prevent many from developing PTSD, chemical dependency, or other conditions that amplify the risk for suicide. The earlier the training is offered in an officer's career, the better. Resiliency skills should also be regularly reinforced and modeled by supervisors.

Traditional employee assistance programs and peer support can be effective options for officers, particularly following a critical incident. These resources are limited, however, when addressing lingering or cumulative stress, primarily due to the negative stigma sometimes related to an officer seeking help. A proven, effective approach that eliminates this negative perception is using self-guided, low-intensity online tools. Presented in an easily accessible format, these tools offer scientifically sound, confidential, self-directed help to individuals and can be accessed 24/7 by anyone within the organization, including family members.

Equipping first-line supervisors to recognize changes in an officer's behavior is essential to suicide prevention, and a number of behaviors exist that should raise a supervisor's index of concern.[4] For example, any officer's comments regarding death or suicide should be taken seriously and followed up. A sudden improvement in mood after a period of despair should also be noted. In some cases, this can reflect an officer's sense of inner resolution and calm after he or she has made the decision to take his or her own life.

Effectively addressing the issue of officer suicide requires a multifaceted, comprehensive approach that begins prior to an officer being hired.

An additional factor bears special consideration. The cynicism and hypervigilance that afflicts many veteran police officers can also be accompanied by social isolation. Social isolation increases the "odds ratio" of premature death from all causes, including suicide.[5] For example, the odds ratio of a police officer dying prematurely as a result of chemical dependency increases by approximately 30 percent. The odds ratio experienced as a result of social isolation, however, approaches 50 percent, and it can prevent an officer from reaching out for help at exactly the time he or she needs it the most.

Effectively addressing the issue of officer suicide requires a multifaceted, comprehensive approach that begins prior to an officer being hired. Officer wellness can be achieved through a culture that promotes a positive, strength-based, resiliency-focused atmosphere. This approach will remove the stigma from seeking mental health assistance and contribute to the mental preparedness necessary to not only survive, but thrive in a law enforcement environment. ❖

Notes:

[1]International Association of Chiefs of Police, "Preventing Law Enforcement Officer Suicide," http://www.theiacp.org/Preventing-law-Enforcement-officer-suicide (accessed September 13, 2016).

[2]Andrew F. O'Hara et al., "National Police Suicide Estimates: Web Surveillance Study III," *International Journal of Emergency Mental Health and Human Resilience* 15,

no. 1 (2013): 31–38, http://www.omicsonline.com/open-access/currentissue-international-journal-of-emergency-mental-health-and-human-resilience.pdf (accessed September 13, 2016).

[3]University of Cincinnati, "Treating Depression to Remission is Crucial." Paper presented at the American Academy of Family Physicians Scientific Assembly, 2003.

[4]Mark H. Chae and Douglas J. Boyle, "Police Suicide: Prevalence, Risk, and Protective Factors," *Policing: An International Journal of Police Strategies & Management* 36, no. 1 (2013): 91–118.

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This Officer Safety Corner is dedicated to Officer LeeAnn Johnson.

In late 2015, Glendale, Arizona, Police Officer Johnson took her life, leaving her friends, family and coworkers shocked and grieving. What has followed is a commitment to understand and communicate effective strategies individuals and agencies can implement so the tragedy of losing an officer to suicide can be avoided.

The IACP Center for Officer Safety and Wellness (COSW) focuses on all aspects of an officer's safety, health, and wellness, both on and off the job. The COSW covers topics ranging from mandatory vest and seat belt wear policies to nutrition recommendations and wise financial decision-making. The IACP wants to ensure that law enforcement professionals have the resources they need to remain healthy and safe.

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The IACP Research Advisory Committee is proud to offer the monthly Research in Brief column. This column features evidence-based research summaries that highlight actionable recommendations for *Police Chief* magazine readers to consider within their own agencies. The goal of the column is to feature research that is innovative, credible, and relevant to a diverse law enforcement audience.

Effective Use of Naloxone in Response to Fentanyl-Laced Heroin Overdoses

By Bryan B. Kitch, MD, and Roberto C. Portela, MD, Department of Emergency Medicine, East Carolina University, North Carolina

Opioid abuse is on the rise in the United States, with an estimated 2.1 million people with a substance abuse disorder related to pain medications and another 467,000 addicted to heroin.[1] Although the U.S. death rate from heroin overdoses has doubled from 2010 to 2012, twice as many people die from prescription drug abuse as they do from heroin.[2] More than 40,000 individuals die annually from poisoning, making it the number one cause of injury-related death in the United States. Drugs are involved in 90 percent of the poisonings, and 40 percent of the drugs involved are opioids.[3] This increase in opioid poisonings could be related to the increase in prescription patterns—the prescribing of opioids has increased 270 percent in the last two decades, including more than 207 million prescriptions in 2013.[4] Methadone is implicated in 31 percent of the deaths caused by opioid pain relievers. In addition, episodes wherein fentanyl or similar high-potency opioids replace or contaminate abused drugs can lead to clusters of severe overdoses in areas where the drug was distributed.

All U.S. jurisdictions allow emergency medical personnel (EMS) to carry and administer naloxone.[5] Less than half of the United States presently allows for third-party prescribing of naloxone or similar methods to distribute the medication to lay individuals.[6] Reported surveys and discussion with LEOs suggest a growing acceptance and willingness to participate in opioid overdose response by officers.[7] Programs enabling LEOs to carry naloxone are relatively new, but they represent a growing trend in pre-hospital treatment and would benefit from EMS or physician oversight.

Examples of events in the authors' community wherein LEOs encountered multiple victims of opioid overdoses in a 48-hour period are described in the following cases.

Case 1

Police arrived and found an unresponsive 72-year-old male on the floor, not breathing. The patient had a known history of heroin abuse and exhibited signs of a possible overdose, so a LEO administered 2 mg of naloxone intranasally. When EMS arrived, the patient had a strong pulse but was gasping at times. EMS personnel administered two additional doses of naloxone, leading to some improvement of the patient's respiratory efforts, but upon arrival to the emergency department (ED), the patient was still unresponsive. His urine drug screen was positive for opioids. The patient was intubated and admitted to the intensive care unit (ICU), but was successfully extubated several hours later. The patient was discharged on day three and did not have any return visits in the three days following discharge.

Case 2

EMS and police were dispatched to an unresponsive 23-year-old male. EMS staged while LEOs made entry to secure the scene. LEOs found one unresponsive individual, not breathing normally, and displaying pinpoint pupils. LEO administered 2 mg of naloxone intranasally. The patient remained unresponsive, so a second dose was given by the LEOs. Upon EMS' arrival, they noted the patient was breathing 3–4 times per minute. The patient fully awoke shortly after this observation and had normal respirations. The patient reported intravenous heroin use prior to the police's arrival. He was observed for four hours in the ED and later discharged. He had no return visits in the three days following the incident.

Case 3

While on routine patrol, police encountered an unresponsive 21-year-old man in a parking lot receiving rescue breaths by a friend. The patient's pinpoint pupils and agonal breathing were noted and 2 mg of naloxone was administered intranasally by LEOs. The patient was waking up and responsive at the time of EMS' arrival. At the ED, the patient reported using heroin for the first time prior to the incident. His urine drug screen was positive for opioids. He was observed in the ED for four hours and later discharged. He had no return visits in the three days following the incident.

Case 4

A LEO was dispatched alongside EMS to a possible overdose. The LEO arrived prior to EMS to secure the scene and found an unresponsive 43-year-old male believed to be experiencing an opioid overdose. LEO proceeded to administer 2 mg of naloxone intranasally. EMS arrived shortly after to find the patient alert and oriented. At the ED, the patient remained completely alert and oriented. He reported crushing and snorting a tablet of oxymorphone (Opana ER). The patient reported a history of intravenous drug abuse with a similar visit to the ED three days prior. His urine drug screen was positive for opioids. The patient was observed for five hours without complications and was discharged after observation; he had no return visits within the three days following the incident.

Discussion and Conclusion

The authors believe that the experiences of their local LEOs in reversing multiple overdoses with naloxone in short succession and without adverse effects demonstrates the benefit of training and distribution of this medication to LEOs. All patients had some degree of clinical improvement prior to EMS arrival and prior to physician contact.

Laboratory testing of confiscated heroin from the scenes confirmed the presence of fentanyl, which likely contributed to the frequency and acuity of overdose numbers, which were higher than the jurisdiction's baseline. In the 10 days following the cases detailed here, LEOs administered another dose of intranasal naloxone in response to a heroin overdose.

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Of note are the grant funds that supplied the police departments with their naloxone kits; however, this may not always be the case. Analysis is needed to determine in which regions LEOs are needed to administer naloxone and those where EMS response times are short enough to supply the antidote prior to critical apnea. While the approach proposed here may save lives, communities must not lose sight of the need to address the root causes of drug abuse and addiction. ❖

Notes:

[1]Substance Abuse and Mental Health Services Administration, *Results from the 2012 National Survey on Drug Use and Health: Summary of National Findings*, NSDUH Series H-46, (Rockville, MD: Substance Abuse and Mental Health Services Administration, 2013), 6, http://www.samhsa.gov/data/sites/default/files/NSDUHresults2012/NSDUHresults2012.pdf (accessed September 7, 2016).

[2]Centers for Disease Control and Prevention (CDC), "Increases in Heroin Overdose Deaths—28 States, 2010 to 2012," *Morbidity and Mortality Weekly Report* 63, no. 39 (October 3, 2014): 849–854.

[3]CDC, "Vital Signs: Risk for Overdose from Methadone Used for Pain Relief—United States, 1999–2010," *Morbidity and Mortality Weekly Report* 61, no 26 (2012): 493–497.

[4]CCDC, Web-based Injury Statistics Query and Reporting System (WISQARS), (National Center for Injury Prevention and Control, CDC: 2003), http://www.cdc.gov/ncipc/wisqars (accessed February 11, 2013).

[5]Corey S. Davis et al., "Emergency Medical Services Naloxone Access: A National Systematic Legal Review," *Academic Emergency Medicine* 21, no. 10 (October 2014): 1173–1177, http://onlinelibrary.wiley.com/doi/10.1111/acem.12485/pdf (accessed September 7, 2016).

[6]Shane R. Mueller et al., "A Review of Opioid Overdose Prevention and Naloxone Prescribing: Implications for Translating Community Programming into Clinical Practice," *Substance Abuse* 36, no. 2 (2015): 240-53; Leanne Hewlett and Daniel Wermeling, "Survey of Naloxone Legal Status in Opioid Overdose Prevention and Treatment," *Journal of Opioid Management* 9, no. 5 (September 2013): 369–377.

[7]Bradley Ray, Daniel O'Donnell, and Kailyn Kahre, "Police Officer Attitudes Towards Intranasal Naloxone Training," *Drug and Alcohol Dependence* 146 (January 2015): 107–110.

Acknowledgements

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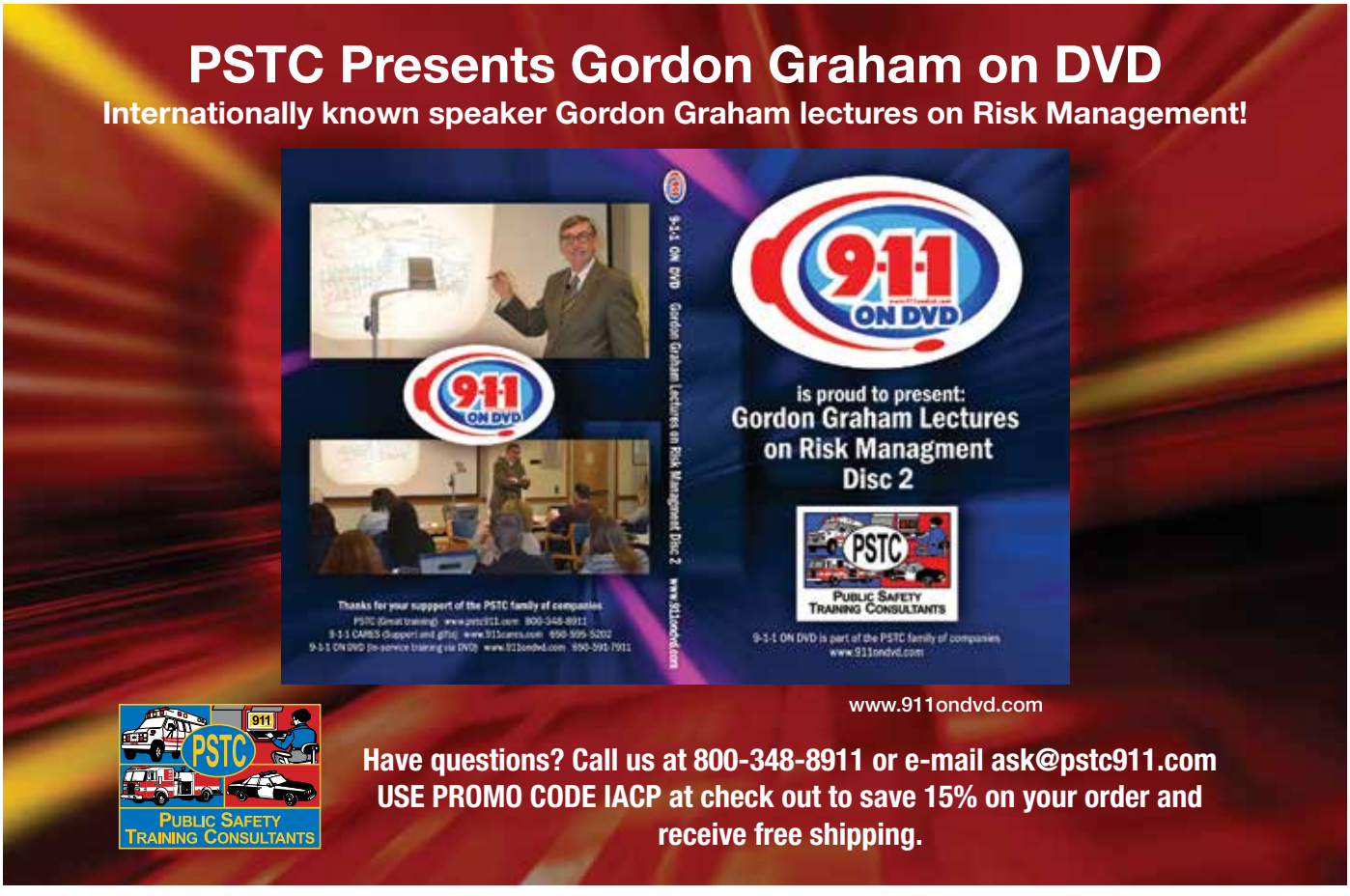
The opinions expressed in this article are those of the author(s) and do not necessarily represent the views of the IACP. The presence of this content in Police Chief *does not indicate endorsement by the IACP.*



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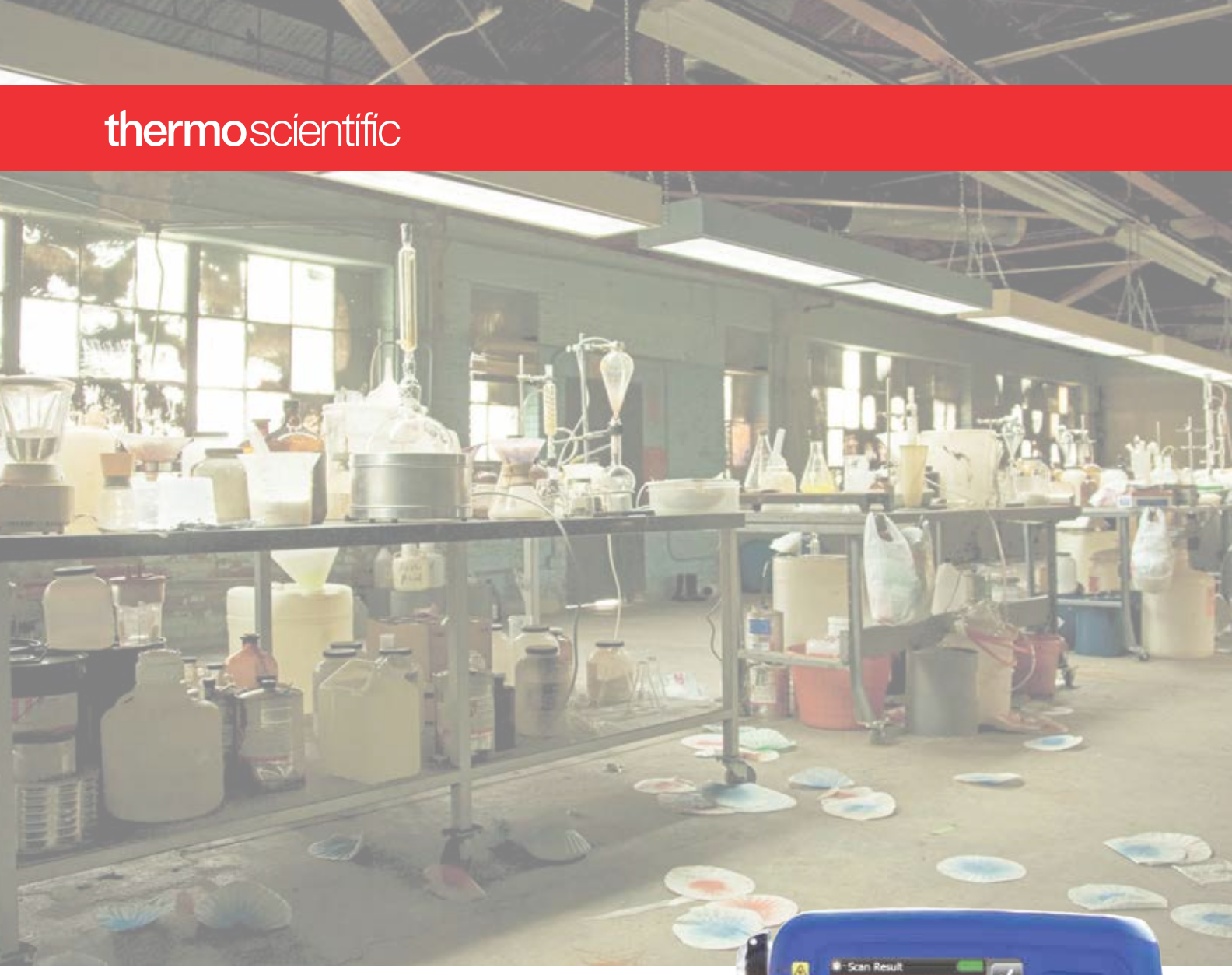

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United States v. Texas: Immigration Enforcement—Local or Federal Issue?

By Craig E. Ferrell, Jr., Assistant Professor of Law and Criminal Justice, Houston Baptist University, Deputy Director/General Counsel, Houston, Texas, Police Department (Ret.)

The primary mission of state and local law enforcement is to enforce criminal laws, which is what the local communities expect of the officers.

The U.S. Supreme Court's decision in the *United States v. Texas*, which was issued on June 24, 2016, raised major questions about the U.S. president's power to exercise discretion when enforcing immigration law.[1] The court's one-sentence affirmance of the Fifth Circuit's decision does allow Texas and 25 other states to continue their suit challenging the Deferred Action for Parents of Americans and Lawful Permanent Residents (DAPA), a program that would grant millions of unauthorized immigrants a temporary reprieve from removal.[2] The court's decision also leaves in place the preliminary injunction against the president's initiatives, thus halting implementation of the DAPA plan. However, the decision doesn't answer the lingering questions concerning the debate around immigration enforcement and whether that should be a federal, state, or multifaceted responsibility.

Argument: Local Enforcement—Local Police Should Enforce Immigration Laws

The federal government has struggled to secure the U.S. borders, deter illegal immigration, or track down those who overstay temporary visa limits. With an estimated 11–20 million undocumented immigrants in the United States and only a few thousand federal immigration officers assigned to police the interior, the federal government is not equipped to tackle illegal immigration on its own.[3] Recognizing these limitations, some see it as only logical that hundreds of thousands of local law enforcement officers be recruited to address this problem. Some local law enforcement executives may support this position because persons who are in the United States illegally have violated the law and should be treated in the same fashion as other lawbreakers.

Argument: Federal Enforcement—Local Police Shouldn't Enforce Immigration Laws

There are a number of compelling reasons why state and local police agencies should not be the frontline enforcers of federal immigration laws. These reasons take into account the primary responsibility of local law enforcement, which is to fight crime at the local level. They also reflect the reality that immigrants, both legal and undocumented, have become a part of U.S. communities. The primary mission of state and local law enforcement is to enforce criminal laws, which is what the local communities expect of the officers. Many taxpayers in their respective communities expect the local police department to use the community's resources to address burglaries, robberies, assaults, rapes, murders, and traffic violations occurring in the communities, rather than spend those resources addressing illegal immigration.

The Often-Overlooked Issue of Civil Liability

The U.S. federal government and others have, from time to time, called upon local police agencies to become involved in the enforcement of federal immigration laws as part of the effort to protect the United States. For the most part, local police agencies have worked and continue to work with federal agencies. When possible and to the extent allowable under state criminal law enforcement authority, police agencies work to address crimes such as human trafficking and gang violence that can have a nexus with illegal immigration. How local agencies respond to the call to enforce immigration laws could fundamentally change the way they police and serve their communities.

In the past, local law enforcement agencies have faced civil litigation and liability for their involvement in immigration enforcement. For example the Katy, Texas, Police Department participated in an immigration raid with federal agents in 1994. A total of 80 individuals were detained by the police, some were later determined to be either citizens or legal immigrants with permission to be in the United States. The Katy Police Department faced civil suits from these individuals and eventually settled their claims out of court.[4] The civil liability laws have not significantly changed since that event, which suggests that these laws may warrant closer examination (or revision) if local police are called upon to be more active participants in immigration enforcement.

Because local agencies currently lack clear authority to enforce immigration laws, it is likely that local police agencies will face the risk of civil liability and litigation if they chose to enforce federal immigration laws and, therefore, should always consult with local legal advisors prior to taking action. Local enforcement of federal immigration laws raises many daunting and complex legal, logistical, and resource issues for local agencies and the diverse communities they serve.

Conclusion

Local agencies have a clear need to help protect U.S. residents while continuing to foster trust and cooperation with everyone in their communities. Assistance and cooperation from immigrant communities is especially important when an immigrant, whether documented or undocumented, is the victim of or a witness to a crime. These persons must be encouraged to file reports and come forward with information.

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Their cooperation is needed to prevent and solve crimes and maintain public order, safety, and security in the community.

It is to be expected that the U.S. government will eventually resolve the conflicting matters highlighted most recently by the divided Supreme Court decision in *United States v. Texas*, but, until that occurs, local law enforcement should remain united in their commitment to continue arresting anyone who violates the criminal laws of their jurisdictions, regardless of the immigration status of the individual. That is the path forward that will ensure that local agencies, who have worked very hard to build trust and a spirit of cooperation with immigrant groups through community-based policing and outreach programs, can maintain that success while simultaneously helping to keep communities safe. ❖

Notes:

[1]*United States v. Texas*, 579 U.S.___ (2016).

[2]U.S. Citizenship and Immigration Services, "Executive Actions on Immigration," April 15, 2015, https://www.uscis.gov/immigrationaction#2 (accessed August 8, 2016).

[3]Stephen Dinan, "Nearly 20 Million Illegal Immigrants in U.S., Former Border Patrol Agents Say," *The Washington Times*, September 9, 2013, http://www.washingtontimes.com/news/2013/sep/9/nearly-20m-illegal-immigrants-us-ex-border-patrol (accessed August 12, 2016).

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Officer-Involved Shooting Guide

Though few officers will be directly involved in a hostile shooting situation during their careers, many more might experience the impact of one; the effects of such events touch not only the officer involved, but the department and the community as well. Because of the gravity of officer-involved shootings, it is vitally important to ensure that the agency and its officers are prepared in advance for such an event. IACP, with funding from the COPS Office, has developed *Officer-Involved Shootings: A Guide for Law Enforcement Leaders* to provide guidance for preparing officers and departments prior to an officer-involved shooting, suggested incident scene actions and procedures, recommended procedures for conducting criminal and administrative investigations, suggestions for working with the media, and mental health and wellness considerations and procedures.

Access the guide at www.theiacp.org/portals/0/documents/pdfs/e051602754_Officer_Involved_v8.pdf.

U.S. Presidential Candidate Survey

U.S. Presidential candidates Donald Trump (R) and Hillary Clinton (D) responded to a 10-question survey created and sent to them by the IACP. The survey includes questions on pressing criminal justice issues and was designed to gain a better understanding of the candidates' criminal justice–related police positions and philosophies. The IACP does not and cannot endorse or support candidates for political office; therefore, the information provided via the candidates' responses are intended to provide IACP members, the larger law enforcement community, and the public with each candidate's criminal justice policy positions and his or her plans for working with law enforcement in the United States.

Read Mr. Trump and Secretary Clinton's responses at www.theiacp.org/candidate response.

IACP Partners with the DOJ to Combat Human Trafficking

The IACP, with the support of the Bureau of Justice Assistance (BJA), Office of Justice Programs, U.S. Department of Justice, and in partnership with the Urban Institute and AEquitas, has launched the Enhancing Law Enforcement Human Trafficking Task Force Operations project, which provides law enforcement–related training and technical assistance (TTA) to the BJA/Office for Victims of Crime (OVC)–funded human trafficking task forces. The TTA project focuses on sex and labor trafficking and aims to close the gap in the identification, reporting, and enforcement of human trafficking laws.

For project-related information or TTA, contact humantrafficking@theiacp.org or visit the BJA website at www.bja.gov/humantrafficking.

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Decision Factors for Adopting a Technology

Nancy Rodriguez, PhD, Director, National Institute of Justice

Chris Tillery, Director, Office of Science and Technology, National Institute of Justice

Technology is a key component of any law enforcement operation—new, innovative technologies can support more efficient crime prevention and response; better protect police officers and the public; and potentially improve relationships between law enforcement and the community through better, more transparent exchanges of information.

However, the adoption of new technologies by an agency involves monetary cost—not only the direct costs of acquisition, maintenance, and operation of the technology and related infrastructure, but also the training and personnel costs.

Adoption of a new technology by an agency may involve other, non-monetary costs, as well. While technology may improve relationships between law enforcement and the community, it also has the potential to worsen those relationships. For example, unmanned aircraft systems (or "drones") may, when compared to conventional aircraft, offer clear benefits to law enforcement from a cost perspective, but their potential impact on privacy also raises concern in many communities. Body-worn cameras (BWCs) are also a double-edged technology: BWCs offer clear benefits from the perspective of community-police relations, but they raise privacy concerns among both victims and officers.

The first step in deciding whether to adopt a technology is defining the benefit to be achieved and determining whether the technology in question is really the solution. Technology is not always the answer, and, in some instances, it may work counter to the intended purpose. For example, an agency may attempt to reduce police vehicle–involved traffic crashes by increasing the visibility of its vehicles through more intense lightbars, but that may not solve the problem if the root cause is poor traffic safety policy and training. In fact, some research suggests that LED emergency lights may distract other motorists. As another example, using social media to improve community outreach may have little impact, depending on how the communities the law enforcement agency is trying to reach consume their information. The use of social media varies by demographics, as does the type of social media used by subpopulations.

Once the agency has defined the benefit and decided that a new technology is the solution, the second step is to define the circumstances within which the technology is intended to be used and the operational capabilities needed to achieve the desired benefit. This step has policy implications beyond the technical specifications of the technology. For example, defining the circumstances under which a BWC is and is not to be used—perhaps because of privacy considerations—is a matter that will need to be rendered into agency policy and training. If officers are to wear BWCs for an entire duty shift, do the batteries for the cameras have sufficient power? From a policy perspective, should the cameras be on in all situations? What are the privacy concerns? Do those privacy concerns translate into consideration of operational capabilities? For example, should the officer have the ability to turn off a BWC?

The location where the technology is to be used may also be important. For example, closed-circuit television systems work best in

To the greatest extent possible, agencies should engage with the communities that they serve when considering the adoption of a new technology, both to inform the community members and to gain their input, particularly in regard to technologies that can be perceived as having an impact on privacy.

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NIJ funded the development of the Technology Decision Tool to help agencies make decisions regarding the acquisition of new technologies. The tool was developed with input from technology experts from both large and small agencies who have firsthand experience in successfully evaluating and implementing technology projects. It guides agencies through a customized cost-benefit analysis exercise to help them make the best decisions for their officers and their communities. It directs decision-making based on needs, availability of technology, and lifecycle costs of products and training. Safety considerations and budget realities are taken into account and viable solutions are offered and evaluated. The tool can be accessed at www.justnet.org/pdf/Technology-Decision-Tool.pdf.

open areas. The more complex the topography, the more cameras required to provide useful coverage. The time of day may also matter; if a surveillance camera system is to be employed at night, a low-light-level camera may be required.

The next step in the process of adopting a new technology, after its operational requirements are defined, is to define the requirements that will enable the integration of the technology into an agency's systems and processes. For example, agencies implementing BWCs should have policies regarding the retention of the video generated by those BWCs.

This step also includes defining the infrastructure that will be required to support the technology. For example, if an agency wants to provide its officers with access to streaming video in a mobile environment, does it have the communications infrastructure to do so? Will the new technology require new facilities? Are there, for example, facility considerations associated with the storage of the videos from BWCs or will the agency contract with a vendor for storage services? Will the new technology require additional training for staff or will staff with new skill sets need to be hired? For an agency implementing a BWC program, there will be a requirement for training on BWC policy. If a police department establishes a social media outreach unit, it may well be required to hire social media specialists.

The next step in the process is for the agency to define its specifications for the technology. These include considerations of size, weight, power, and performance within the agency. Required operational capabilities and policy requirements have implications for the technical specifications for a new technology; for example, the battery life of a BWC or the requirement of a low-light-level camera. If there is an existing equipment performance standard that meets an agency's performance requirements, the agency should use it.

Once the agency's specifications have been defined, the agency should compare alternative solutions. If a performance standard exists that meets the agency's performance requirements, and there is a conformity assessment regime associated with that standard, the agency should use it to compare alternatives. Using noncompliant models might put an agency at risk should that model fail.

When comparing the costs of different technologies, agencies need to consider more than the cost of purchasing the technology—they should also consider lifecycle costs. Those include not only procurement, but also maintenance, upgrades, replacement, infrastructure, and potential disposal costs.

In comparing different technologies, agencies should consider if grant funds are available to offset costs for particular models. They should also consider if vendors offer services, such as buy-back or disposal options that may offset costs.

Agencies should also consider if the manufacturer offers warranties. If so, agencies should pay attention to what is applicable under a warranty. Some manufacturers may warrant only workmanship, but not performance.

Finally, agencies should factor in differences, if any, in the training and staffing costs associated with different models of a technology. After adoption, agencies should periodically reassess whether the selected technology solution provides or continues to provide the intended benefit after it has been put into use. If not, determine why—is it a problem with the specifications or that particular solution?—and then take corrective action.

In addition to these basic steps, there is the need to implement effective community engagement and outreach strategies. To the greatest extent possible, agencies should engage with the communities that they serve when considering the adoption of a new technology, both to inform the community members and to gain their input, particularly in regard to technologies that can be perceived as having an impact on privacy. Community input should be part of an agency's reassessment of whether the selected technology solution provides or continues to provide the intended benefit. ❖

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CYBERSECURITY

A Call to Action for Police Executives

By Eldon Amoroso, Senior Director (Ret.), London, Ontario, Police Service, Member, IACP Computer Crime and Digital Evidence Committee

Police executives need to understand four things about cybersecurity.

First, there has been a dramatic increase in both the frequency and sophistication of cyber attacks such as ransomware and ad malware attacks that systematically target police systems.[1]

Second, police executives in both large and small organizations are responsible for the well-being of their entire organization. If their systems are successfully attacked, the media will want the chief's comments, not those of an information technology (IT) support professional.

Third, a 2013 survey conducted by the International Association of Chiefs of Police (IACP) and Canadian Association of Chiefs of Police (CACP) showed that, while police executives understand the danger and possible consequences posed by cyber attacks, only a small number have had a third-party audit, which is the most effective way for agencies to test their cyber defenses.[2]

Fourth, while technology is playing an increasing role in policing, IT suppliers tend to be over-confident in their system's ability to withstand a focused attack. In fact, one recent study indicates that many organizations have a false sense of security.[3]

With the above facts on the table, what are some next steps? Police executives need to develop a critical action plan for a review of their cybersecurity environments. The information herein will provide police executives with valuable knowledge as they strive to cope with a complex IT environment.

The Problem

As well as the current, ongoing types of cyber attacks that have been quite successful thus far, new methods of attack are quickly evolving. An April 26, 2016, investigative report from NBC News highlighted ransomware—software that takes over a system and encrypts it so that money can be extorted—and the report suggests that the use of this tactic is increasing dramatically:

> *"Ransomware crimes on all U.S. targets are soaring. In just the first three months of 2016, attacks increased tenfold over the total entire previous year, costing victims more than $200 million."*

According to the report, that number could be much higher, as it is generally believed that many incidents of ransomware crimes go unreported.[4]

Another rapidly advancing threat is dangerous malware placed in ads on legitimate websites. Trustwave, a support site that deals with computer security, commented on advertising malware, stating that attacks from these predators are growing. Dan Kaplan, manager of content at Trustwave, explains that malware has the power to spread viruses throughout a system and has the potential to turn even the most educated user into a cyber risk.[5] It is clear that the cyber world is not getting safer.

When hacking started many years ago, it was primarily the domain of a niche group of technology aficionados—young people who wanted to prove they could breach the unassailable security fortresses of big organizations. Times have changed. It is now organized crime that conducts much of its business on the web, stealing identities, ransoming computer systems, and so on. Even seemingly benign social movements have used hacking to create disruptions for organizations perceived as threats to a movement's philosophy. The digital world has its fair

share of criminals and hostile players. What should the response of police executives be?

There are a large number of priorities for technical teams and support personnel, whether they are internal staff or external vendors. Some of the standard activities like security can be inadvertently pushed to the background for a new software installation, for example. If questioned, IT people would most likely admit that they struggle to prioritize tasks and that they cannot always meet demands made for their service.

The accounting firm Deloitte recently produced a Canadian cybersecurity study based on more than 100 organizations from various sectors.[6] The *Financial Post*'s Barbara Shecter commented on this study stating that "many Canadian businesses have 'wrapped themselves in a false sense of security' when it comes to resisting cyberattacks."[7]

The Deloitte study concludes that 90 percent of the organizations examined "feel" protected from cyber attacks.[8] Is their feeling of well-being justified? Not according to findings.

Shecter went on to say that, of those surveyed, only nine (less than 10 percent) achieved the highest score on the following three key measurements:

1. How secure are they?
2. How vigilant are they in monitoring potential threats?
3. How resilient are they in terms of effective preparation for, and recovery from, attacks?

With only half of the organizations surveyed reporting a defined cyber recovery process, it would seem that their feelings of well-being are not rooted in reality. However, the article does suggest that CEOs are starting to see the danger signs.[9]

The chief executive of the Investment Industry Association of Canada, Ian Russell, says, "The cyber threat is far too sophisticated and serious to relegate it simply to the firm's IT department."[10] This is a key point that police executives need to understand—agency leaders should be as involved with IT security as they would be in any other security issue.

Hewlett Packard's white paper entitled *Cyber Security Best Practices* defines the problem with some startling statistics:

> *The number of successful cyberattacks in the U.S. has grown 144 percent in the past four years, and the rest of the world is close behind. In that same time, the cost to the average company has almost doubled.*[11]

Still, many IT teams remain confident that their cybersecurity posture affords them an extremely high wall of defense. However, engaging a third party to test those defenses will discover if that wall is made from stone or balsa wood.

Many have the misconception that an attack (even a cyber attack) will be a frontal assault with sirens going off and loud noises alerting everybody to the danger. Cyber attacks are often just the opposite, and the longer an attack goes undetected, the more damage it can do.

The Hewlett Packard paper confirms the risk of undetected attacks stating,

> *On average, advanced attacks now persist in the network seven months before they are detected. And the time to resolve those attacks once detected has increased by 221 percent to 45 days. Victims suffer financial losses, damage to brand, and damage to customer relationships.*[12]

Most IT support personnel and vendors do everything they can to ensure security, and many maintain it as a top priority even if a system appears secure. Why? It appears that attackers are growing bolder and more dangerous each year. Add the security risks faced through the use of ever-changing mobile technology, and a lot of evidence points to the need for a solid defense as the only way to be sure of an effective security posture.

A little bit of paranoia can be a good thing. It doesn't mean one should be overly anxious, but it is analogous to the officer who believes the 20th alarm call in a week is just another false alarm, and it turns out

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Responsibility

If a police executive was asked, "What keeps you up at night?" would his or her answer be "cybersecurity"? There was a time when the head of an organization could refer to a cyber attack as a "computer problem," and all was forgiven. This is no longer the case. Mobile devices such as smartphones have changed the rules. Their constant presence and highly sophisticated capabilities have raised the bar—along with raising the expectation that agencies be able to prevent (or withstand) cyber attacks.

Over the years, Internet service providers have helped users become smarter. They advise when steps must be taken to ensure personal information stays protected by suggesting, for example, updates to virus software and passwords. Day-to-day technology users may assume that if they are practicing safe computing, their local police agency is doing the same—only better. This applies to small, medium, and large police agencies equally.

This expectation should not come as a surprise. After all, police executives make important, skillful decisions every day. Decisions like placing a guard on the evidence room if the door is broken are easily made—the vital nature of the contents in an evidence room demands that response. Now, though, computers have become the biggest evidence rooms. They can contain more vital information in a microchip than what is found on an entire shelf, which means that chiefs must decide how best to protect these electronic evidence rooms.

So what is an appropriate response to threats from cyberspace? Police executives should start with a dialogue with the people who supply the agency's IT services. This may be an IT director, a supervisor of technology, or someone at the city or state who is providing assistance to the organization.

The Call to Action

Step 1: Start the Conversation

The IACP Computer Crime and Digital Evidence Committee has developed an excellent tool to help police executives open the cybersecurity conversation with their IT supplier. The Law Enforcement Cyber Center (LECC) "Cyber Report Card" is readily available online and can be downloaded at no charge.[13]

The report card covers the main issues involved in police executives' cybersecurity needs and concerns. Police executives can leverage questions posed in the report card by speaking to their IT suppliers. It is

How to Initiate a Cybersecurity Discussion with an IT Supplier

- Download the "Cyber Report Card" at www.iacpcybercenter.org/wp-content/uploads/2015/09/LECC_Cyber_Report_Card_v10_1509.pdf.
- Plan a short meeting with the IT supplier that opens a dialogue about an executive's responsibility to provide overall security.
- Ask for written responses to questions in plain language (not technical language).
- Plan a meeting to discuss the results. If third-party audits are not included or already in place, plan to include a periodic audit.

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recommended that chiefs request a written response to the questions—a response that uses straight talk rather than technical jargon—to avoid confusion after the discussion.

A large organization might have an in-house IT director or expert who would be able to address these types of questions; in a smaller organization, it may be the IT director for the city or a third-party organization. However, it is recommended that, before the questions are delivered, chiefs have a short discussion with the intended recipients. This increases the likelihood of their full cooperation instead of a defensive response that might result from feeling like their work is being questioned.

This exercise is certain to be more successful if the recipients understand that they perform a vital service to the organization and that their capabilities are not being challenged. They are being asked questions because the chief needs to be better informed, not because they are not trusted to do their job. Police executives are ultimately responsible for all aspects of organizational security and cybersecurity is part of the whole. Making it clear how important answering this set of questions is can indicate that a treatise is not necessary. However, responses must make the case and clearly communicate what IT suppliers do and why they do it. If approached appropriately, it is not uncommon for an IT supplier to come back with suggestions to help enhance security.

Though some IT personnel may minimize the overall threat faced, experience tells us that strong awareness and ongoing work are needed to keep organizations secure. Police executives should make use of the resources available—such as the report card—that will enable an investigation. A cooperative and supportive investigation always garners the best results.

Step 2: A Third-Party Audit

The second step in ensuring an agency's cybersecurity is a third-party audit, which can supply information and direction that will greatly assist an organization's efforts to enhance security. Often, the recommended changes are merely software updates or setting changes that are easily done and inexpensive. Most important, however, an unbiased third-party appraisal provides a baseline for monitoring improvement.

Initially, an IT supplier may be the most vocal critic of bringing in a third party. Understandably, they might feel they are not trusted and that their expertise is being doubted. Once the IT personnel realize the benefits of an impartial third-party audit, however, they are likely to be fully supportive

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of periodic reviews. After all, most professionals would rather be aware of an issue and fix it than be surprised by an attack and have to explain the overlooked issue to an oversight board or, worse, the media. And, in fact, an audit can take a lot of pressure off an IT supplier.

An IT supplier cannot allocate all of their limited resources to one thing. Their main job is to supply support. Typically, there are far more demands made of IT staff than can be realistically delivered, and IT teams work hard to balance all of the service demands in the face of changing priorities. An auditor will highlight specifics that can then be addressed, which is easier than trying to find them in the first place.

An effective cybersecurity auditor is fascinated by the techniques used by hackers to break into organizations. They have to think like a criminal, and they are able to devote their full attention to the task of testing a system's security. An auditor's only objective is to find weaknesses in a system. Once testing is complete, which may take days, auditors are able to recommend ways to fix any problems and bolster the security platform.

It's similar to proofreading documents—it's not recommended that a writer proofread his or her own writing because his or her brain will read what the writer wanted to say, not what is actually on the screen or page. For the same reason, third-party cybersecurity audits are a more objective way to test security. Their singular purpose is to find vulnerabilities.

Summary

To recap, there are four important points that will help police executives prioritize cybersecurity.

1. Data show a dramatic increase in both the frequency and sophistication of cyber attacks. Ransomware and ad malware are highly effective, destructive, and costly. Police systems are being targeted.[14]
2. It is understood that police executives will be held accountable if computer systems are successfully attacked in their organizations.
3. An IACP-CACP survey from 2013 revealed that police executives recognize the risk of cyber attacks, but only a small number of them have employed a third party to audit their organizations.[15]
4. While the use of technology is growing in police work, IT suppliers or staff tend to be over-confident in systems' ability to withstand focused attacks.[16]

Risk is mitigated when direct action is strategically applied. The "Cyber Report Card" will springboard that discussion with an agency's IT director or supplier and start the process needed to evaluate and strengthen an agency's cybersecurity. ❖

Notes:

[1]Chris Francescani, "Ransomware Hackers Blackmail U.S. Police Departments," NBC News, April 26, 2016, http://www.nbcnews.com/news/us-news/ransomware-hackers-blackmail-u-s-police-departments-n561746 (accessed May 30, 2016); Dan Kaplan, "Perspective: 8 Reasons Why the Malicious Ad Threat Is Poised to Grow Even Worse," *Trustwave Blog*, April 5, 2016, https://www.trustwave.com/Resources/Trustwave-Blog/8-Reasons-Why-the-Malicious-Ad-Threat-Is-Poised-to-Grow-Even-Worse (accessed May 30, 2016).

[2]International Association of Chiefs of Police (IACP), Canadian Association of Chiefs of Police (CACP), "Law Enforcement Perceptions of Cyber Security" (presentation, Law Enforcement Information Management Conference, May 2013), http://www.theiacp.org/Portals/0/pdfs/LEIM/2013Presentations/2013%20LEIM%20Conference%20Workshop%20-%20Technical%20Track%20-%20State%20of%20LEA%20INFOSEC.pdf (accessed May 30, 2016).

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[3]Barbara Shecter, "Canadian Companies Have 'False Sense of Security' When It Comes to Cyber Threats: Report," *Financial Post*, December 3, 2015, http://business.financialpost.com/fp-tech-desk/cio/canadian-companies-have-false-sense-of-security-when-it-comes-to-cyber-threats-report?__lsa=7b39-50ee (accessed May 30, 2016).

[4]Francescani, "Ransomware Hackers Blackmail U.S. Police Departments."

[5]Kaplan, "Perspective: 8 Reasons Why the Malicious Ad Threat Is Poised to Grow Even Worse."

[6]Deloitte, *Responding to Cyber Threats in the New Reality: A Shift in Paradigm Is Vital* (Deloitte & Touche Enterprise Risk Services Pte Ltd, 2015), https://www2.deloitte.com/content/dam/Deloitte/sg/Documents/risk/sea-risk-cyber-thought-leadership-noexp.pdf (accessed May 30, 2016).

[7]Shecter, "Canadian Companies Have 'False Sense of Security' When It Comes to Cyber Threats."

[8]Deloitte, *Responding to Cyber Threats in the New Reality.*

[9]Shecter, "Canadian Companies Have 'False Sense of Security' When It Comes to Cyber Threats."

[10]Ibid.

[11]Hewlett Packard, *Cyber Security Best Practices*, 2015, 3, citing the Ponemon Institute's "2014 Cost of Cyber Crime Study" (October 2014).

[12]Ibid.

[13]Law Enforcement Cyber Center, "Cyber Report Card," December 3, 2015, http://www.iacpcybercenter.org/wp-content/uploads/2015/09/LECC_Cyber_Report_Card_v10_1509.pdf (accessed May 30, 2016).

[14]Francescani, "Ransomware Hackers Blackmail U.S. Police Departments"; Kaplan, "Perspective: 8 Reasons Why the Malicious Ad Threat Is Poised to Grow Even Worse."

[15]IACP, CACP "Law Enforcement Perceptions of Cyber Security."

[16]Shecter, "Canadian Companies Have 'False Sense of Security' When It Comes to Cyber Threats."

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Biometric Identification Innovation: Iris Recognition

Iris recognition is the process of identifying people by the pattern of their iris through the use of software and cameras designed to specifically collect iris images. Using iris recognition is fast becoming a part of everyday operations for a number of local and state law enforcement agencies and correctional institutions. (Courtesy of the FBI CJIS Division's Multimedia Productions Unit.)

By Brandi R. Meighan, Management and Program Analyst, Biometrics Center of Excellence Unit, Federal Bureau of Investigation

The Federal Bureau of Investigation (FBI) relies on its partnerships with local, state, tribal, and federal agencies to collaboratively guide courses of action when incorporating new technologies into services provided to the law enforcement and criminal justice communities. This approach has successfully guided the development of vital programs such as the National Crime Information Center (NCIC) and the Next Generation Identification (NGI) systems. This same concerted method is being used to explore several developing biometric identification disciplines, one of the most promising of which is iris recognition.

Iris recognition is fast becoming a part of everyday operations for a number of local and state law enforcement agencies and correctional institutions. It is the process of identifying people by the pattern of their irises through the use of software and cameras designed to specifically collect iris images. Algorithms use the intricate structures and detail of the iris to conduct automated matching. Iris recognition systems have been deployed within local jurisdictions to identify subjects who have been arrested and may be transported within large facilities or to several different facilities. As more agencies adopt the iris as a viable means of identification, the need for a national iris repository and search capability is clear.

To address this need, the FBI's Biometric Center of Excellence (BCOE) began an iris recognition pilot in 2014 to provide iris biometric search services to participating criminal justice agencies. The pilot project allows the FBI to evaluate iris technologies while addressing key challenges associated with operational deployment. Participating agencies are able to enroll images with booking transactions and perform identification searches. Results from the pilot will help develop best practices in the use of iris recognition and examine the return on investment.

Background on Iris Recognition

The iris is the muscle within the eye that regulates the size of the pupil, controlling the amount of light that enters the eye. It is the colored portion of the eye, and its vastly detailed structure is highly distinctive. That detail and distinctiveness are what make it so useful in biometric identification. For instance, while facial appearances of identical twins exhibit a striking visual similarity, their iris structures will always have patterns that are unique to each of them. Like fingerprints, irises are unique, measurable biological characteristics that can be used for automated recognition.

Modern iris recognition was proposed over a half-century ago, with the concepts patented in the 1980s.[1] Since then, iris technology has become affordable, highly accurate, and efficient. Today, iris recognition is used in identification applications by private industry, border security operations, and criminal justice agencies worldwide.

Large-scale deployments occurred within the last decade in countries around the globe. In 2001, the United Arab Emirates began an iris recognition border security pilot that went fully operational in 2003.[2] India began a national identity program in 2011 that leverages iris data to search against large-scale databases.[3]

Several local and state law enforcement and correctional facilities employ iris capabilities in the United States. Many of these systems are designed to work locally or with a limited database because of the absence of a U.S.-wide system. While the launch of independent systems provided benefit at the local level, expansion to cross-jurisdictional searches could identify additional relevant data on incarcerated subjects, such as warrants or caution indicators. In addition, a coordinated effort by the criminal justice community would ensure interoperability through the use of national standards and best practices.

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Agencies participating in the FBI's iris pilot are able to enroll iris images with booking transactions associated with fingerprints, append iris images to existing records, and perform searches with an average response time of one second. (Courtesy of the FBI CJIS Division's Multimedia Productions Unit.)

Recent years have seen increased interest in iris recognition as a viable biometric identification tool based on scientific research showing the accuracy and effectiveness of various matching algorithms. The National Institute of Standards and Technology (NIST) has been instrumental in examining the science and technology that supports iris matching, overseeing a program of research known as the Iris Exchange (IREX) since 2008.[4] The NIST has issued guidance for the use of iris authentication, including a 2013 paper on the use of iris images for Personal Identity Verification cards for federal employees and contractors.[5]

Iris Pilot Capabilities

With both user interest and NIST-backed research on the scientific underpinnings of iris recognition as a biometric tool, the deployment of the FBI's iris pilot was a logical step. The pilot provides not only an immediate operational benefit to users, but also a means for assessing best practices for iris image capture and iris camera specification requirements. Participating agencies are able to enroll iris images with booking transactions associated with fingerprints, append iris images to existing records, and perform searches with an average response time of one second. The two-year-old pilot program currently averages 13,000 transactions per month with more than 425,000 iris image enrollments processed from more than 30 different locations across the United States.

The first step in the pilot was the creation of an iris repository to allow images to be searched for criminal justice purposes. The pilot repository currently contains iris images from local, state, and federal databases obtained during criminal bookings, incarceration, or other criminal justice proceedings. Iris images submitted for pilot retention are associated with tenprint fingerprints.

Users of the iris pilot have access to two types of searches: (1) identification and (2) investigative. Identification searches are performed when the iris image submitted is of high quality (e.g., the image is captured by an iris camera in a controlled setting). All identification responses include a notice informing the criminal justice agency that records may exist in other biometric or name-based repositories.

Investigative searches can be performed when controlled iris capture images are not available to submit for searching. An investigative search returns a list of candidates for comparison by examiners. Investigative responses are designed to include a caveat cautioning the criminal justice agency that candidate identities should be considered only potential matches or investigative leads requiring further verification. Users should not rely solely on the investigative search responses as the impetus for any law enforcement action. Instead, true identities must be independently verified.

If an identification match occurs, an automated query of the biographic-based NCIC is launched in order to obtain additional information related to the candidate. This cascaded search is conducted against all NCIC person files and can help identify wanted persons, gang members, sex offenders, and subjects entered in the protection order files. These NCIC data, along with special caution indicators included in an NCIC entry, are attached to the iris response to provide important information relating to the individual. Iris identification responses currently return national and state identification numbers; a subject's name; and, potentially, a mugshot. The pilot can also provide criminal history data from the Interstate Identification Index, if requested.

Uses for Iris Recognition

Agencies are primarily using the iris recognition capability for identity management purposes to identify wanted persons, gang members, and sex offenders. However, potential uses for iris identification searches include correctional facilities monitoring entry, exit, and release of prisoners or tracking inmates during transportation; supervised release process automation; and programs automating parolee, probationer, or sex offender check-in.

As prison populations continue to grow, iris recognition provides a useful tool to manage the burdens of inmate identity tracking. One advantage of iris recognition is that automated systems can effectively identify prisoners with minimal direct handling. Prisoners do not need to provide biographic information, display an identity-based token (e.g., identity card), or participate in a potentially time-consuming biometric capture. In fact, the iris provides a contactless capture method, which is generally quick and has the advantage of allowing collection while an inmate is under restraint. The iris is also much more unique than many other contactless biometric modalities, such as facial images, providing a more reliable source for identification searches.

Supervised release and probation officers may use iris recognition as a highly reliable, quick, and automated method for check-in of individuals on supervision. Officers have noted the benefit of iris recognition for identification is that the quick method allows more time talking with the person and less time on the identification process. Sex offenders are required to register with local authorities and notify local communities in all 50 U.S. states and, depending on their classification level, are required to report to local authorities several times per year. An iris search can be used in these situations to confirm the identity of an individual if his or her iris images have been enrolled.

Private industry and some government entities are already using biometrics for access control to facilities and areas requiring additional security. Iris recognition offers a highly accurate, contactless, rapid identification option that increases the efficiency and effectiveness of access security. Biometrics

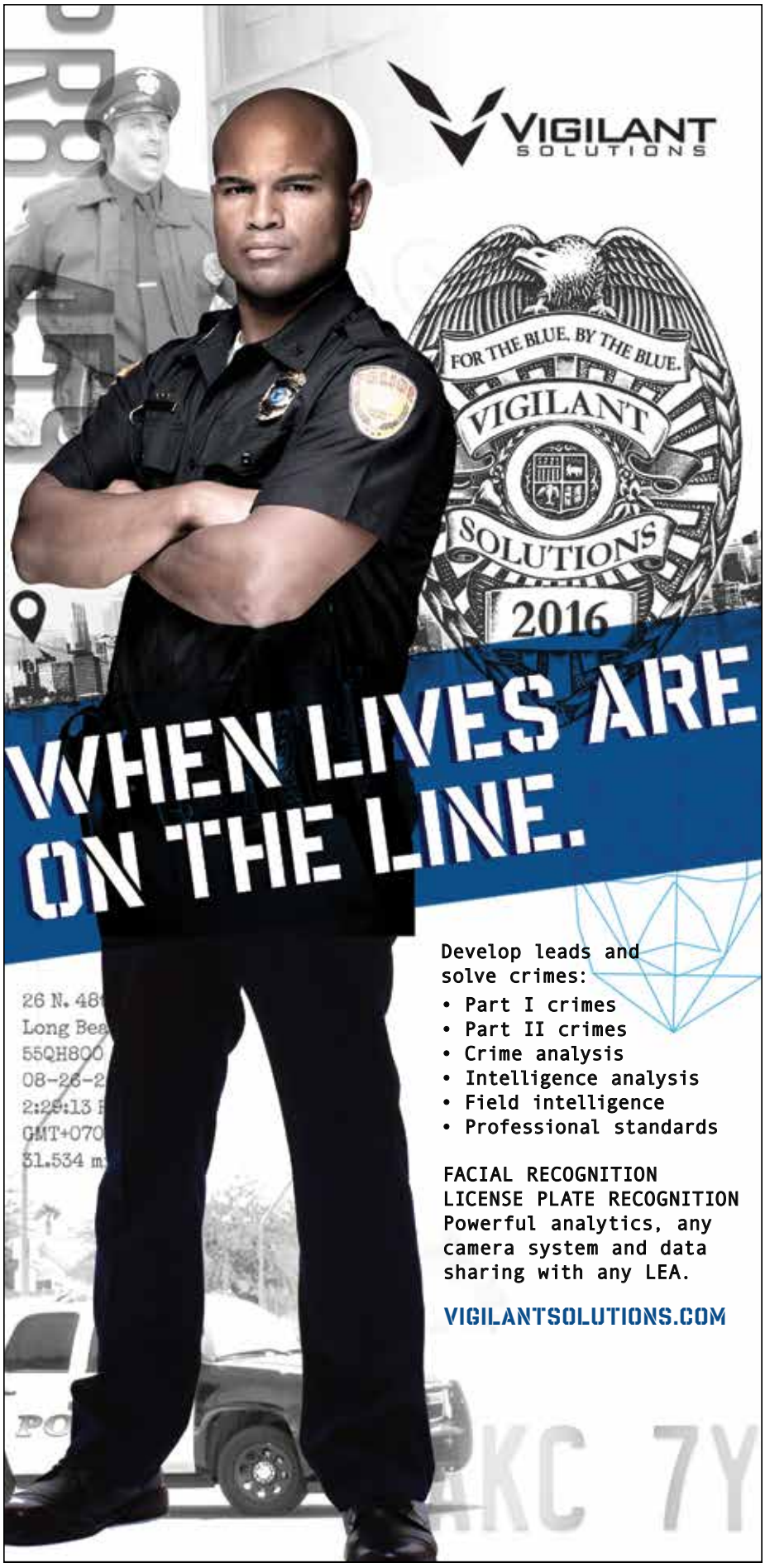
can change the meaning of "authorized access" from being about "something you have" (e.g., badge) to being about "who you are" (e.g., unique iris). This eliminates the danger of unauthorized access due to lost or stolen tokens, badges, or personal identification numbers.

Mobile iris recognition, used to identify an individual in the field, offers an important application for the iris modality. Mobile fingerprint identification technology is already widely used by criminal justice agencies across the United States due to the substantial legacy fingerprint databases currently in existence. As the iris image repository grows, so will the utility of the modality. Although mobile iris recognition devices exist that can rapidly capture the iris on the fly, the lack of a substantial iris database currently inhibits a mobile iris service that would parallel mobile fingerprint identification.

FBI's Iris Pilot Project

The California Department of Justice and the Texas Department of Public Safety were among the first state agencies to participate in the iris pilot and provide connectivity to local criminal justice agencies with the ability to submit iris transactions to the FBI. More recently, participation and submissions have steadily increased throughout the pilot's use with more than 11 U.S. agencies currently participating. Several additional agencies are pursuing iris pilot participation, and some current participants are further expanding iris deployments. Iris pilot participants execute a memorandum of understanding (MOU) with the FBI and work collaboratively to implement the functionality.

In southern California, the Riverside/San Bernardino Regional CAL-ID has fully embraced the iris as the "fingerprint of the future" for rapid identification. Both the Riverside County Sheriff-Coroner Department and the San Bernardino County Sheriff-Coroner Department, as part of the regional CAL-ID network, provide member law enforcement agencies within the two counties with biometric services. In January 2013, the Riverside/San Bernardino Regional CAL-ID began the collection of iris images during the jail booking process, accumulating iris images from nearly 300,000 arrestees to date. In October 2014, the San Bernardino County Sheriff-Coroner Department's CAL-ID unit began submission of iris data to the FBI's iris pilot. The iris data are included within the standard NIST-formatted booking record, which also includes demographic data, finger- and palm-print images, and mugshot images. A bulk upload of their existing iris records was provided as well. The Riverside County Sheriff-Coroner Department's CAL-ID unit has also recently began direct submission



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to the iris pilot and is in the process of bulk uploading their existing records. Once this enrollment is complete, the unit's contributions to the U.S. repository will ensure centralized and interoperable storage.

The Texas Department of Criminal Justice (TDCJ) is also adopting iris technology. Currently, 10 state correctional facilities within Texas are using the capabilities of the iris pilot. Images are collected from inmates incarcerated at these facilities, and iris searches are conducted as a part of the release process. More than 79,000 iris transactions have been conducted by the TDCJ correctional facilities since they began participation in the iris pilot.

The U.S. Border Patrol, realizing the potential benefit of this biometric modality, previously conducted their own iris pilot. They now have nine locations across the United States participating in the FBI's iris pilot. Other agencies that have signed an MOU to participate or are providing iris images to the iris pilot are the Missouri State Highway Patrol, Rhode Island State Police, U.S. Probation, Department of Defense, and the U.S. Marshals Service.

The Joint Automated Booking System (JABS) of the Department of Justice supports the connectivity of federal agencies to the FBI Criminal Justice Information Services (CJIS) Division for the submission of biometric and booking data. Prior to the FBI's iris pilot, JABS did not support iris image submission. However, multiple federal agencies formally requested JABS upgrade to pass iris transactions. As a result, JABS reprioritized internal initiatives to accommodate these users. JABS has already completed the programming necessary to support the enrollment of iris images and plans to support iris search requests.

Quality Matters

As with other biometrics, the quality of the iris images directly impacts the algorithm's performance. This is true of both the initial image enrolled into the repository as well as the image collected for search against that repository at a later date. The better the quality of the images used, the better the results. Within the biometrics community, efforts exist to develop iris image capture best practices and an iris image quality metric that correlates directly with the performance of available matchers.

NIST has developed the following, recommended materials: a report, *IREX V: Guidance for Iris Image Collection*; instructional slides, *Best Practices for Iris Image Capture*; and a poster, *Guide to Capturing Iris Images*. These resources can be accessed for no cost at www.nist.gov/itl/iad/ig/irexv.cfm.

The Future of Iris Recognition

Short-term goals for the FBI's iris pilot include increasing participation, promoting

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interoperability, and establishing best practices for iris capture and identification. Iris matching will complement other biometrics such as fingerprints and has the ability to make identifications in situations where fingerprints and other biometrics cannot (e.g., low-quality fingerprints and facial images). With the possibility of easy use and high accuracy, iris technology may be the biometric identifier that criminal justice agencies should consider integrating into everyday operations, based on these key discoveries:

- Iris technology is quickly proving to be a hygienic, accurate, and effective tool for the rapid identification of persons.
- The iris, as a biometric identifier, can provide law enforcement with an additional means for identification.
- Growth of the iris repository increases the usefulness in both investigations and enhancing officer safety.
- Mobile recognition, the ability to identify an individual in the field, offers an important future application for the iris modality.

The FBI's CJIS Advisory Process is based on the concept that close collaboration on strategy, operational, policy, and technical issues is a critical component to the administration of criminal justice. The FBI, along with local, state, tribal, and federal data providers and system users, shares responsibility for the operation and management of all systems administered by the CJIS Division for the benefit of the criminal justice community. As the FBI's iris pilot continues, sustained partnership will allow all users to benefit from state-of-the-art technologies. ❖

To learn more about the FBI's iris pilot, review the *Technical Specifications Document for the Iris Pilot (IP) Project*. The document provides further description of the iris biometric, use cases, pilot services, and the specifications necessary to use the iris pilot. Find it and more information regarding the FBI BCOE at www.fbibiospecs.cjis.gov.

Notes:

[1]Anil K. Jain, Patrick Flynn, and Arun A. Ross (eds.), *Handbook of Biometrics* (New York: Springer Science + Business Media LLC, 2008), 72.

[2] John Daugman and Imad Malhas, "Iris Recognition Border-Crossing System in the UAE," *International Airport Review* 2 (2004), https://www.cl.cam.ac.uk/~jgd1000/UAEdeployment.pdf (accessed August 15, 2016).

[3]Saritha Rai, "Why India's Identity Scheme Is Groundbreaking," BBC News, June 6, 2012, http://www.bbc.com/news/world-asia-india-18156858 (accessed August 15, 2016).

[4]National Institute of Standards and Technology (NIST), Information Technology Laboratory, "NIST Test Proves 'The Eyes Have It' for ID Verification," news release, November 3, 2009, http://www.nist.gov/itl/csd/d_110309.cfm (accessed August 15, 2016).

[5]NIST, *Personal Identity Verification (PIV) of Federal Employees and Contractors*, Federal Information Processing Standards Pub. 201-2 (Washington, D.C.: NIST, 2013), http://nvlpubs.nist.gov/nistpubs/FIPS/NIST.FIPS.201-2.pdf (accessed August 15, 2016).

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By Carl Maupin, Captain, Leesburg Police Department, Virginia

Implementing Evidence-Based Practices

Many law enforcement organizations continue to struggle with development of evidence-based policies and practices, and some still question the actual validity of the endeavor. To some degree, this is understandable, considering the thousands of police organizations within the United States and the disparity of resources among them. Across the profession, law enforcement leaders tend to either discount academia outright or, at best, struggle to translate its findings into real applications. The Leesburg, Virginia, Police Department continues to endure the process of developing and implementing evidence-based policing, which remains challenging despite initial positive results. The following is a synopsis of its use of evidence-influenced policy to promote crime control, community trust, and legitimacy.

Various models and concepts exist for developing evidence-based practices, including the research-based practitioner model, the embedded research model, and the organizational excellence model.[1] In the research-based practitioner model, the practitioner (e.g., law enforcement officer) is responsible for acquiring and implementing evidence-based knowledge and determining whether or not and how to incorporate the knowledge into practice. For the embedded research model, evidence-based knowledge is infused in organizational systems by senior administrators (e.g., law enforcement leaders or city management) and does not involve the awareness of the practitioner responsible for executing relevant practices. The organizational excellence model requires general acceptance of evidence-based knowledge at all levels of the organization (leaders and officers) and relies on all stakeholders' participation and input to validate relevant practices, thereby expanding the evidence-based knowledge in the local context. Resources available to the law enforcement organization and the locality in which it operates are key factors in determining which model would be the most appropriate and effective. All things being equal, the organizational excellence model is the one that best incorporates the use of evidence-based practices and local experience of the organization, marrying science and craft.[2]

Historically, the Leesburg Police Department (LPD) tended to adhere to the research-based practitioner model and embedded research model. Senior staff would direct the implementation of practices and policies based on their own research or research-based practices from outside sources (U.S. Department of Justice, National Institute of Justice, etc.). Success or failure of these practices tended to rely more on endorsement from opinion leaders than their merit. Such was the case in 2012, when the LPD experienced a sustained increase in property crime while all other crimes remained flat or were decreasing. Initial analysis identified shoplifting and related crimes as the primary offenses driving the increase (Figures 1 and 2).

The Crime and Traffic Accountability Program (CTAP) is used by the LPD to identify emerging quality-of-life issues and crime trends. Sergeants and higher ranks attend monthly meetings to review these matters, discuss allocation of police resources to address issues, and implement a coordinated response. Subsequent meetings review the effectiveness of the responses, along with new matters. The initial response to the shoplifting trend was to adopt a zero-tolerance approach that relied on saturation patrols of the retail areas and emphasized a rapid response to reported shoplifting offenses. This approach yielded increased complaints of overbearing officers during contacts with the public (both persons of interests and complainants). Most officers

lacked the motivation to go beyond simply taking a report to document the reported crimes. The officers had become disenfranchised upon learning that many of the stores had corporate policies that precluded them from supporting prosecution, and the retailers became leery of the officers out of fear of being identified as a witness responsible for the intimidating police intervention in the presence of their patrons. Fundamentally, the LPD failed to understand the nature of the shoplifting problem—so the failed intervention, while perplexing at the time, should not have been a surprise. A new approach was needed.

Around the same time, the idea of evidence-based policing was being explored by a few commanders within the LPD. In light of the failed initial response to the shoplifting trend, a decision was made to step back from the problem and explore an evidence-based approach.

Prior to investing already limited resources into detailed analysis of only shoplifting offenses, a more general macro analysis of the crime across Leesburg was completed to identify micro hotspots (Figure 3). Part 1 crimes occurring from 2009 to 2011 were geocoded along street centerlines with the aggregate joined to each street segment to determine crime concentration. The associated street segments were then ranked by crime concentration (i.e., highest frequency of Part 1 crimes). One street segment among Leesburg's 249 miles of road surfaces had a total of 308 Part 1 crimes reported.[3] This equates to 15.53 percent of all reported Part 1 crimes over the three-year period. The street segment was in the 200 block of Fort Evans Road NE, which is the location of a retail outlet mall. The Part 1 crimes for this period were then filtered to include only those crimes occurring at the outlet mall to reveal that 197 of the 308 (64 percent) reported crimes at this location were shoplifting offenses. This validated the micro-hotspot analytical process and verified that the outlet mall was a crime generator. This defined the "where" of the crime problem, but additional analyses were required to define the specific offenses.

To understand the law enforcement challenges in reducing shoplifting, internal and external surveys were completed. Internally, officers and supervisors identified two primary issues. The first was the lack of success identifying the entire organized retail crime (ORC) group. Patrol officers would respond to the initial store and make sequential contacts as other victim stores were identified, which often resulted in some or all of the offenders evading contact. The second issue was that significant patrol resources were utilized to document the initial incident through initial reporting, inventorying and returning property, and processing prisoners. This was generally completed by one or two patrol officers, only to have a detective re-interview all parties to complete the investigation later. The latter issue had a divisive effect between the uniformed officers and detectives. Informal polling of other agencies found that the prevailing practice was still catch-as-catch-can, with only limited use of intelligence-based policing to target known repeat offenders.

An online survey was created to solicit input from the retailers at the outlet mall to assess their perspective on the shoplifting offenses, as well as their willingness to work with law enforcement to identify a solution. The survey ensured the anonymity of the responders in order to encourage participation. During the course of their directed patrols, uniformed officers personally delivered postcard invitations to store managers. The survey results revealed that the retailers actually had a favorable impression of the Leesburg Police Department. The perceived apathy to the shoplifting was actually fear of violating their corporate policies. The retailers all knew or believed that they were victims of shoplifting on a daily or weekly basis and were frustrated by either not detecting the thefts when they occurred or by being prohibited from reporting those that were. Electronic area surveillance tags (EAS) and closed-circuit television (CCTV) systems were found to be used by most retailers; however, the reliability and application of these theft-prevention devices varied greatly.

Figure 1: Reported crime distribution comparison of Part I.

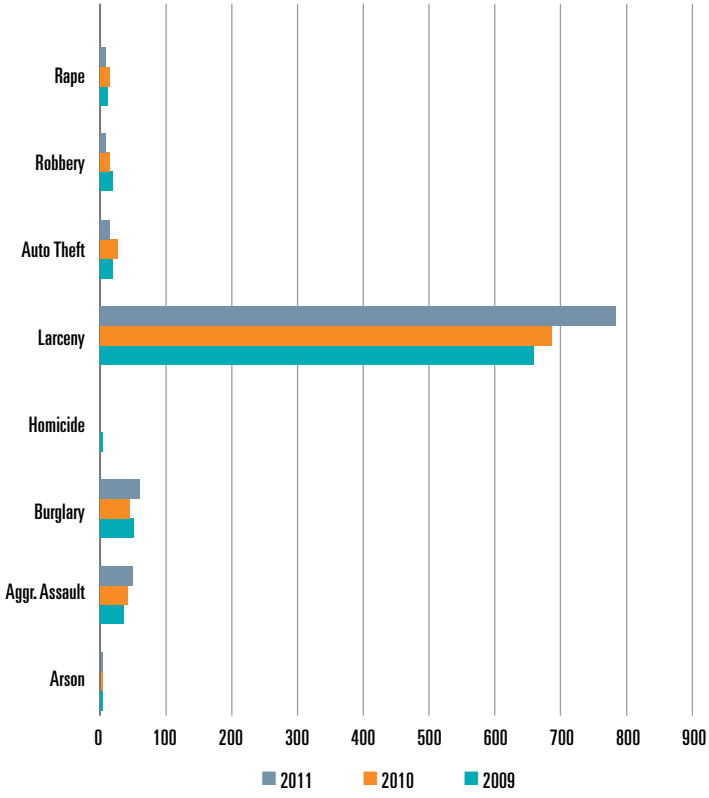

Figure 2: Larceny crimes for Leesburg, VA, 2009–2011.

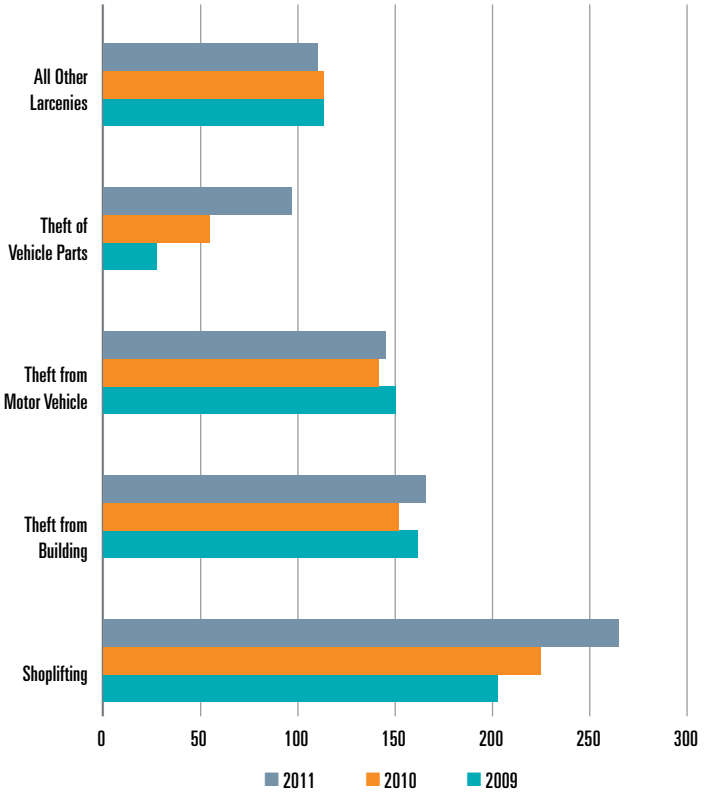

Figure 3: Spatial concentration of Part 1 crimes in Leesburg from 2009–2011.

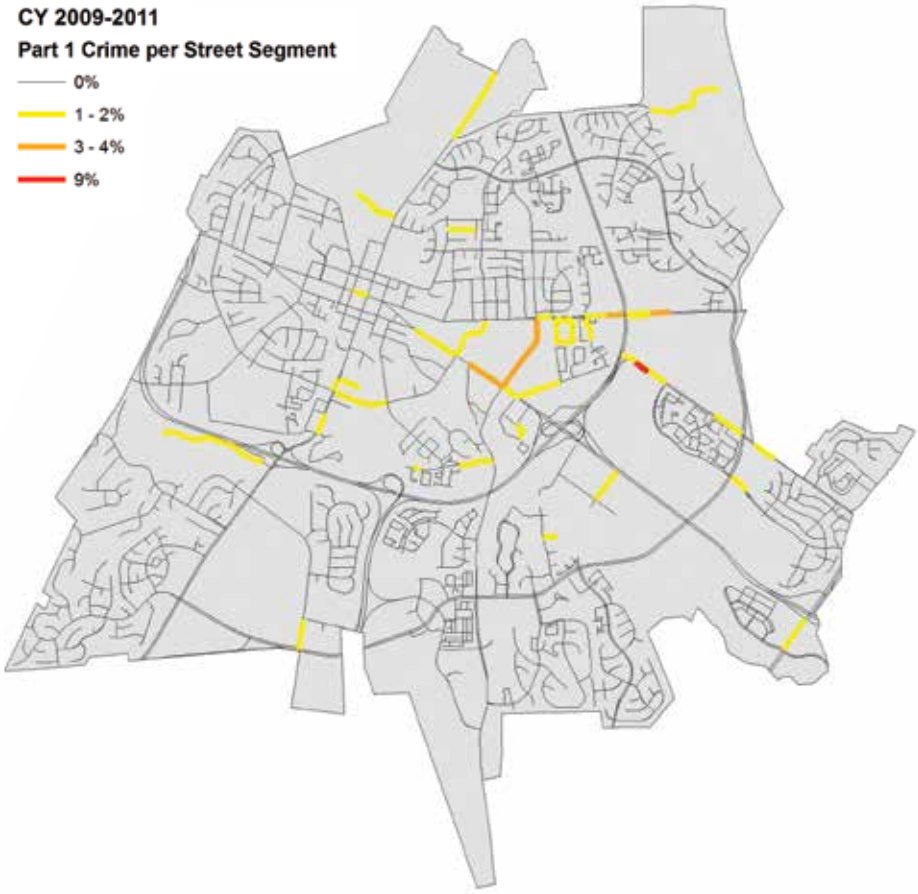

Figure 4: Shrink analysis of retail brand at NCR sites.

Following the survey, retailers revealed that the retail industry refers to the loss of inventory through crime and administrative error as "shrink." Several brands shared their shrink data with the Leesburg Police Department. One Leesburg store led its entire brand (all U.S. stores) in shrink for 2011 and was on track to do the same in 2012. The Global Retail Theft Barometer (GRTF) provides estimates for the retail industry on what percentage of shrink is attributed to shoplifting, internal theft, administrative error, and so forth. In 2011, the amount of shrink attributed to shoplifting in North America was 36 percent.[4] Surprising, when the amount of shrink attributed to shoplifting was compared with the thefts reported to the police, only .01 percent and 1.95 percent of thefts were detected and reported in 2010 and 2011 respectively (Figure 4).

A study of the cost of the shoplifting offenses found further disparity for incidents at the retail outlets. The average value of merchandise taken during shoplifting crimes in the Commonwealth of Virginia was relatively stable. Losses of $225 in 2009, $168 in 2010, and $199 in 2011 were reported statewide.[5] During the same time period, shoplifting losses in Leesburg incidents increased sharply from $181 in 2009, to $409 in 2010, and $399 in 2011. Further review found that the average loss per incident at the Leesburg outlet mall was nearly double that of the state average, while all other Leesburg retailers experienced less than a third of the state losses (Figure 5).

A temporal analysis of shoplifting across Leesburg—comparing shoplifting offenses at the outlet mall with those occurring at other retail sites in town—revealed that shoplifting incidents at the outlet mall were concentrated from Thursday to Sunday between early afternoon and closing, while retailers located in other parts of Leesburg were targeted every day from mid-morning to early evening. This information further supported that shoplifting at the outlet mall was a problem distinct from community-wide shoplifting and warranted an evidence-based approach to identify specific situational crime prevention strategies.

Finally, the residency of known shoplifting offenders was analyzed based on the target of their crime (the outlet mall or other Leesburg retailers). Over 70 percent of all outlet mall shoplifting arrestees were out-of-state residents, with an overwhelming majority of them residing in Washington, D.C., and the suburbs of Baltimore, Maryland. Conversely, Virginia residents accounted for nearly 90 percent of shoplifting arrestees at all other non-outlet stores in Leesburg.

Research on the shoplifting phenomena was used to qualify the analysis results. It appeared that most retailers in Leesburg were being targeted by opportunistic shoplifters (sporadically taking merchandise for convenience), while the outlet mall was targeted by ORC offenders (organized theft of merchandise in quantity for resale or fraudulent return). Existing literature found that most retailers believed CCTV, EAS, and private security to be ineffective in combating ORC. Situational crime prevention (SCP) and uniformed police officers were found to be the most effective.[6] This study also cautioned that displacement was an undesirable potential outcome of increased presence of uniformed police officers. Unconfirmed observations from the retail industry noted that stores with

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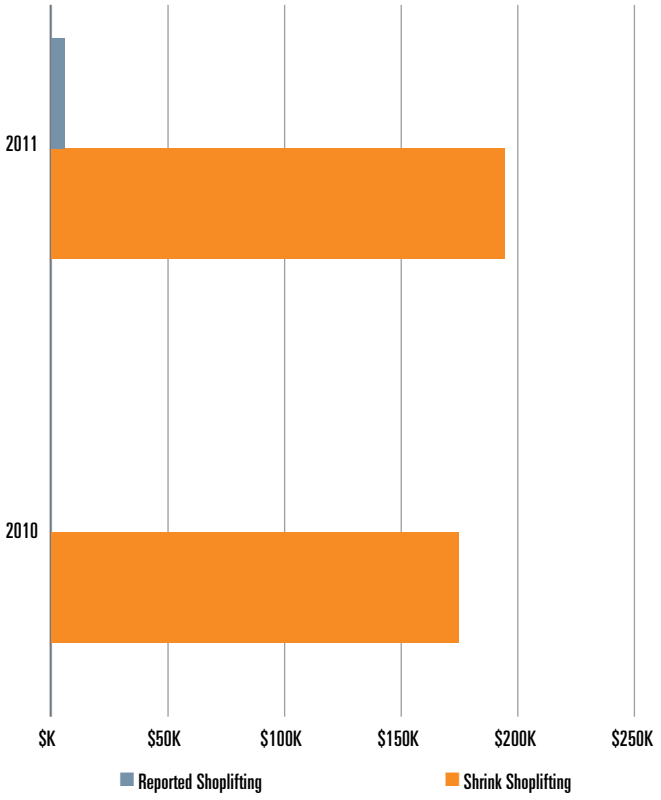
Figure 5: Comparison of losses in Leesburg and Virginia.



higher customer servicing (the practice of greeting and conversing with patrons to increase sales) generally had less shrink. The practice appeared to enhance the ownership of the store and discourage shoplifters from offending there.

In summary, ORC incidents targeting the outlet mall in Leesburg were so prevalent that they were driving crime rates up for the entire town and impacting loss to retail brands on a national scale. A successful police intervention to reverse this trend would have to target the prolific repeat offenders, discourage the opportunist offenders without making arrests, and accomplish these goals in a manner consistent with the police role of guardian.

Solutions

Several courses of action were considered before deciding on the final approach. Each option was best characterized by the prevailing viewpoints as "maintaining the status quo," "zero tolerance," or "evidence-based innovation." Maintaining the status quo involved placing responsibility solely on the retailers. Supporters of this approach did not see the value of devoting police resources to shoplifting when the retailers appeared to be apathetic to the issue. This option would likely see the continuing rise in ORC incidents at the outlet mall. The zero-tolerance approach was problematic in its own right. Prior attempts at zero-tolerance solutions resulted in complaints about officers and were associated with an uninviting shopping atmosphere. Even plainclothes officers conducting interdiction operations were unsuccessful in detecting ORC offenders among outlet mall patrons. Successful interdiction, if achieved, would still result in only limited success, as the perceived risk to other offenders would still not be high enough to discourage them.

After considering the options, the evidence-based approach was selected, and the initial skepticism that the department was

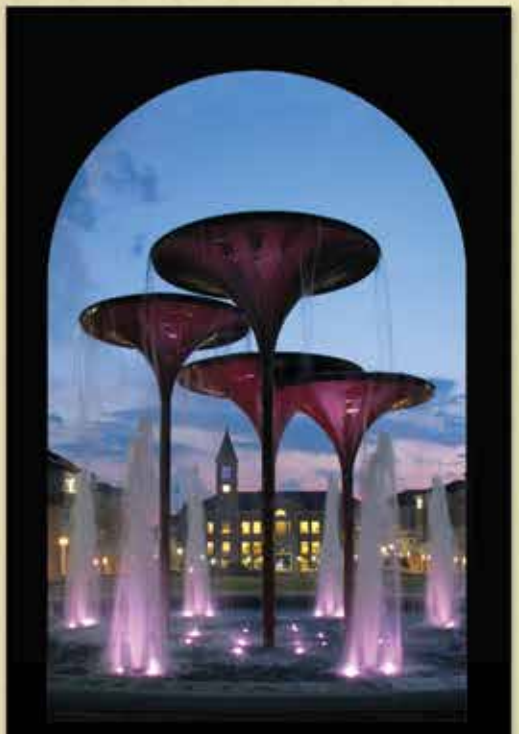


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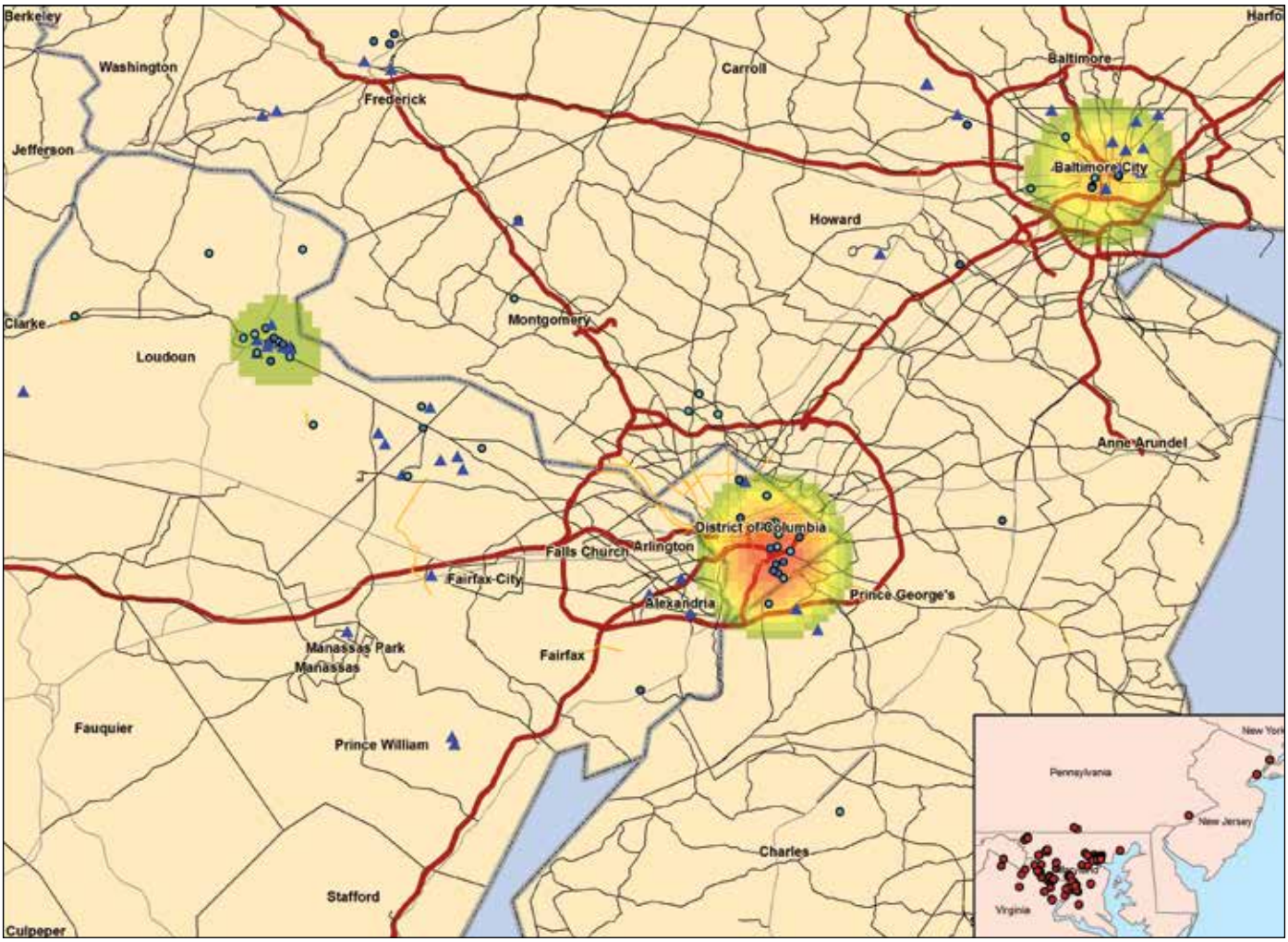
Figure 6: Residency of known shoplifting offenders at the Leesburg Outlets.



investing too much in a retail problem was overcome. The resulting ORC initiative began in August 2012 and ended in December 2012. It was based on three components: deterrence, detection, and enforcement. Each component was essential to increasing the perceived and actual risk to would-be ORC offenders, increasing law enforcement legitimacy and cooperation with retailers, and achieving sustainability with limited department resources.

Deterrence

- Visible patrols by uniformed officers were assigned Monday through Friday from 2:00 p.m. to 6:00 p.m. based on the analysis. Officers were to remain mobile (on foot and in a marked vehicle), make eye contact, and offer a polite greeting to everyone.
- Field interviews were initiated only if specific ORC behaviors or significant public safety threats were observed by the officer.
- Retailers were briefed individually on security camera positioning, high-value product placement, and the process for providing anonymous tips if corporate policy prohibited formal reporting.
- Semi-monthly meetings were held with loss prevention personnel (LPs) to promote information sharing across brands and with law enforcement. Target agreed to provide site assessments to assist with CCTV placement for outlet mall stores.

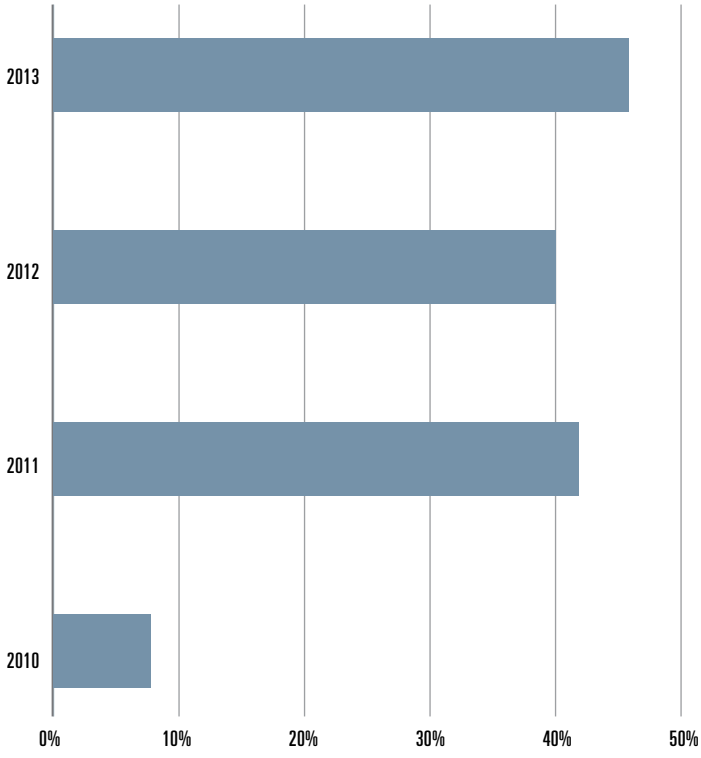
Detection

- Roll-call training was provided by the Office of the Commonwealth Attorney on key elements of shoplifting-related offenses to improve initial investigation, reporting, and case management.
- ORC behavior detection and mobile surveillance training was provided by Gap, Inc., to uniformed officers assigned to the ORC initiative. This was an unprecedented action by the company.
- Remote viewing technology was deployed on an evaluation basis to allow officers to observe CCTV cameras in real time without interfering with the stores' LPs.
- Law enforcement access was granted to the private alert network of one retailer, allowing real-time information sharing of private sector reports.

Enforcement

- The response practice to ORC-related calls for service was modified. A supervisor and four officers were dispatched to ensure sufficient resources and leadership to verify information from the victim while locating and detaining all offenders in a timely manner. Upon apprehension of an offender, a detective was dispatched to handle the initial report, property issues, and follow-up investigation while uniformed officers returned to patrol.

Figure 7: Proactive Reporting.



- Interdiction operations were scheduled based on shopping holidays. Patrol officers in plainclothes paired with LPs to patrol the outlet mall and detect ORC offenders. Dedicated uniformed officers were sequestered off-site to serve as the contact and arrest teams once offenders and their vehicles were identified.

Results

All aspects of the preliminary phase of the ORC initiative were implemented from August to December of 2012. Because the ORC offenses had rarely been detected or reported, an increase in both shoplifting arrests and reports was anticipated during the initial implementation, regardless of how successful the deterrence efforts were. Initial success was measured by the ratio of reactive to proactive shoplifting reports. Reactive calls for service were those reported to the communications center by phone from the public. Proactive reports were those reported to the communications center by radio communication from an officer already on the scene. In theory, the increased presence of officer interactions with the public generates more tips and reports from members of the public who otherwise would not call the police to report a crime. Increases in proactive reports were significant during these months—but not enough to impact the year-end results. However, a sustained increase was achieved the following years in 2013 and 2014 (Figure 7).

The ORC initiative was continued through 2013 and remains in place today. The LPD enjoys increased legitimacy and collaboration with retailers through an improved relationship with store employees. A network of retail executives, loss prevention agents, and analysts on the regional level has been developed and is directly responsible for the exposure of the LPD to private sector information. This information has been used to introduce retailers to law enforcement representatives in other agencies and establish links

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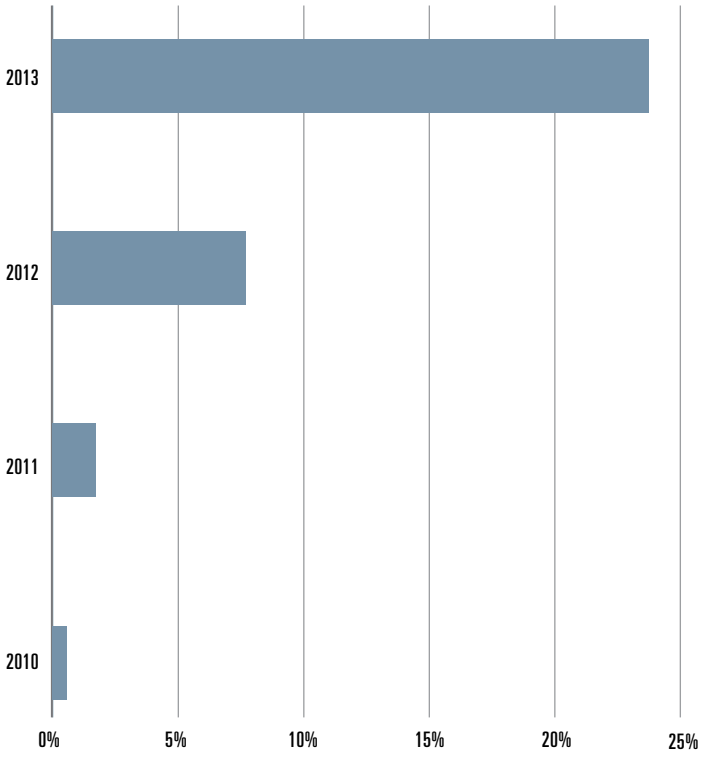
Figure 8: Shrink Reported as Shoplifting.



among regional cases across the U.S. East Coast. Among the brands sharing shrink data, it was noted that the Leesburg stores are no longer identified as "problem stores" by the retailer and no longer require additional resources from the brand to curb shrink. Shrink levels are now commensurate with those of regional sites within the brand. The proportion of stolen merchandise captured in reports has, in relation to those extrapolated from shrink values, grown from 1 percent in 2010 to 24 percent in 2013 (Figure 8). Reported shoplifting offenses and the loss associated with them, remained high throughout 2013 and into 2014. An intangible benefit of the public-private partnership is that the brands associated with former problem stores are not reallocating the loss prevention resources to other stores—they have chosen to keep them in Leesburg to reinforce the achievements already made. In addition, minimal overtime was used to facilitate the training and interdiction operations. The place-based interventions used for the ORC initiative are sustainable and have been used to address crime control on a town-wide scale by the LPD.

Discussion

The first run at true evidence-based policing by the Leesburg Police Department was an unqualified success. Legitimacy with the retail community was reestablished as measured by the increased reporting of crime and increased collaboration with the police while still respecting corporate policies of each brand. The prevention practices and enforcement of prolific offenders yielded a true diffusion of shoplifting within the region. Despite this, the evidence-based approach was still met with skepticism by many within the ranks. A major effort to improve receptivity among officers was undertaken by command. Supervisors were educated on evidence-based theories and participated in a discussion group that reviewed related topics of their choosing on a monthly basis. They were encouraged to identify issues within the community and to develop their own evidence-based interventions for implementation with support from command if resources were needed beyond their squad. Endorsement of evidence-based approaches by opinion leaders and the capacity of decision makers to familiarize themselves with relevant research continue to limit success.

The Leesburg Police Department's experience with evidence-based policing is not unique within the policing profession. The challenges of capacity and buy-in are universal, regardless of a law enforcement organization's resources or local environment. That said, this example is an endorsement for the organizational excellence model. Educating staff and empowering them to develop, implement, and evaluate evidence-based practices at all levels of the organization is key to overcoming these challenges. ❖

Notes:

[1]Sandra Nutley, Tobias Jung, and Isabel Walter, "The Many Forms of Research-Informed Practice: A Framework for Mapping Diversity," *Cambridge Journal of Education* 38, no. 1 (March 2008): 53–71.

[2]James J. Willis, "Improving Police: What's Craft Got to Do with It?" *Ideas in American Policing* 16 (June 2013), https://www.policefoundation.org/publication/improving-police-whats-craft-got-to-do-with-it (accessed August 12, 2016).

[3]Miles of road surfaces provided by the Town of Leesburg's Department of Engineering and Public Works.

[4]Centre for Retail Research, "The Global Retail Theft Barometer 2011," http://www.retailresearch.org/grtb_currentsurvey.php (accessed August 1, 2016).

[5]Derived from Uniform Reporting Section, Department of Virginia State Police, *Crime in Virginia*, 2009, 2010, and 2011, http://www.vsp.state.va.us/Crime_in_Virginia.shtm (accessed August 12, 2016).

[6]Caroll T. Capers, "Effectiveness of Situational Crime Prevention Strategies to Deter Organized Retail Theft" (doctorate of management dissertation, University of Phoenix, 2008).

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Embracing The Cloud

How Third-Party Digital Evidence Can Make the Case

By Stephen L. Niemczak, Special Agent in Charge; Luke Erickson, Digital Investigations Director; Jason Cantrell, Digital Investigations Director; and Scott A. Vantrease, Assistant Special Agent in Charge; U.S. Department of Health and Human Services, Office of Inspector General, Office of Investigations, Digital Investigations Branch

As technology advances, it becomes a larger part of "traditional" criminal investigations that previously had little nexus with technology. Law enforcement administrators should consider proactively encouraging their staff to develop an understanding for a new era of potential evidence that can ultimately include invaluable information for investigators—third-party electronically stored information (ESI). ESI from cloud data and mobile device applications, more commonly referred to as "apps," can supply evidence that investigators can collect by establishing probable cause through the legal process.

The amount of ESI that people keep in the form of texts, emails, pictures, and documents can be staggering. The majority of U.S. residents, for example, no longer access the Internet primarily via a laptop or desktop computer anymore. A large segment of the world's population has access to and uses mobile devices to connect with thousands of apps that interconnect third-party providers who may have ESI of evidentiary value in almost any investigation.

How much ESI can be obtained through mobile devices from third-party cloud application providers? Consider, for example, a standard 16 gigabyte mobile device, which has the capacity to contain the equivalent of "16 truckloads of paper documents" for investigative review.[1] However, an investigator will find that third-party cloud apps can hold even more ESI (and potential evidence) than the standard smartphone.

Investigators may find that ESI contains evidence that has not been collected through traditional methodologies such as the execution of a search warrant at a physical location. This ESI evidence can be obtained from a third-party custodian via a search warrant, potentially without the subject being notified. Even in light of the recent encryption discussion, the tools and evidence available to investigators who are prepared to seek it appropriately can reveal information and evidence that can allow the investigative and

FIGURE 1: Average amount of ESI per source.
(with one truck equaling one truckload of paper)

DEVICE	TRUCKLOAD
16GB Mobile Device:	🚚🚚🚚🚚🚚🚚🚚🚚🚚🚚🚚🚚🚚🚚🚚
Facebook Account:	🚚+
Twitter Account:	🚚
Instagram Account:	🚚
Tax/Accounting Aps:	🚚🚚+
Apple iCloud Fee:	🚚🚚🚚🚚🚚
Amazon Cloud Drive Basic:	🚚🚚🚚🚚🚚
Hotmail Account:	🚚🚚🚚🚚🚚
Google Gmail/Google Drive:	🚚🚚🚚🚚🚚🚚🚚🚚🚚🚚🚚🚚🚚🚚
Office/Outlook 365:	🚚 x 1,000
Amazon Cloud Unlimited:	🚚 Unlimited
Pogo Plug personal Cloud:	🚚 Unlimited

judicial processes to be shortened, saving investigative resources and time and allowing for more efficient results.

For example, investigators may be able to see what suspects have on a phone, tablet, or computer, such as pictures or emails that were sent minutes before a crash; the participants in a reported email threat; financial information such as the content of a QuickBooks account; and so forth—all of which may help an investigation.

As more and more technology is finding its way into the hands of the general public, including criminals, technology companies are working to supply storage to hold everything anyone may want, and most of this storage exists in the cloud. Simply put, the "cloud" is a term that many people use in reference to the Internet, but more specifically, it is a datacenter made up of servers (computers) that are connected to a user through the Internet. Apple, Google, Amazon, Microsoft, Yahoo, and AOL are examples of cloud providers that supply users with the ability to access and store information via the Internet using specific cloud account login credentials. Even public school systems, colleges, universities, and government organizations are leveraging third-party providers for emails and

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cloud storage for students and staff. Third-party ESI can contain the emails, texts, documents, pictures, patient charts, and information in accounting or medical software that is stored in some form of corporate cloud. It makes users' lives easier—and it can make investigators' jobs easier, too, if they know what to do and where to look.

The first thing many investigators ask is "What third-party ESI is generally available?" In reality, third-party ESI is becoming common and readily available to the general populous. Services like Dropbox, Microsoft OneDrive, and Google Drive allow users to store and access a multitude of file types on a local platform (e.g., mobile phone, tablet, desktop or laptop computer) while the files are stored elsewhere. Apple's iCloud allows users to store and access most of their own content, including emails, texts, photos, music, and data. A business's accounting, payroll, and employment files may be held off-site through an Internet-based software, but accessed from a computer in a local office or home. Even TurboTax is now a cloud-based application. This transition to cloud storage is occurring as companies find it easier to ensure operation and update software maintained online in place of the traditional path of selling desktop software.

One very useful and readily available third-party ESI is email. While it is the easiest of the third-party ESIs to identify and contains extensive information that many investigators may seek, it is often overlooked. Emails, whether sent through social media sites (e.g., Facebook, LinkedIn, Twitter, Tango) or common third-party-based systems (e.g., Yahoo, Outlook, Gmail) are often overlooked as they are not found at a traditional search site and might not be collected by digital forensic personnel imaging on-site. ESI might not be located on any digital device being imaged at the search site, so cloud-based email data may be left untapped, and accessing cloud email may require a second round of follow-up search warrants.

As web-based technology is becoming more publically available, many in law enforcement have left its possible uses in the investigation process untapped. This may be due to a lack of training, understanding, or guidance on how to identify cloud-based third-party ESI. However, collecting ESI from third-party cloud providers can be easily done. Once the specific ESI is located and identified, it can be preserved and collected through the search warrant process, potentially before physical search warrant operations take place.

If third-party ESI is obtained by the investigator and reviewed prior to executing a search warrant at a subject's physical address, the focus of how interviews are conducted during the search can be narrowed to specific items known by the investigator. As a result, subjects can be caught off guard when presented with facts and images they believed were unknown to investigators, but that had been legally obtained without their knowledge.

A sample interview where an investigator utilizes previously collected ESI follows:

Investigator: *Have you ever been to Miami in the past?*

Suspect: *No, never have.*

Investigator: *Why do I have a copy of flight information to MIA airport? [shows email confirmation from suspect's cloud-based email account]*

Suspect: *I never took that flight.*

Investigator: *Are you sure? [shows GPS data from photos of suspect in Miami, taken from cloud photo stream]*

Suspect: *Maybe I did take the flight.*

Investigator: *How well do you know John Doe?*

Suspect: *Not too well.*

Investigator: *Are you sure? [shows photos of the suspect with John Doe found on social media]*

Suspect: *I guess you could say we were friends.*

Investigator: *Did you ever buy an axe, duct tape, or weapon in the last month?*

Suspect: *Nope, never had an interest in those things.*

Investigator: *Are you sure? [shows a report of the suspect's Internet search history from his mobile device]*

Obtaining third-party ESI can be broken down into a three-step process: identification, preservation, and collection.

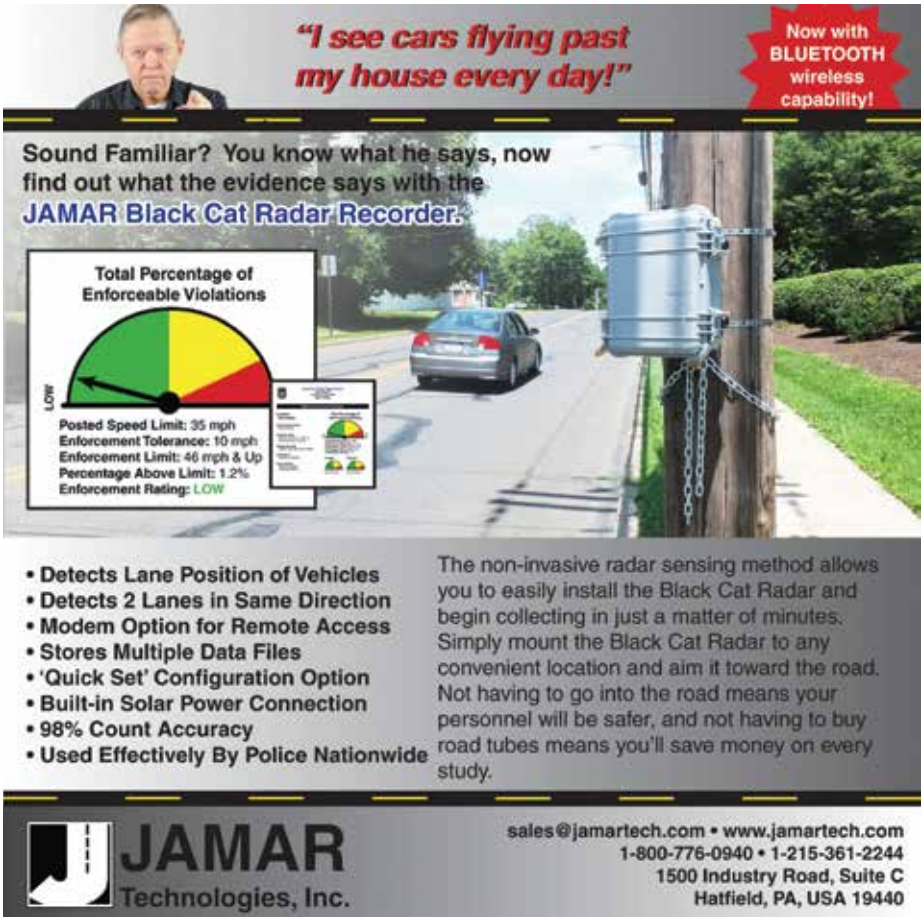
The first thing an investigator needs to do is identify third-party possibilities. This can be as simple as locating an email address on a corporate website or social media site or obtaining applications or documents where an email address is requested. Business cards are another great place to obtain email address information that can aid investigators in obtaining information in support of probable cause. Email account information is not the only item that can provide third-party identifying information. Email addresses are often used as unique login identifiers for mobile devices and their associated cloud apps.

Preservation requests and preservation orders are two methods an investigator can use to get cloud providers to copy and preserve ESI they wish to collect later via a search warrant. A preservation request is basically a formal memo or letter an investigator directly

Figure 2: A snapshot view of the ESI collection process developed by the authors.

sends to the provider and a preservation order is signed by a judicial official. The key difference is that preservation orders can be sealed. Investigators should contact the cloud provider first to see if they will notify the suspect of a preservation request; if so, the investigator should send only a sealed preservation order.

Stephen L. Niemczak, Luke Erickson, Jason Cantrell, and **Scott A. Vantrease** compose the management team for the U.S. Department of Health and Human Services (HHS), Office of Inspector General (OIG), Office of Investigations (OI), Digital Investigations Branch (DIB), which primarily provides digital investigative and forensic examination support for investigations of the HHS/OIG and its investigative partners. OI/DIB provides digital forensic support for approximately 150 operations annually and has been involved in collections exceeding two petabytes of data over the past five years.



For the investigator, the collection of third-party ESI is by far the easiest part. In response to the court order or search warrant, the third party will provide copies of the requested ESI to the investigator, often electronically and covertly. Depending on the ESI sought, investigators might find the provided information to be searchable and easier to review than traditional paper evidence. The majority of the ESI collected should be relevant to the case and might lead to other potential co-conspirators, indictments, and additional cloud searches. These warrants often can be renewed (monthly or quarterly) to collect updated ESI for long-term and complex investigations.

Lastly, administrators should ensure that investigators take precautions when obtaining and reviewing third-party digital evidence. They should request that the cloud provider ships the ESI using an encrypted device that is FIPS-140-2 certified to protect any loss of personally identifiable information (PII) or personal health information (PHI).[2]

As technology advances, law enforcement agencies and investigators will become better prepared to utilize evidence found within ESI on a regular basis and increase their understanding of the treasure trove of information available from third-party cloud data and mobile device applications. Investigators who successfully utilize evidence in the form of texts, emails, pictures, and documents will be able to build cases that will result in successful prosecutions while utilizing less investigative resources. ❖

Notes:

[1]"How to Visualize Data," *Simply Ted* (blog), December 8, 2005, http://simplyted.blogspot.com/2005/12/how-to-visualize-data.html (accessed May 18, 2016).

[2]National Institutes for Standards and Technologies, Computer Security Division, Computer Security Resource Center, "FIPS PUB 140-2 - Effective 15-Nov-2001," Standards, modified February 1, 2016, http://csrc.nist.gov/groups/STM/cmvp/standards.html (accessed August 19, 2016).

IACP's *Guiding Principles on Cloud Computing*, updated in 2015, provides key principles law enforcement agencies should address in their planning and implementation of cloud solutions. Access the document at www.theIACP.org/portals/0/documents/pdfs/CloudComputingPrinciples.pdf.

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Forensics and Biometrics: Emerging Technologies in Identity Operations

By Don Salo, Director, Defense Forensics and Biometrics Agency; Toni Marie Diegoli, PhD, Defense Forensic Science Center; and An "Mike" Tran, PhD, Special Surveillance Programs, NAVAIR

Armed fighters in indigenous garb attack a squad of military police on a patrol. After the initial skirmish, the fighters surrender their arms and are detained by U.S. military forces, and a search of the subjects' possessions reveals falsified identification documents from various countries.

Biometric samples are collected from each of the detainees, transmitted to the U.S. Department of Defense (DoD) biometric database, and compared against samples from all prior encounters. The system produced a positive match on two of the individuals, linking the subjects to a prior sample collected at a location containing bomb-making materials. After the analysis of the available biometric and associated information, the subjects are nominated and approved as known or suspected terrorists (KST) by the National Counterterrorism Center (NCTC). DoD provides the biometric samples to NCTC, which integrates the new biometric information with the already-known biometric and biographic information. NCTC then sends the files to the Federal Bureau of Investigation's (FBI's) Terrorist Screening Center (TSC) for inclusion to the National Terrorist Watchlist. TSC subsequently provides the biometric data to the FBI and Department of Homeland Security (DHS) for inclusion in their biometric databases. Eventually, the detainees are released to a foreign government for adjudication and repatriation.

Several years later, a U.S. Customs and Border Patrol (CBP) team responds to a trespassing complaint along the U.S.-Mexico border. Two subjects are apprehended and biometric samples are taken at the border patrol primary station. The facial photograph is transmitted to the DoD biometric database, while the fingerprints are transmitted to DHS' fingerprint system (IDENT), resulting in matches against the previously shared biometric files the military collected from the detainees that identify the individuals as KSTs. Because the biometrics have been entered into the KST file, CBP's National Targeting Center (NTC) immediately alerts the TSC of the encounter. Upon notification, the TSC advises the NTC to investigate whether the trespassing act was an indication of a terrorist threat.

Although hypothetical, the vignette presented here is derived from real events that have occurred over the last decade. With continued conflict in the Middle East and the demonstrated ability of ISIL to strike beyond U.S. Central Command's area of responsibility, the need for advanced technology to confront these threats is more apparent today than ever.

DFBA's Mission: Utilize Technology to Deny Anonymity

In today's world, it is almost impossible to do anything without leaving a biometric trace. The Defense Forensics and Biometrics Agency (DFBA) uses this to its advantage, leveraging industry, academia, interagency, and international partners to develop dual-use biometric and forensic capabilities. These capabilities link individuals, materials, events, and places, denying anonymity to adversaries worldwide and enabling the detection and deterrence of illicit and terrorist activities.

As a component of the Military Police Corps, DFBA is a U.S. Army field operating agency under the Provost Marshal General, the Army's "top cop," that leads, consolidates, and coordinates forensics and biometrics military and business functions and operations for the DoD in support of a range of identity activities. In this role, DFBA supports the development of forensic and biometric capabilities that match adversaries to their biological traces and biographical histories in a tactically useful timeframe. Three specific programs that directly support this mission are the U.S. Navy's Naval Air Systems Command (NAVAIR) Aerial Surveillance Tracking Engaged from Remote Identification Assets (ASTERIA) and the rapid DNA and next-generation sequencing (NGS) efforts being supported by the Defense Forensic Science Center (DFSC).

Together, these technologies will enable a wide range of law enforcement and military missions, from combat operations to detecting and arresting transnational threats and criminals, enabling the positive identification of enemy combatants and countering criminal enterprises. As emerging technologies, these capabilities remain under development and are not yet deployed; however, once off the shelf, they will revolutionize the field and will provide operators a myriad of multi-functional tools tailored to their requirements.

Aerial Surveillance Tracking Engaged from Remote Identification Assets (ASTERIA)

The need to identify nefarious individuals is integral to national security interests. Whether operating together in a frontline surveillance mission or analyzing materials in a laboratory, biometrics and surveillance work hand-in-hand to ensure positive

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identification of known or suspected persons of interest along national borders and on U.S. military bases. Over the past decade, continued advancements in multimodal matching technologies capable of incorporating iris identification, fingerprint, facial recognition, and DNA are increasing the effectiveness and efficiency of biometric collections and individual traceability.

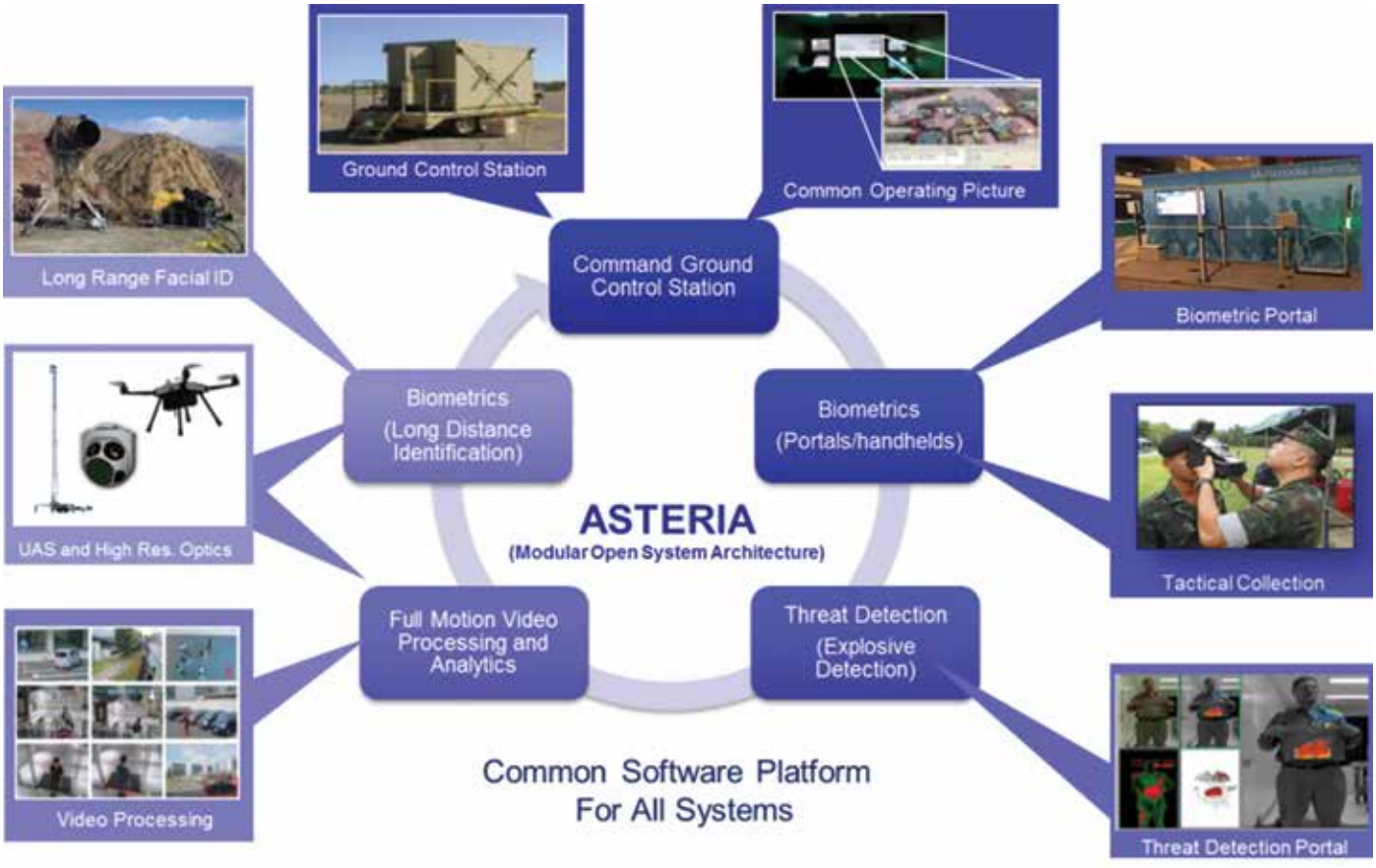
One such technological advance, ASTERIA, is currently under development at NAVAIR's Naval Air Warfare Center Aircraft Division, Rapid Capability Engineering & Integration Department. ASTERIA is a game-changing tool that, once deployed, will provide warfighters and law enforcement officers interoperable biometric identification; threat detection; and intelligence, surveillance, and reconnaissance (ISR) capabilities to counter KSTs, criminals, and illegal activities associated with these groups that threaten the safety and security of the United States. Today, biometric devices generally focus on one modality, and, if they are multimodal, they perform one function, such as access control. ASTERIA reforms the current system of operations by providing a multimodal set of devices designed to support multiple functions, tailorable to many different sets of requirements. This not only amplifies its usability across the biometric mission space, but also creates a sustainable model that can endure the fast-paced evolution of technology, thus saving millions of dollars in research, development, and updates to new systems.

ASTERIA's unique capabilities include the use of unmanned aircraft systems (UAS) and high-resolution optics, as well as long-range facial identification technology, to increase the accuracy of identification from a distance. These capabilities provide safer operating environments for biometrics collectors by isolating them from conflict zones and potential adversaries. These advancements enable more sustainable tactics, techniques, and procedures (TTPs) by removing the need for one-to-one contact to capture biometric identifiers. Whether this technology is placed at a command ground control station or operated via a handheld device, ASTERIA can evaluate and rapidly transition cutting-edge technologies into field-deployable, operational capabilities effectively and efficiently.

In addition to its ease of use and applicability in the field, ASTERIA provides high-throughput with a 98 percent accuracy rate for up to 10 million enrollments through automated, nonstop, contactless multimodal biometrics identification. Matches are made roughly three seconds after the initial collection. Once operational, ASTERIA's features will include live monitoring of biometric collection points, scalable configuration, and user-defined subject categories and alerts, making it an adaptable tool for the warfighter as well as for the FBI, CBP, U.S. Immigration and Customs Enforcement (ICE), the Drug Enforcement Administration (DEA), and many law enforcement entities.

ASTERIA's dynamic functionality provides military and law enforcement agencies a consistent framework from which to quickly develop, evaluate, and deploy biometric identification, threat detection, and video analysis. More important, ASTERIA is able to adhere to environments and applications characterized by changing threats, evolving requirements, and operational needs. This is a stark contrast to systems built to serve specific, well-known requirements. This truly modular, open-system approach is a plug-and-play solution with applications at checkpoints, border crossings, airports, sensitive government locations, forward operating bases, and piers, ensuring accurate identification and enhancing security.

ASTERIA presents a paradigm shift in biometric capture devices. As threats and operating environments evolve and technology advances, this tool will provide military and law enforcement officials a level of assurance that a subject is who he or she claims to be. This ability does not yet exist



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in the field today. This multi-modal, modular open-systems approach is the future of biometrics collection and an enduring capability for the next generation of devices supporting identity operations.

The Evolution of Forensics: Leaving the Lab Behind

Within the forensics mission space, DFBA's partner, DFSC, is leveraging speed and mobility to provide advanced solutions to processing DNA in the field. The Office of the Assistant Secretary of Defense for Research and Engineering (OASD R&E) is supporting the development of a portable rapid DNA screening device that offers U.S. military and law enforcement users the ability to generate a DNA profile outside of a laboratory setting. This profile can then be searched against a database to provide links to profiles on a watchlist. As the technology evolves, it will have the ability to analyze DNA evidence left behind at the crime scene or on the battlefield and can be used to compare DNA profiles to confirm familial relationships.

This second-generation rapid DNA device differentiates itself from those currently available based on its size and speed. The new device will be light enough for single-person transport and operation in the field and will reduce the processing time of DNA samples. The final prototype will integrate and automate the extraction, amplification, separation, and detection processes involved in traditional DNA analysis. DFSC has provided technical guidance on topics ranging from the optimal set of loci to target to appropriate swab types, helping to ensure the end product is maximally useful for end users. These advantages enable field operators the ability to determine a more complete biometric profile on-site.

Legal limitations currently prohibit direct, automated uploading and searching of the FBI's National DNA Index System with profiles generated via rapid DNA instrumentation in the field. As a result, the new technology is slow to deploy; however, U.S. government and industry leaders remain committed to further developing this game-changing, field-deployable technology.

Next-Generation Sequencing (NGS)

Complementing the enhancements afforded by rapid DNA are DFSC's efforts to develop NGS capabilities, which currently remain laboratory-based techniques. Compared to traditional methods, NGS techniques allow scientists access to more information contained within the DNA left behind at crime scenes or on the battlefield, such as externally visible characteristics like hair, eye color, and biogeographical ancestry. This new information, which was previously inaccessible to law enforcement, has the potential to generate intelligence and investigative leads for operators.

The increased resolution of NGS over current DNA fragment length–based analyses provides several advantages. First, current technology requires multiple laboratory workflows and instrument runs to interrogate one sample. With NGS, a sample is analyzed in a single workflow, providing the additional phenotype and ancestry information without the consumption of additional sample material; this capability is of particular importance when the samples are degraded or of low concentration, as is often the case with forensic materials.

The development, evaluation, and eventual transition of high-throughput DNA sequencing–based techniques will enhance a range of human identification and characterization applications, such as externally visible traits, biogeographic ancestry, extended kinship analysis, and one-to-one identification. These advancements in accuracy and in-depth analysis make rapid DNA and NGS key components of future biometric profiling and the positive identification of individuals, including criminals and adversaries.

Throughout its research and development, DFSC will continue to investigate aspects of this enhanced capability to better understand the benefits and limitations of NGS, while focusing on efficient and user-friendly solutions to analyze and report results in the field.

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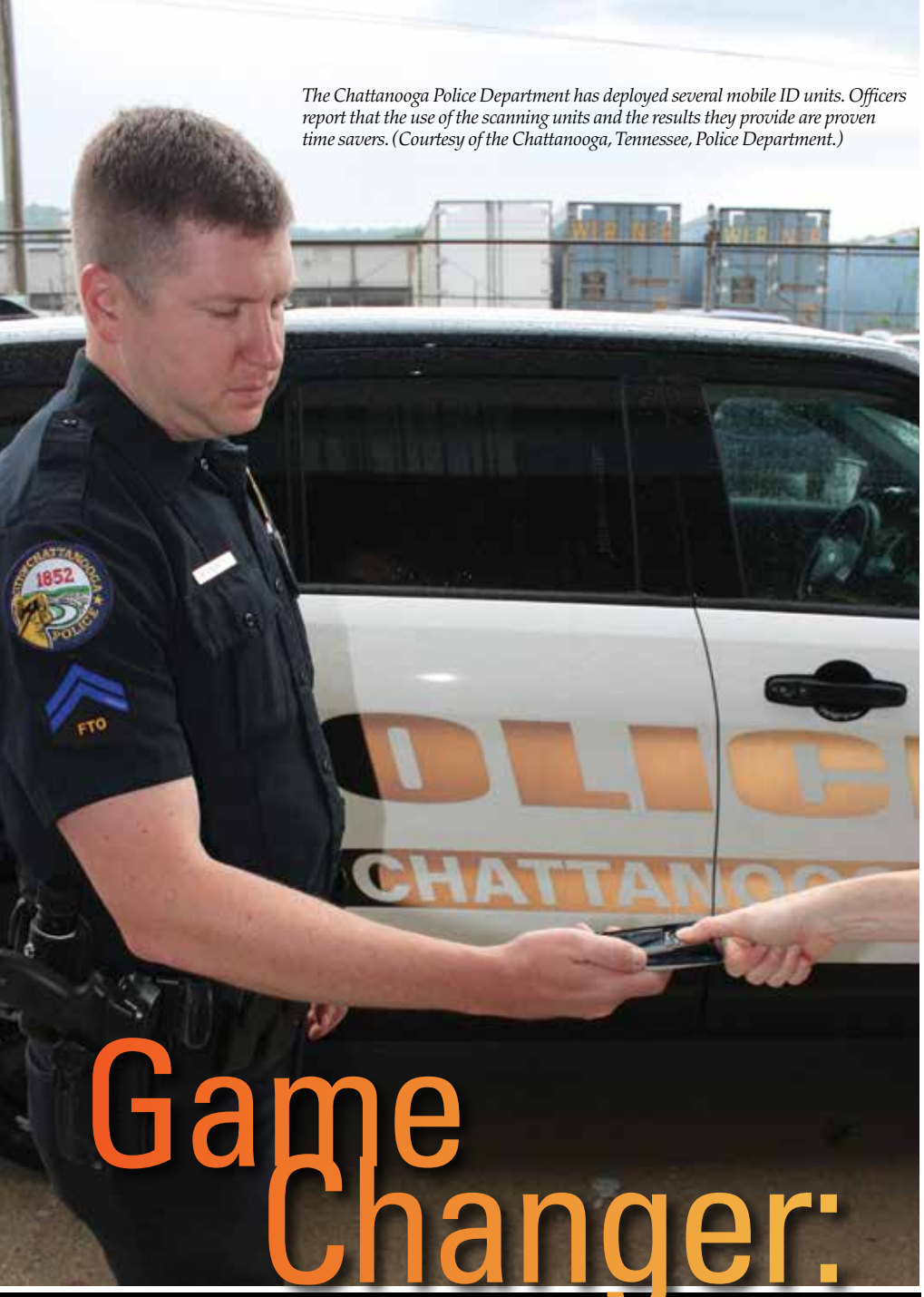


The Chattanooga Police Department has deployed several mobile ID units. Officers report that the use of the scanning units and the results they provide are proven time savers. (Courtesy of the Chattanooga, Tennessee, Police Department.)

Game Changer: The FBI's RISC Mobile ID Query

By Mary Riley Walker, Staff Writer, Criminal Justice Information Services Division, Federal Bureau of Investigation

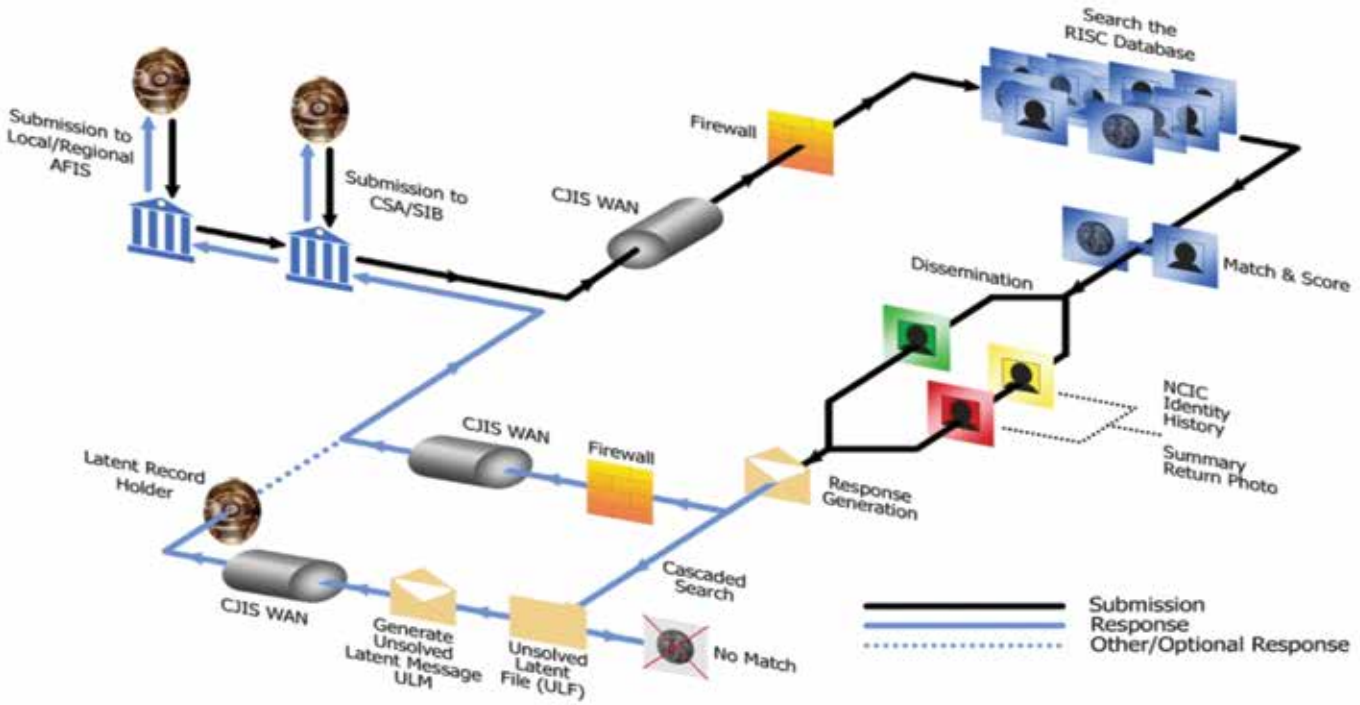
If criminals on the streets often have the best and latest technology to help them commit crimes and conceal identities, shouldn't the officer on the street be equally well equipped to fight these crimes? While cost is often a factor for agencies when considering elite technology for investigation and protection, one of the most useful tools for detection and safety is readily available and free of charge. The FBI's Repository for Individuals of Special Concern (RISC) works with mobile identification (ID) devices to give officers an edge by providing information about subjects on the spot.

How RISC Works

By tapping into a specific subset of the FBI's criminal database, RISC exponentially raises the bar on a mobile ID search. With the addition of RISC, an officer in a possibly precarious situation not only searches a state's criminal database to determine whom the officer is dealing with, but the search also links into a fine-tuned portion of the FBI's national databases. Adding the national perspective to a mobile ID search is a huge efficiency multiplier for officer and public safety.

When an officer on the street takes a mobile ID scan, the print is sent to the state repository for identification. If the state participates in RISC, then a submission to the state repository is simultaneously sent to the FBI's fingerprint repository through the Next Generation Identification (NGI) system and to a refined subset of the FBI's National Crime Information Center (NCIC). With approximately 2.5 million records in this databank, this simultaneous submission multiplies the possibility of a hit on a person of interest who may pose a real threat to the community or to the investigating officer—and the information is available in less than five seconds.

RISC will provide one of three responses to all match searches. The system sends a "red" hit that provides a match to a highly probable candidate. (A red response has a high likelihood that the print is a match, but cannot be called a "positive identification" without the confirmation of a trained fingerprint examiner.) A "yellow" hit indicates a potential candidate match that may be used as an investigative tool or lead for further exploration. (It is possible that a yellow response could occur due to the image quality of the original mobile print submission. The FBI recommends that, at the



This illustration shows the path of a submission. When an officer takes a mobile ID scan, the print is sent to the state repository for identification. If the state participates in RISC, then the submission is simultaneously sent to the FBI's fingerprint repository, which vastly multiplies the chance of a match. (Courtesy of FBI.)

officer's discretion, a second set of prints be sent.) A "green" notification means there is no hit in the RISC database. Literally, in the time it would take an officer to fasten a seat belt, a wanted person could be identified.

RISC search queries include header information identifying the submitting agency and a unique submission number, but they do not include the subject's name or other biographic or event information. As a result, any prints sent in a RISC query are not added to the FBI's identity records and the prints are not retained.

RISC is designed to search special areas of significance that yield records of persons of heightened interest with FBI numbers that are entered in NCIC. These areas include the following:

- **Wanted Persons**—These records are of persons with active warrants, including immigration violator records. The impact of quickly knowing that a subject an officer has engaged is wanted is clear, but a traditional name search on a deceitful subject would not provide the same results.
- **Sexual Offender Registry** —This registry contains records of convicted sex offenders or persons required to register under a jurisdiction's sex offender registry program.
- **Known or Suspected Terrorists**—These records are of identified or suspected terrorists entered into the file by the FBI's Terrorist Screening Center.
- **Other Persons of Special Interest**—This category is an assortment of records that are not in the other three files, but they are of individuals of amplified interest due to national security concerns.

Increased Search Effectiveness

How far can a felon get on a tank of gas? Persons of high interest don't stop at the borders of a state, so mobile ID search results shouldn't either. Adding RISC to an officer's toolkit widens the net, which positively impacts the safety of officers and communities.

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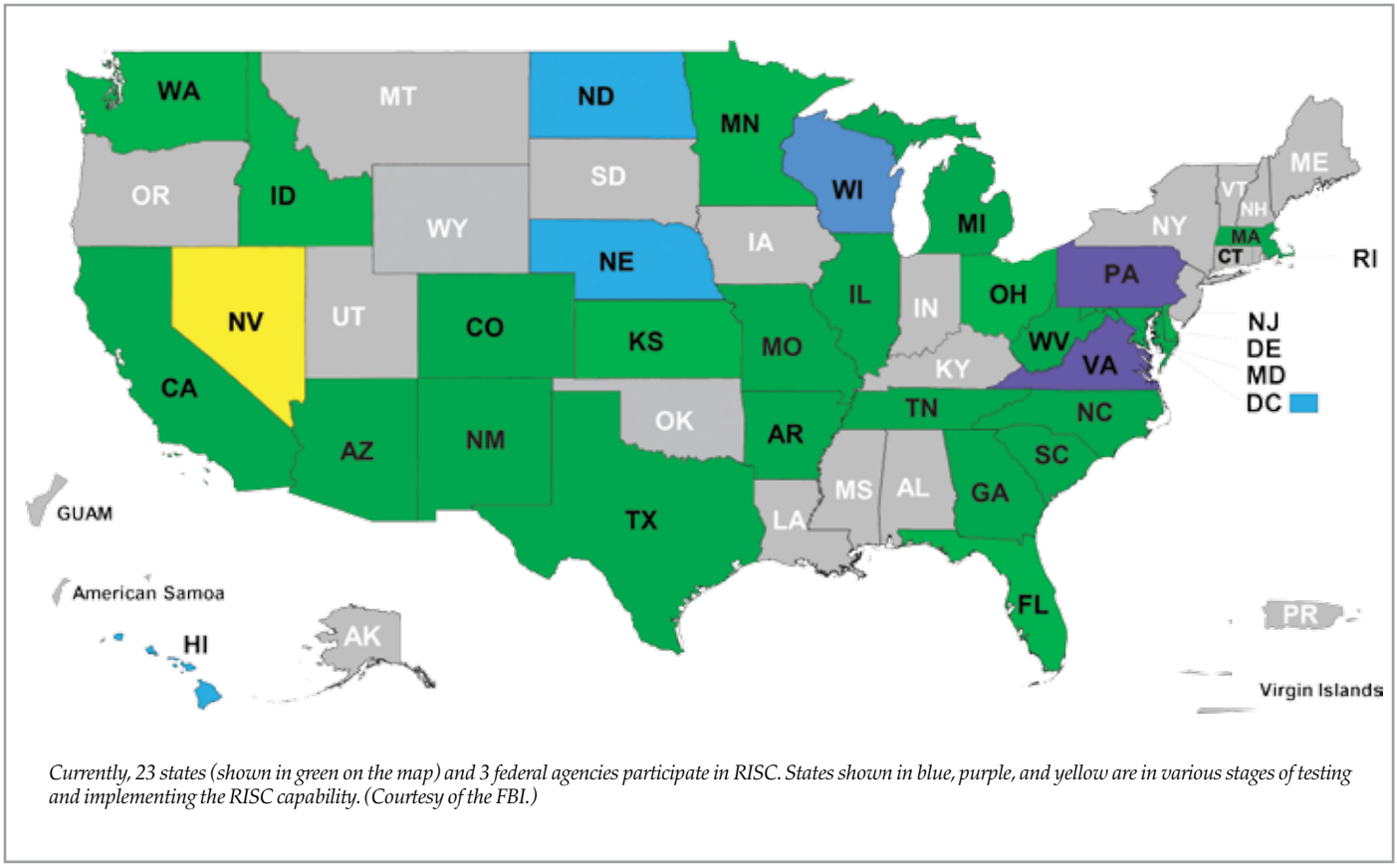

Currently, 23 states (shown in green on the map) and 3 federal agencies participate in RISC. States shown in blue, purple, and yellow are in various stages of testing and implementing the RISC capability. (Courtesy of the FBI.)

A fingerprint search that doesn't include national data is going only part of the way. In 2015, RISC provided officers on the streets approximately 29,000 "red" hits of highly probable candidates that the officers' searches would have otherwise missed, which translates to a large number of subjects who could have just walked away from a police encounter instead of being detained or arrested.

In addition to searching the four specific areas of RISC, a query to the database also searches the FBI's Unsolved Latent File, and, if a hit is produced there, it is forwarded to the agency that originally submitted the latent print. This additional facet of RISC multiplies the efficiency of the search—a RISC query from one agency may eventually help solve a case at another agency.

RISC on the Street

The Chattanooga, Tennessee, Police Department (CPD) is an agency with more than 450 sworn officers serving a city of more than 170,000 residents. With the workload they carry, CPD officers need every advantage to get the job done and to keep their citizens safe. For that reason, CPD participates in RISC. With a need to augment situational awareness and increase efficiency in the field, the CPD has deployed several mobile ID devices. Officers report that the use of the scanning units and the results they provide are proven time savers. One officer called the capability to scan, access the state and FBI databases, and identify a subject on the spot a way to streamline the whole process, cut out the guesswork, and "know who you are dealing with right on the scene."[1] Officers either catch the bad guy in that moment or are able to release a subject and quickly move on to the next incident. The following incident is one example of the RISC's advantage.

On October 15, 2015, CPD officers responded to a call of unknown trouble. Earlier, there had been a threat of a shooting at a residence and a call for backup. Notice of subjects fleeing the scene was broadcast. One subject was apprehended just prior to the arrival of an officer equipped with a mobile ID device on the scene. The subject, as is often the case in the field, had no identification on his person. He was uncooperative and appeared to be responding deceitfully to questioning. As routine procedure, the officers had already run the name and date of birth the subject gave through the NCIC with no result. Prints were then taken on the spot by the mobile ID officer and transmitted to the Tennessee state repository where they were sent on to the FBI's RISC to query the large national database. A red hit was transmitted in seconds that informed the officers that the subject had an active aggravated domestic assault warrant. The subject was arrested and booked. During a jailhouse search he was also found to have drugs hidden in his body. Without RISC's information, the suspect may have been released or managed to evade the charges for drug possession.

Chattanooga Police Chief Fred Fletcher, a hands-on manager with more than 20 years of law enforcement experience, encapsulates his department's experience with RISC:

> *Technology, like the RISC Program, is vital to ensuring our department is utilizing all available 21st century policing tactics. RISC not only allows us to ID unknown violent offenders, it also identifies possible terrorists and sex offenders on scene. This tool keeps our officers safe and the public safe.*[2]

Law Enforcement Participation

Currently, 23 states and 3 U.S. federal agencies participate in RISC. Agencies that are within a state connected to the RISC, but not participating, can tap into the power of RISC for the price of purchasing the handheld scanning device (some models begin at around $2,000 for a unit), some basic training, and possibly an app for the officers' mobile phones. Agencies considering adding RISC to their resources should be sure to check with the law enforcement entity that oversees the state's automated fingerprint identification system (AFIS) when choosing a scanning device in order to make sure it will work with that particular state's network. In addition, agencies must use products certified by the FBI's Criminal Justice Information Services (CJIS) Division

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and found on the FBI Certified Products List at www.fbibiospecs.cjis.gov/certifications. The devices listed have been tested by an independent testing agency to determine that they capture and transmit fingerprint images that meet the NGI image quality specifications for mobile ID.

Agencies in states not participating in RISC who are interested in having this capability should contact their state's law enforcement executives, particularly those involved in mobile ID initiatives, and ask if they have considered taking the step to use this valuable law enforcement resource. Since all states have connectivity with the FBI's CJIS Division's wide area network, with certain adjustments to the state's AFIS, a state can become a participant and begin reaping the benefits of the expanded RISC search. ❖

Find Out More About RISC

To learn more about participating in RISC, contact the RISC Program Office at RISC@ic.fbi.gov. Also, find more information by visiting the RISC Special Interest Group on the Law Enforcement Enterprise Portal (LEEP) at www.cjis.gov.

Notes:

[1]Rodney Proffitt (field training officer, Chattanooga Police Department), telephone interview by Mary Riley Walker, May 2, 2016.

[2]Fred Fletcher (police chief, Chattanooga), quote provided by Kyle Miller (communications coordinator, Office of the Chief of Police, Chattanooga Police Department), email, May 3, 2016.

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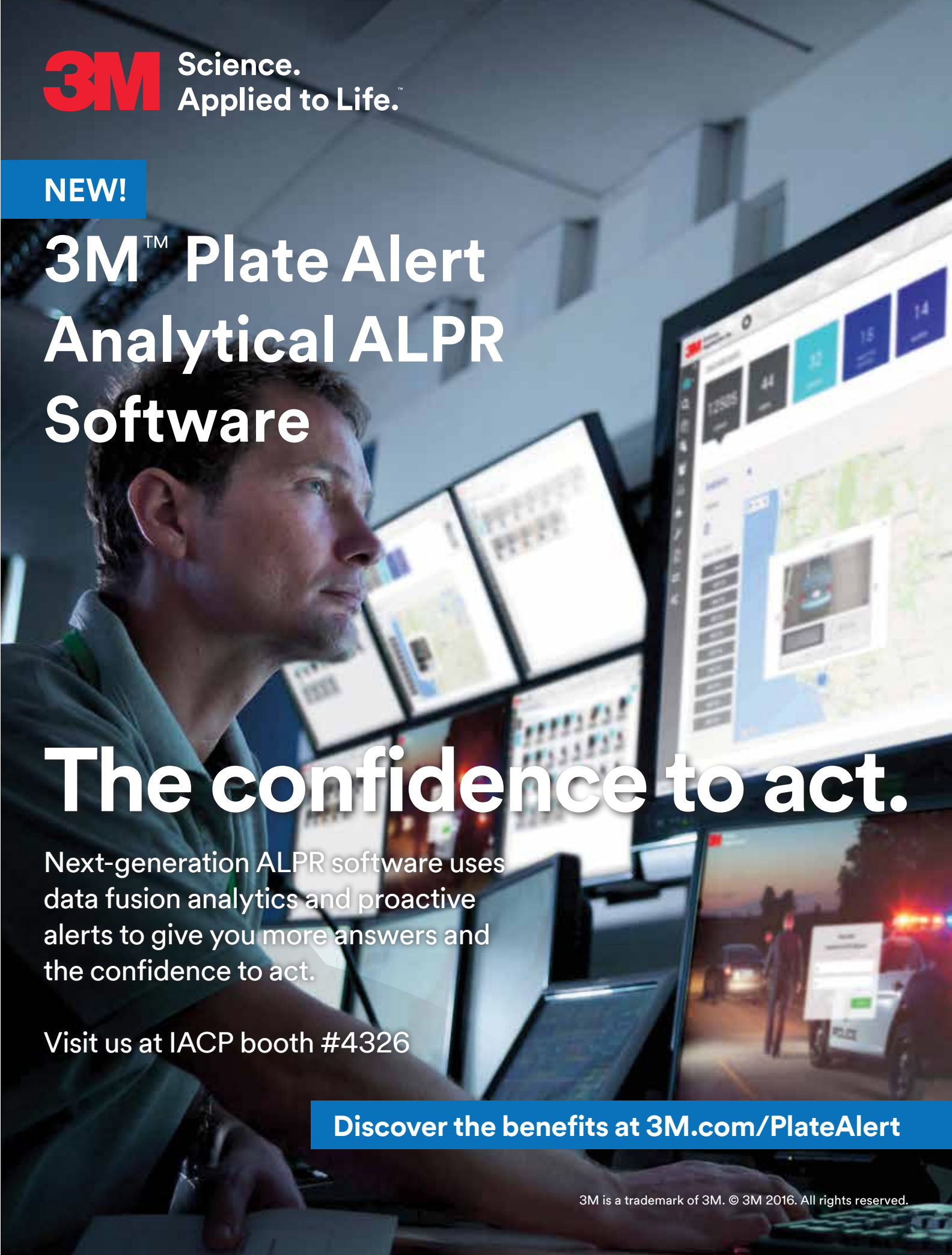
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PRODUCT FEATURE:

NEW SOFTWARE PROGRAMS HELP POLICE BETTER TRACK USE OF FORCE

By Scott Harris, Freelance Writer

Historically, many police departments and government entities have not kept detailed use-of-force statistics, and, currently, the most detailed databases on incidents like police shooting fatalities are maintained by news organizations like *The Washington Post*.[1] The White House has invited U.S. law enforcement agencies to voluntarily participate in more robust data collection and reporting of use of force, but, as of April 2016, only 53 jurisdictions had signed up to participate in these efforts.[2]

For various reasons, compiling these statistics—much less using the numbers to inform training or other improvement measures—has proven challenging to many in the law enforcement community. Many agencies don't track the use of force, and those that do often do so in uneven or inconsistent ways.

Thanks to some new software programs, however, solving these challenges may now be much easier than police departments realize.

Removing Guesswork Concerning Use of Force

The Police Force Analysis System or P-FAS, is a new software program that collects use-of-force data, analyzes the numbers based on a wide range of factors, and assigns easy-to-interpret scores that characterize the extent to which each use of force was legally justifiable.

"Some systems look only at the frequency of force, but recent studies show a high false positive rate with that because there's lot of reasons for use of force," said Bob Scales, a partner with Sanford, Olson and Scales, a police strategy consulting firm in Bainbridge Island, Washington. "Instead of doing that, we say 'let's look at the context'… The heart of [P-FAS] is using a score based on legal standards. You make determinations on whether there was justified or excessive use of force based on what the officer was facing at the time."[3]

The resulting information can do much more than increase transparency. The software, developed by retired law enforcement professionals, informs and educates leaders—both in police departments and beyond—in ways that can shape everything from budgets to policy.

"It enables data-driven decision-making and evidence-based policies," Scales said. "This allows you to do all of this. They can say 'hey, we want to look at our policies'… You're able to answer questions that people have about the use of force; you know what's going on in your department. It helps with budget deliberations and risk management with officers."[4]

P-FAS uses 150 different variables to comb through officer reports and witness statements to identify use-of-force incidents. The incidents can then by viewed individually and sorted based on a variety of factors, including level of force, severity of the crime involved, threat level to officers or others, maximum suspect resistance level, and various demographic attributes. All the information can be easily manipulated in a series of dashboard displays and organized to illustrate a variety of trends and patterns. "You can sort each officer or case out based on circumstances to find high-risk or low-risk cases, officers involved, and case numbers," Scales said.[5]

Launched in 2015, P-FAS is still new. Nonetheless, 20 agencies are already using the platform, with a total of 10,000 reports serving as the general baseline against which users benchmark their own performance. For users, P-FAS is already paying dividends, making for a smarter police force.

"We had one agency where the officer had higher use-of-force numbers than others, but all the incidents seemed justified [and] in the proper context," Scales recalled. "The chief talked to this officer, who said 'I can tell you exactly why this is happening; it's because I'm the only one reporting on every use of force.' So they retrained on reporting requirements around use of force, and all officers are now reporting properly."[6]

Better Tools Now, Better Data Later

Another new software tool can help officers collect better use-of-force data in the field and in real time. The SmartForce agency management system, a software application that lets officers communicate inside and outside a department and digitally document various activities or processes, now includes what company leaders call a High Liability Management module, which allows officers to more easily document use-of-force incidents.

"The High Liability Management module helps reduce the risks and exposures of police departments in use-of-force incidents," wrote Mariano Delle Donne, CEO of Adventos, the company that developed SmartForce, in a blog post. "The module's Response to Resistance application sequentially tracks and reports on uses of force. The information is searchable and allows for real-time reporting for command staff or open-records requests. Body-worn camera footage can be included in reports. All the information is accessible on mobile devices, too."[7]

SmartForce provides a mobile platform that helps officers better organize information and share it among one another. According to Adventos data, one client, the City of Port St. Lucie Police Department in Florida, achieved at least a 20 percent decrease in crime and a 40 percent increase in clearance rates, thanks in part to its adoption of SmartForce.

"The SmartForce Agency Management System makes many law enforcement administrative jobs easier by converting paper process to electronic processes in regard to use-of-force reporting, complaints and commendations reporting, field training officer programs, and policy acknowledgment, to mention a few," said Adventos Vice President of Sales and Marketing Brian McGrews.[8]

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Keeping Track of Training

Of course, use of force is just one area where training software and programs are available to law enforcement. In fact, with all the options, tracking which officers have completed which training programs can be complicated.

LEA Data Technologies, an Oregon-based software company working solely in the law enforcement arena, has various solutions for different police needs. One of these solutions is the Training Database, an automated system for scheduling and monitoring any kind of training. The software can also help departments stay on top of certification maintenance, including when a given certification is set to expire and what is required for renewal.

According to Dave Broomfield, a retired detective and the director of development for LEA Data Technologies, the company was founded by law enforcement professionals for law enforcement professionals. Given that background, LEA understands constrained budgets, Broomfield said. That's why the company keeps software prices manageable, does not charge for software re-licensing, and charges only $100 to $200 for annual upgrades, which are optional.

"We took areas and special units that we knew needed unique software to help them manage their unit with more detailed reporting and tracking," said Broomfield. "I have one captain from the New Orleans Police Training Academy that has told us that our Training Database helps make him look good to his bosses."[9] ❖

Notes:

[1]"Fatal Force," *The Washington Post*, https://www.washingtonpost.com/graphics/national/police-shootings-2016 (accessed July 12, 2016).

[2]The White House, "Fact Sheet: White House Police Data Initiative Highlights New Commitments," press release, April 21, 2016, https://www.whitehouse.gov/the-press-office/2016/04/22/fact-sheet-white-house-police-data-initiative-highlights-new-commitments (accessed July 12, 2016).

[3]Bob Scales (partner, Sanford, Olson and Scales), telephone interview, July 11, 2016.

[4]Ibid.

[5]Ibid.

[6]Ibid.

[7]Mariano Delle Dome, "A New Way of Managing Response to Resistance," Adventos (blog), March 17, 2016, http://www.adventos.com/blog/adventos/a-new-way-of-managing-response-to-resistance, (accessed July 17, 2016).

[8]Brian McGrew (vice president of sales and marketing, Adventos), email interview, July 12, 2016.

[9]Dave Broomfield (director of development, LEA Technologies), email interview, July 11, 2016.

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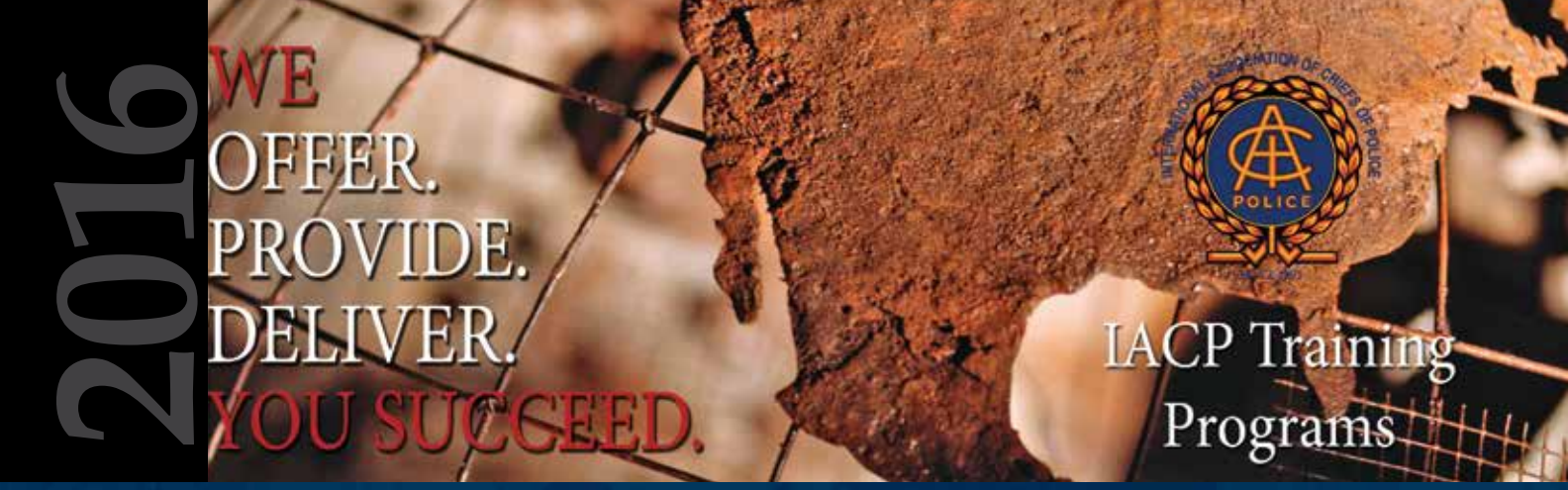

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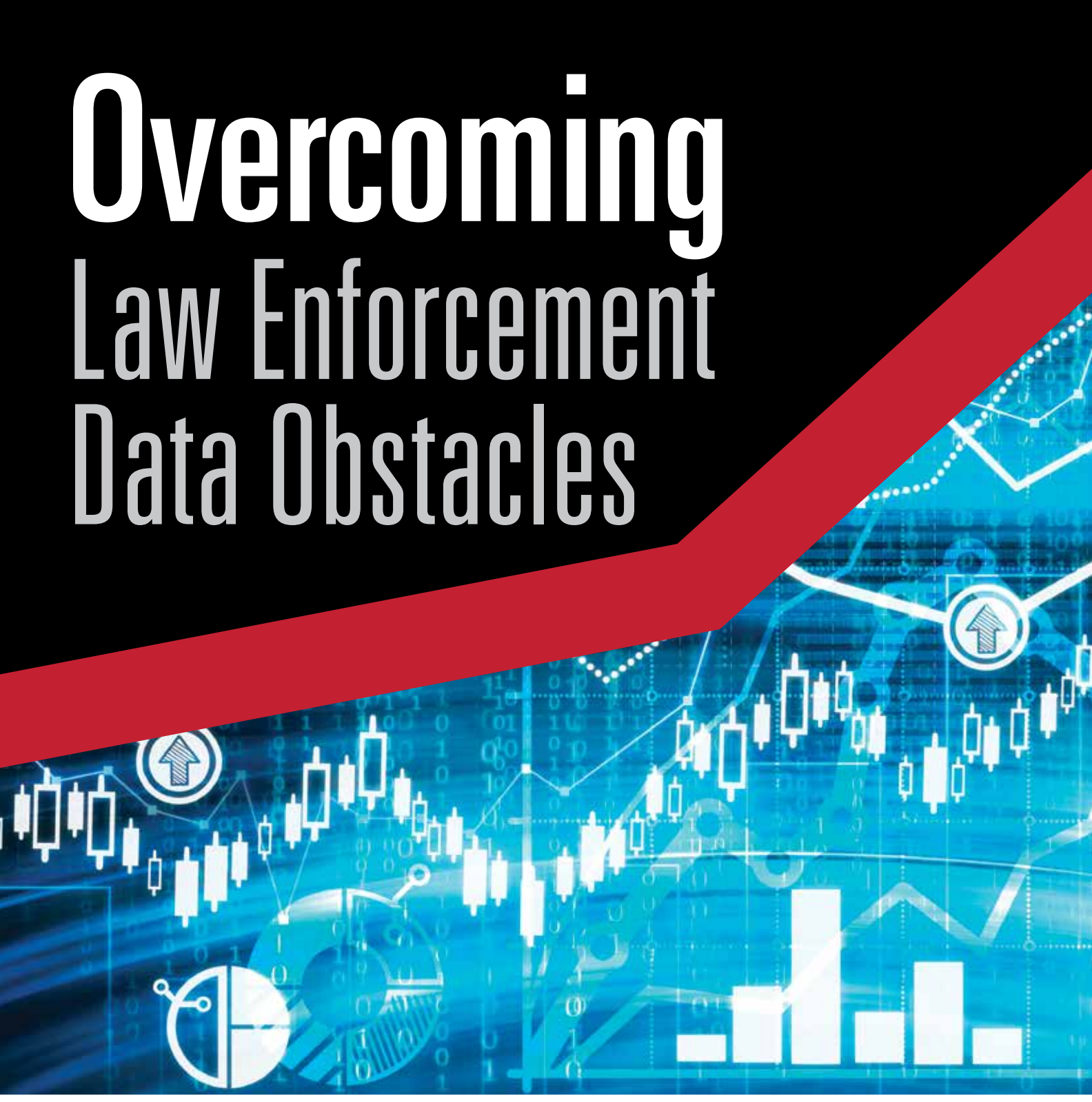
Overcoming Law Enforcement Data Obstacles



By Andrew Dasher, PhD, and Robert Haynes, MPA, University of Texas Police Department – Houston

RMS (records management system) and CAD (computer-aided dispatch) are acronyms that every police officer has probably heard at least once in his or her career. Similarly, predictive policing, intelligence-led policing, and problem-oriented policing are concepts that law enforcement agencies around the world use on a daily basis to engage their citizens and combat crime. The acronyms and concepts may seem like standalone cogs in the policing machine at first glance, but they are forever linked by a myriad of data pieces that must be obtained, integrated, and acted upon. The problem lies in getting the pieces to interconnect with and communicate accurate information to other technology items.

Data, in and of themselves, are not bad. Police departments have always collected data in some fashion. Data collection started with pen and paper, evolved into communication over the telephone or radio, and finally moved into varying digital iterations. The ever-growing need for more and better

shared data has consumed all departments, large and small. The drive to implement emerging technologies into police departments is in full force. Citizens want to be able to view crime statistics from their local departments' webpages, submit a police report over the Internet, and download digital copies of their accident reports, all from the comfort of their living rooms. The age of carbon copy or handwritten police reports is a distant memory (or unheard of) for most law enforcement personnel.

The way that a law enforcement agency deals with data can either be a headache or serve as a force multiplier to increase efficiency and citizen interaction. For most police administrators, it is probably a little of both. The challenge is that data can become overwhelming—and can also be a little intimidating—but correct data are the most important foundational cornerstones that must be laid before any new technology can be properly utilized. A carefully considered data philosophy and proper planning can help an agency minimize data obstacles.

Departmental Data Philosophy

Once new police chiefs accept their congratulations and settle in, they get a chance to look around the agency they now lead. Most of the time, they will notice that a firm foundation has already been established. RMS system, check. CAD system, check. Laptop computers in the patrol vehicles, check. What these leaders quickly realize is that they have a plethora of data at their fingertips. A 2001 study showed that law enforcement agencies are becoming more reliant on digital data as computer technology becomes more readily available.[1] This trend does not look to be slowing down anytime soon with advances in portability, such as the creation of the smartphone, and overall decreases in technology prices. The infrastructure to receive digital data is clearly in place in many agencies, but the underlying data may not be ready to feed into that infrastructure. Police departments have to have an idea of the end product in order to align the data properly.

End product design depends largely on understanding the consumer. In the United States alone, millennials now number 83 million persons and make up a quarter of the total population.[2] The youngest individuals in this age group are around 17 years old, while the oldest are around 34, depending on the definition of "millennial" used. This age group is interacting with data every day. In fact, one of the specific attributes of the group is that the members grew up with the Internet and social media easily available. In other words, they expect all data—including law enforcement–related data—to be delivered in an instant, convenient, electronic format. Think back to the days when citizens had to drive downtown; park their car; walk inside police headquarters; find the Records section; wait in line; and, finally, get a copy of their incident report. If an agency makes a millennial go through this process today, he or she will be less than pleased.

Citizens are not the only consumer group to consider. Police administrators must also design end products geared toward employees. As time goes by, increasing numbers of millennials will join law enforcement agencies, and they will expect to engage emerging technologies in a way that they are accustomed to. Terminal access and handwriting may not be their first choice for data collection methods. An administrator's philosophy on data collection and end product technology design has a hefty influence on operations.

The philosophies surrounding data use can help mitigate some of the trouble with data. Administrators have to understand that the policies guiding overall data use and, specifically, the exact way in which data are actually utilized have a direct effect on desired outcomes.[3] Data philosophies help shape perspective. Think back to the scenario involving millennials and police reports. One possible reaction is that of perceived opportunity. Perhaps the hypothetical administrator of this law enforcement agency could streamline the process and deliver the data in a different format that would save time and effort. However, another reaction might be a feeling that the police administrator should change nothing and millennials should just accept the process as it stands.

There is nothing wrong with either of those stances. Police departments come in different shapes and sizes with different budgets and communities. Each police administrator must have the discretion to push the agency in a direction that best suits the organization's unique set of requirements. However, caution must be urged when dealing with leadership discretion. Historically, police departments have proven better at altering the outward appearance of change rather than engaging in meaningful internal reform.[4] This thought process is applicable to data. A data-sharing philosophy that centers on placating the masses will not do much to enhance departmental performance. An example of this may be an agency that puts "community policing" or "evidenced-based policing" on all their community handouts, yet does not use data in a meaningful way to support those strategies.

Police administrator philosophies guide every aspect of a law enforcement agency. Take the popular "open door" philosophy, for example. Some chiefs believe that officers should go through the chain-of-command in every instance and that no line-level officer should walk through the chief's doors uninvited. Some chiefs believe that everyone in the department should be able to meet with whomever without fear. Those very different philosophies will dramatically alter the mechanics and operations of a law enforcement agency. In much the same way, a chief's philosophy on data use will have a reverberating effect within a department. Aligning a data philosophy with desired outcomes and end users is a necessity.

There are three steps to aligning a data philosophy with desired results. The first step in the process is to understand what

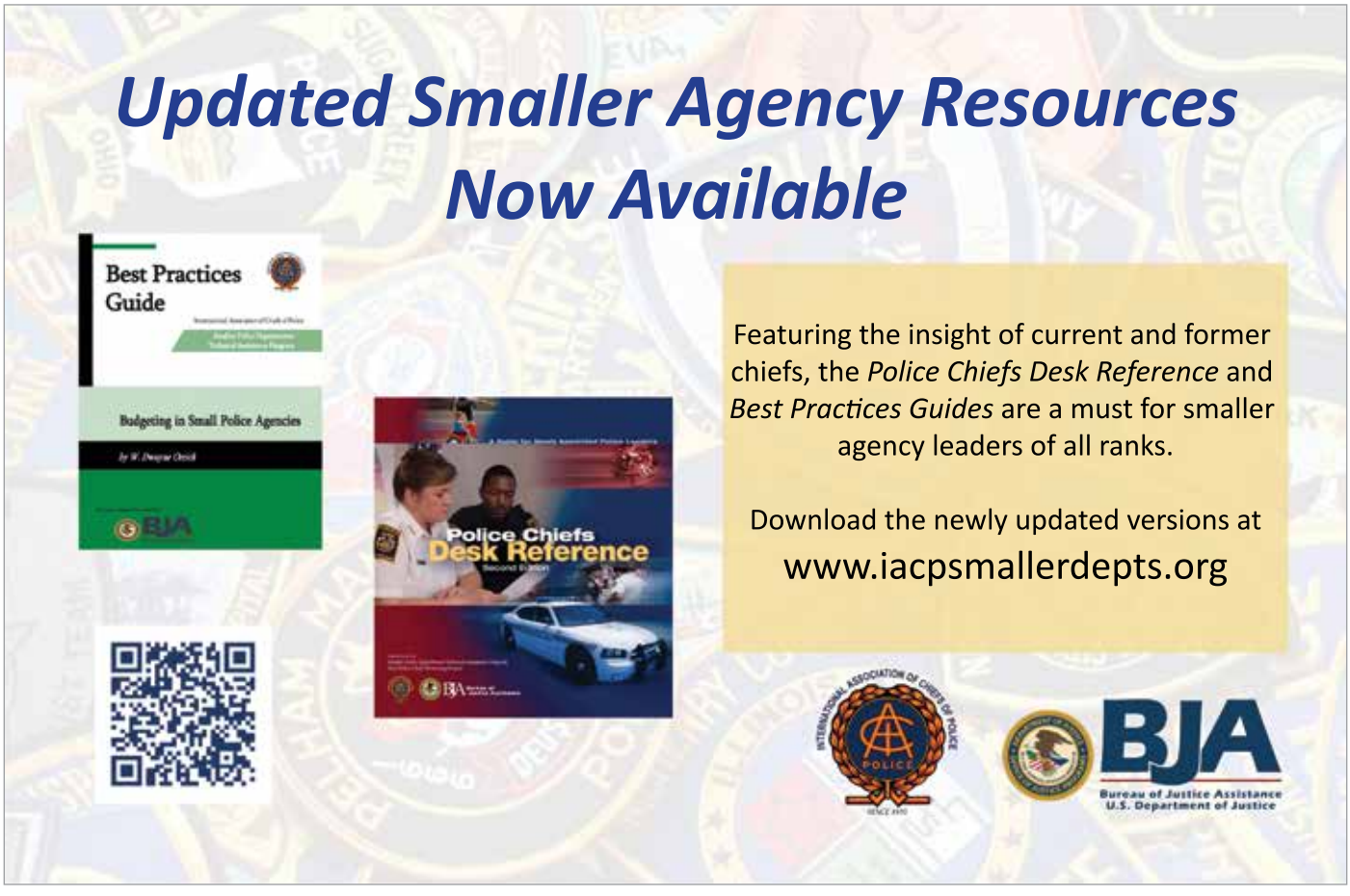
the underlying policing strategy is going to be. Will the strategy involve a focus on strict, reactionary principles where police officers primarily respond to calls? In this case, a strong RMS and CAD system may be the focus of data needs. If the strategy consists of community policing principles, such as active engagement and information sharing, then RMS and CAD data are the tip of the proverbial data iceberg.

Simply looking at high crime rates in a geographical area (gathered from mapped RMS data) is not enough under the community policing model. Rather, properly identifying the underlying contributors to the crimes is key to stopping them.[5] Those underlying contributors are separate data points that must be collected and analyzed. This expanded data set could include the addresses of sex offenders, recently released parolees, or liquor stores. Perhaps the expanded data set would include an enhanced intelligence or information repository component. Items such as intelligence databases can be an intimidating thought for some administrators, but these types of data could prove irreplaceable when addressing the needs of the community.

The second step in the alignment process is to understand the organization's culture. Some police administrators will have no problem in integrating data throughout the daily police workflows. In contrast, some police administrators will experience quite a bit of pushback if they were to fully integrate data, especially data that fall under a new collection model or relate to information that was not previously disseminated. The psychological contract aspect of police administrator and police employee relationships must be maintained in order to develop trust and understanding.[6] Employees must trust that their leaders have their best interests at heart. Within the context of changing an organizational culture's view on data gathering and use, the trust between leadership and line-level officers requires a strong foundation. A large part of that strength comes from the communication between the different organizational levels.

Knowing an end point or goal is important, but understanding how to get there is just as important, if not more so. Aligning a data philosophy with outcomes points the way, serving as a compass in the process, and proper planning is the map to those expectations.

The third step in the alignment process is the prioritization of communication. From a leadership perspective, the need to increase data collection and analysis might seem obvious as a department modernizes and meets new mandates. From the perspective of line-level officers, though, the changes can look more akin to increased workload and increased responsibilities with little payoff. An organization that ignores communication feedback loops while focusing primarily on goals is more prone to unintended consequences.[7] These unintended consequences could come in many forms,



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such as decreased trust, decreased efficiency, and disgruntled employees. The transition from data philosophy to intended results might not be an easy one, but it can be made easier if the vision is communicated in a meaningful way to everyone involved.

Following these three steps will allow a law enforcement organization to align its data philosophy with its desired outcomes. Before proceeding down the path of achieving those outcomes, administrators must also properly plan for their data journey. The proper use of data is not a work process that can just occur naturally overnight. There are items to be considered and goals that must be established. Planning is paramount.

Planning

Knowing an end point or goal is important, but understanding how to get there is just as important, if not more so. Aligning a data philosophy with outcomes points the way, serving as a compass in the process, and proper planning is the map to those expectations. Planning is important in every aspect of an organization, but it is even more important when it comes to data integration and use. One trouble with data collection and use is that it is not an instantaneous process, but rather an arduous journey that takes time. To one day decide that data need to be used in a meaningful way and then expect to have a fully functioning system up and running the next day is short-sighted. Fortunately, or unfortunately, there are a myriad of hardware and software vendors out there that recognize that many law enforcement agencies struggle with data planning and would be happy to assist them on their data journey.

The number of law enforcement agencies that have been sold on a very expensive piece of software, only to find that it does not spin hay into gold, are probably too numerous to count. This is not entirely the fault of the software vendors—many times the software does exactly what it was designed to do, but departments have inadequately planned for how the software will be integrated going forward or how it will be expanded into future operations. Strategic planning can help facilitate some of the discussions around data integration. While strategic planning is not a commonplace process in some law enforcement agencies, there have been a number of successes in agencies that integrate as many internal personnel as possible during the early stages of planning.[8] This allows for good communication and a sense of buy-in and minimizes unintended consequences.

In addition to strategic planning, there are other ways to properly plan for data integration. One way to increase the potential for success is to keep an open mind on what the data can do for the organization. It is very easy for administrators to focus on solving only one problem. For instance, simply getting a count on the number of traffic stops that occur in a month can be accomplished fairly easily with a two-column form. However, leaders need to look beyond that simplistic data picture. What is the goal of a traffic stop? Is it to deter crime? If so, then maybe the traffic stops need to be plotted geographically so that they can be assessed for proximity to crime hotspots. This is an over-simplified example, but imagine if a contractor was hired to create that initial two-column form because all that was initially needed was a count. A simple count can be great, but planning would have allowed the data to better align with broader goals and aid in explaining the multifaceted value of a traffic stop more vividly, providing a value metric instead of just a simple measurement. The value measure can then be used to show the benefit the department provides rather than just the workload it performs.

Using an outside vendor may be the simplest, quickest way to set up a data system. This process can lead to other troubles though. When using a vendor, it is very important to be mindful of siloed data. In many cases, outside vendors set up proprietary databases and algorithms that may or may not interface with other data systems easily. In some cases, pre-existing databases or future databases

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can be integrated, but the integrations may have a high cost, in the form of manpower and fees, attached to them. For some police departments, cost is not a problem, but for many departments, it is an important issue. When databases are not integrated, the phenomenon of siloed data takes place. The term siloed data refers to a group of standalone data pieces that have minimal integration and line-of-sight. This situation is problematic; it is quite possible that there are pertinent data across multiple databases that could add to the totality of circumstances in any given case. There is no greater example of this than that of 9/11. Siloed data and the lack of integration and communication had a negative impact on the possibility of preventing the incident.[9] Having sight of all the puzzle pieces allows for a better understanding of the complete picture. For this reason, siloed data should be avoided through proper planning.

One way to overcome siloed data is to build an in-house solution. There are some very innovative and intuitive RMS out there that were built entirely from within the ranks of in-house staff. The Lincoln, Nebraska, Police Department is a great example of this. Their RMS was built by a team of police officers who were tasked with creating a solution that best fitted the needs of their department. Twenty years later, a robust and fully integrated RMS is proof that in-house solutions can work, as evidenced by the attention it has garnered from outside entities.[10]

An in-house solution has obvious benefits. The system can be modified by an internal employee that is already on payroll and does not require a "nominal fee" for modifications by outside parties. The system can be upgraded as new data components enter the workflow and can expand and contract with workload variabilities. Finally, it can be tailored to the needs of a specific organization. Off-the-shelf RMS solutions try to be "one-size-fits-all" software, but they cannot be everything to everyone. It may seem like a headache to hire and retain a gifted individual to build and run the agency's data systems, such as an RMS, but doing so can pay great dividends down the road. In the end, organization leaders need to be planning for the future, not just the present.

Conclusion

Data collection and analysis can seem intimidating to some people, but these decision-enhancing techniques are merely tools that can be used to great effect under the right set of circumstances. The first part of properly leveraging data is to align the department's data philosophy with expected outcomes. This is accomplished by understanding the foundational policing strategy, understanding the departmental culture, and prioritizing communication. After setting the direction of where a department wants to go, the next step is to plan out how to get there. Proper planning involves such aspects as strategic planning techniques, but also can be aided by keeping an open mind as to what the data can provide, avoiding siloed data solutions, and exploring the possibilities of in-house solutions. In the end, data use should not be viewed as an obstacle, but rather as an opportunity for the enhancement of overall public safety. ❖

Dr. **Andrew "Drew" Dasher** currently works for the University of Texas Police Department–Houston at the MD Anderson Cancer Center as a metrics analyst. Previously, Dr. Dasher was a police officer for the DeKalb County, Georgia, Police Department and was the Crime Analysis and Intelligence Unit manager at the Lincoln, Nebraska, Police Department.

Robert Haynes is currently a metrics analyst in Risk Strategy & Operational Excellence at the University of Texas Police Department–Houston. Robert has a master's degree in public affairs and a bachelor's degree in criminology. With prior experience at the City of Austin, Texas, Police Department and University of Texas Police Department–Dallas, Robert is well-versed in police technology and analytical skills.

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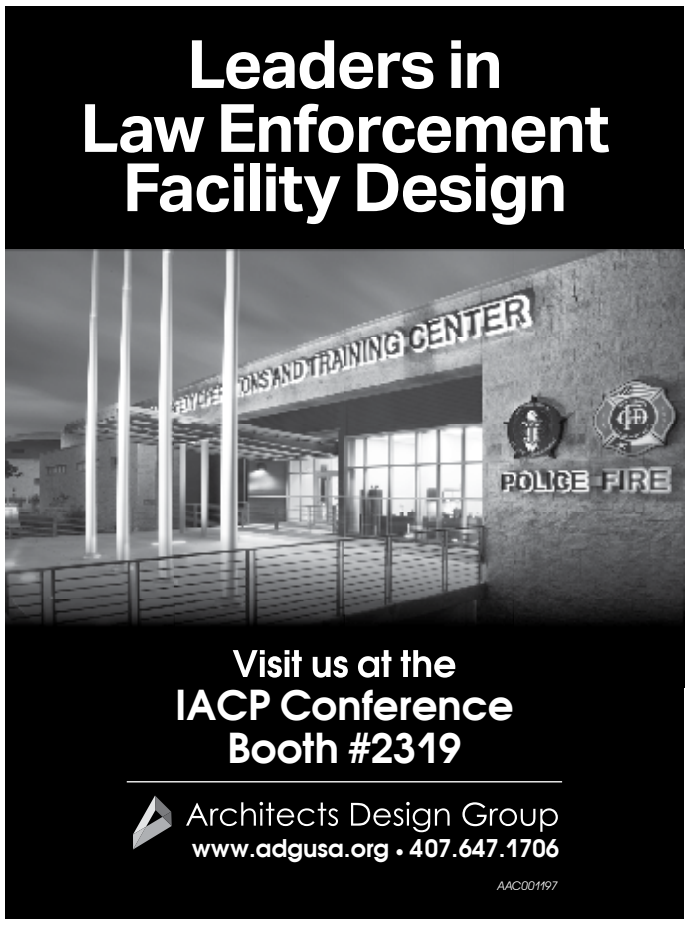

The Three Keys to Managing Digital Evidence:

By Ed Davis, Commissioner (Ret.), Boston, Massachusetts, Police Department, CEO, Edward Davis, LLC

More than 5,700 runners were still out on the course when two explosions rocked the finish line of the 2013 Boston Marathon. Police officers, emergency medical technicians (EMTs), volunteers, and spectators rushed to help those injured by the explosions. So began an investigation that wouldn't end until 100 hours later, when the final suspect was pulled from a boat in a backyard in Watertown, Massachusetts.

What happened during those 100 hours between the bombing and the capture of Dzhokhar Tsarnaev illustrates the degree to which digital evidence is now critical to police investigations.

In cases such as this, the wealth of digital information available to investigators can break an investigation wide open; yet, it also poses new challenges for many police departments where gathering, analyzing, and sharing information remains difficult.

The case of the Boston Marathon bombing, in particular, shows the need for new technology to tie together more information. In the end, authorities' ability to collect, analyze, and share digital evidence is what will help put the bad guys behind bars.

Collecting the Many Sources of Digital Evidence

The Boston bombing crime scene was complex and far-reaching, stretching more than 20 square blocks. Nonetheless, within minutes, authorities assembled a team of local and federal officers to go store-by-store along the crime scene to collect video evidence.

In an event of that magnitude, nothing happens in the field without someone documenting it. Especially in the case of a marathon finish line—spectators, race photographers, and reporters are constantly snapping pictures and shooting videos. For someone to travel into and out of the area without being videotaped or photographed bordered on impossible.

Crowdsourcing potential evidence was both a blessing and a curse in the Boston Marathon case. In the first 24 hours, the public emailed 13,500 submissions of photos and videos taken during the race. The sheer volume initially crashed the Federal Bureau of Investigation's (FBI's) email server. But, ultimately, this crowdsourced information, coupled with CCTV video, led authorities to the Tsarnaev brothers who were responsible for the attack.[1]

The photos and videos allowed authorities to retrace the perpetrators' actions and whereabouts. With the assistance of the FBI and hundreds of detectives from local, state, and federal authorities working around the clock, the Boston Police Department was able to collect and process an enormous volume of evidence and bring closure to the investigation. Of course this story is the exception, not the rule, in day-to-day police work.

A Better Way to Collect Information for Investigations

While digital evidence can be key to advancing a case, few police departments have the budget or time for the often manual work of collecting evidence from the many disconnected systems that generate it.

For example, an investigator might need to fill out and submit paperwork to a 9-1-1

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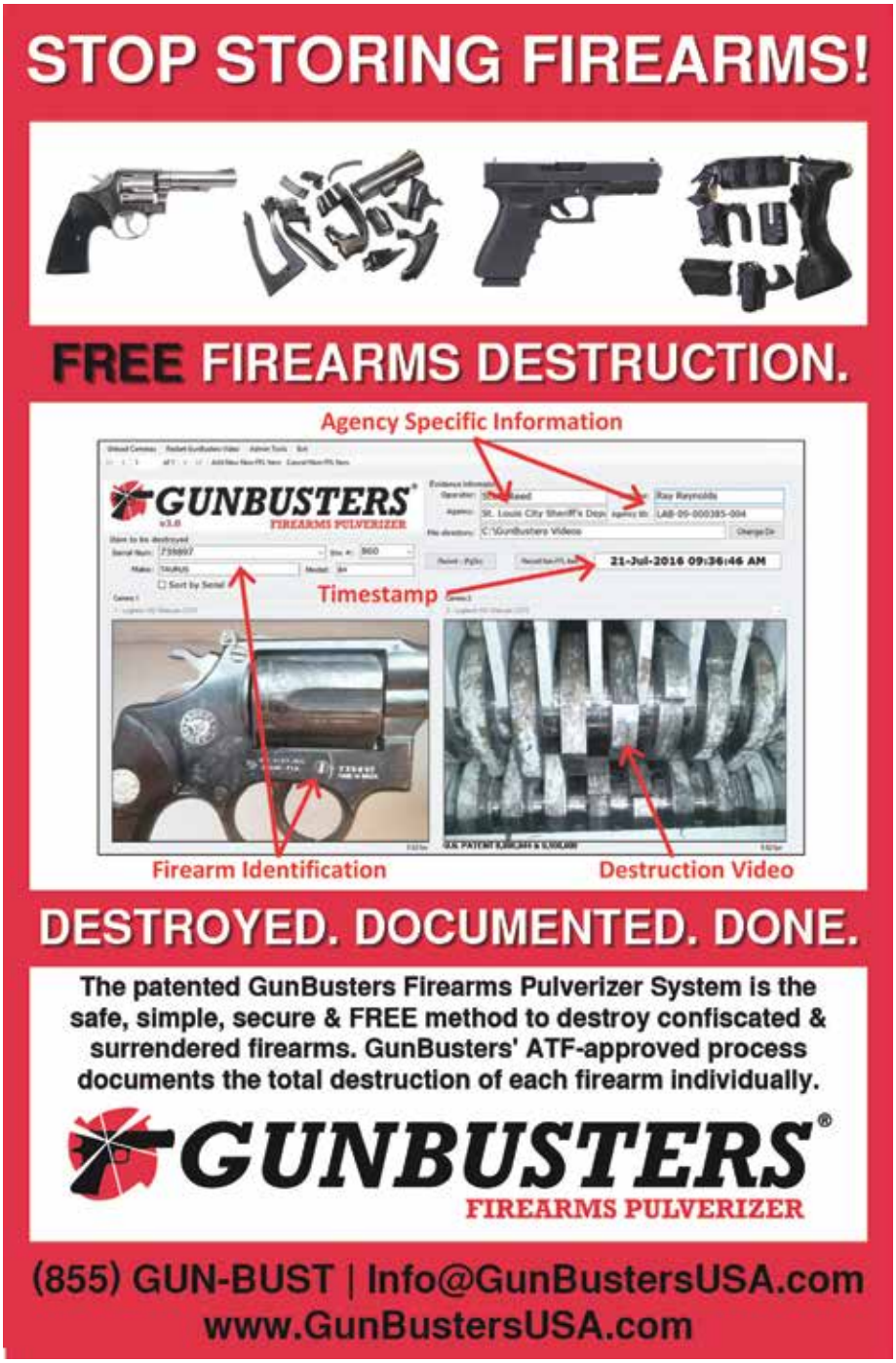
custodian of records to obtain audio recordings, go to a local precinct to get a copy of a recorded interview, or travel to the scene of a crime to canvas the neighborhood for CCTV footage. Data from other systems (records management systems, computer-aided dispatch [CAD], body-worn video, in-car video, crime scene photos, and more) also need to be painstakingly extracted and copied to physical media. And, after all the evidence is collected, the end result is often a pile of USB sticks or CDs, each containing different pieces of information.

However, there are easier ways. New digital investigation solutions are making data collection more efficient and accessible by enabling police departments to accomplish the following:

- **Create a secure public portal for sharing photos, video, and tips.** There's a CCTV camera on nearly every storefront and street corner, and almost everyone walking down the street has a smartphone. Yet police departments generally lack tools to crowdsource visual information from private businesses or the public. With a secure portal, private businesses, universities, schools, and other organizations could register their cameras and contact details, enabling law enforcement agencies to electronically initiate requests for video when needed. Similarly, citizens could securely share information and media that could be helpful to a case.
- **Use a data correlation engine to automate the collection of digital evidence.** As digital silos continue to proliferate, police departments need to be able to automatically connect to various content sources and use data correlation engines to do a lot of the analysis and legwork officers and investigators are doing manually today. Digital investigation solutions solve this problem by breaking down digital silos and correlating data to help automate and expedite the collection of digital evidence.
- **Automate management of requests for evidence.** In the early stages of an investigation, authorities should run every single lead to the ground, but that doesn't always happen, either because they're too busy with other cases and are unable to follow up or because they lose track of an evidence request. The results aren't pretty. In at least one case, video evidence was actually recorded over before investigators could get their hands on it. To ensure better control and follow-up on leads, address these issues by not only automating, but also tracking requests for evidence and implementing a system that notifies authorities when those requests are fulfilled. Forget the hours spent sending emails, placing phone calls, filling out forms, traveling to various sites to pick up evidence, canvassing neighborhoods on foot for video cameras, manually collecting evidence, and copying evidence to CDs and USB drives—piecing together evidence to build a case should be efficient and timely.

Efficient Evidence Collection Using Data Correlation

Digital content—body camera video, in-car video, 9-1-1 recordings, and so on—includes date and time stamps as well as geotags. For example, many body-worn cameras use GPS tracking. Most smartphones tag photos with a GPS location. Voice recording systems can be configured to capture automatic number identification (ANI), automatic location identification (ALI), and even



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Law enforcement agencies need to be able to share information in an efficient, effective, and timely manner, not just among internal investigation teams, but also with other agencies and district attorneys who need evidence to support successful prosecutions.

cellphones' GPS coordinates. CCTV systems, used by most cities and transportation systems, tie locations of cameras to digitized maps.

Using these common reference points—locations, times, case numbers, CAD incident numbers, keywords, and more—a digital investigation system can use its data correlation engine to search all connected sources and databases for potential evidence related to a case. Through the power of audio analytics, it can also use keywords or phrases to find 9-1-1 recordings.

With a digital investigation solution, all the investigator has to do is open the digital case folder from the list of active cases, review the suggested content (along with explanations for why it was recommended), and then selectively add the relevant evidence to the digital case folder.

Aside from the obvious time savings, automating the evidence collection process significantly lessens the possibility that important facts in the case will be missed. One of an investigator's biggest fears is missing a critical piece of evidence that will later turn up on social media or be presented by the defense in court.

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Data Analysis

Even with massive federal assistance during the Boston Marathon bombing case, the amount of digital information to collect and analyze was overwhelming: data from cellphone systems and license plate readers; physical evidence; hundreds of hours of CCTV video; and thousands of crowdsourced photos and videos from private citizens. Dozens of investigators worked around the clock poring over this digital information to extract clues that helped identify the suspects and prevented them from inflicting further harm.

Any one piece of evidence could hold the key to an investigation. But for investigators, the process of analyzing and understanding this information can be like trying to drink water from a firehose. Today, data are so voluminous, and they are stored in so many unconnected systems, that it's virtually impossible to take them all in, digest them, and absorb the relevant facts of a case. Still, analyzing the data and drawing connections are the only way to tell the complete story of what happened, who was involved, where and when it occurred, and why it happened.

Perhaps no case illustrates this better than the Aaron Hernandez case. During the investigation of the ex-New England Patriots football player, who was found guilty of murder in the death of Odin Lloyd, investigators had to collect, sort through, and piece together text messages; cellphone records; photos and videos taken on cellphones; CCTV video recorded at a gas station; video from Department of Transportation cameras in Boston; eyewitness accounts; physical evidence (including shell casings, shoeprints, and gum); and surveillance footage taken from Hernandez's home.[2]

Finding and gathering all of this evidence across 30 miles (the distance from Hernandez's home in North Attleboro, Massachusetts, to Boston, where he'd met with Odin Lloyd) were daunting efforts that consumed tremendous resources and strained budgets. Piecing all of this digital content together to tell the story of what happened was an even bigger challenge—but it made a difference in the case's resolution.

It's not difficult to envision how cases such as this could be significantly aided by digital investigation technology that enables investigators to quickly analyze evidence and connect the dots in a case. Visualization tools allow investigators to view the evidence on a map or in a timeline to see how the who, what, when, where, and why all come together. Current cases can even be rolled up into one map-based view to help an investigator visualize common modi operandi (MOs), patterns, and traits on a geographic level.

Another complexity in the Hernandez case was the many sources of proprietary video that came into play. Video systems have very little, if any, standardization, making it necessary in many cases to secure a proprietary codec to play back the video.

Police departments need an easier way to transcode video to a common, standard format, so that all of the pieces of an investigation can come together seamlessly. And they need tools that enable them to do so without impacting the integrity of the original file.

Information Sharing

Analysis alone won't bring a case to conclusion. Information sharing and collaboration are essential for effective investigations. This is especially true for cases involving homicides and gang activity, which often include task forces and investigative teams working multiple angles. Larger-scale incidents, such as the Boston Marathon bombing, necessitate collaboration on an even grander scale, at local, state, and federal levels.

Law enforcement agencies need to be able to share information in an efficient, effective, and timely manner, not just among internal investigation teams, but also with other agencies and district attorneys (DAs) who need evidence to support successful prosecutions.

Unfortunately, current procedures often work counter to the goal of information sharing.

Roadblocks to Information Sharing

One of the most telling examples of information sharing falling short is what happens at the end of the investigative process when the investigator turns over evidence to the DA.

After the investigator manually collects the different pieces of evidence and analyzes them, the next step is to package the digital case evidence for the prosecution. Interview recordings, audio recordings, photographs, in-car video, and documents often are copied in triplicate onto CDs, DVDs, or USB drives. This pile of evidence is often reviewed by the investigator's supervisor, who approves the evidence. The investigator then physically transports the collection of disks and USB drives to the DA's office.

If this sounds extremely time-consuming and labor intensive, it is. But more important, this method of packaging and delivering evidence diminishes its prosecutorial value, in the same way it diminishes its value for investigations. When an investigator or DA is dealing with dozens of files containing all manner of digital evidence, stored on tens, maybe even hundreds of CDs, DVDs, or USB drives, producing a coherent timeline is an uphill battle.

Yet assembling evidence in a timeline is what makes it compelling. As the cases discussed herein all demonstrate, the ability to connect the dots and tell a story is vitally important for the jury's understanding of a case. As the volume and variety of digital silos grow, this will become increasingly important—and increasingly difficult.

Selecting the Right Tools for Information Sharing

The right tools, however, can make this Sisyphean task more manageable, allowing law enforcement professionals to efficiently close cases and bring justice to victims.

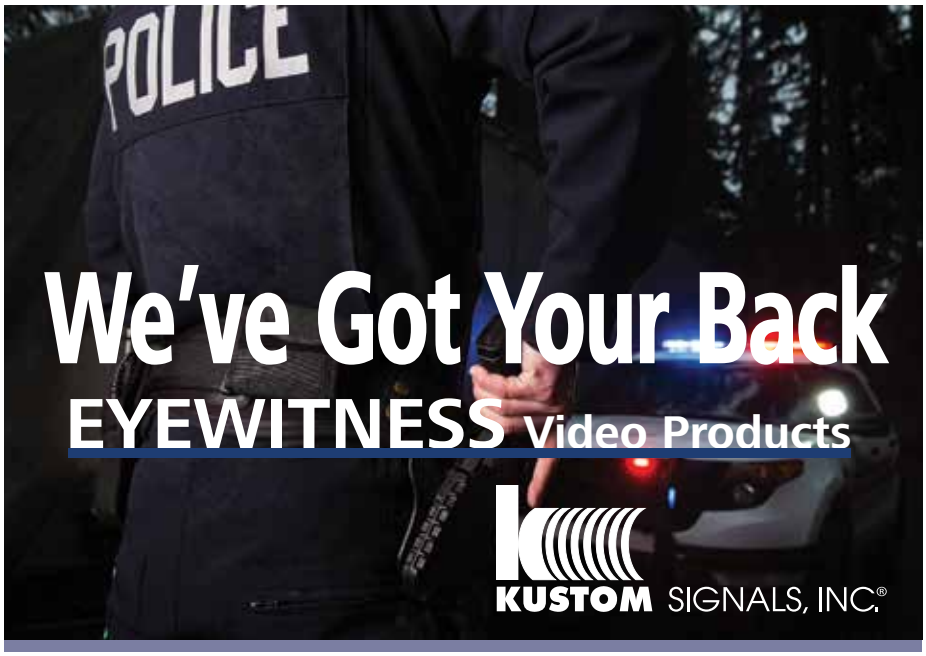
Digital investigation solutions provide a better way for police departments to collaborate and share information. But not all solutions are created equal. Law enforcement leaders can use these four questions to sort the good from the bad. If the answers are "yes" more often than "no," they're on the right track.

1. Does the system alleviate the time-consuming manual process of copying and hand-delivering digital evidence to prosecutors? For example, does it enable the agency to securely and electronically share evidence with prosecutors, simply by emailing a link to a digital case file?
2. Does the system provide permissions-based access to digital case folders where detectives can view and manage collected evidence and collaborate on building a case?
3. Can the system automatically track who accessed what—and when—for each case folder and piece of evidence to protect evidence integrity and ensure admissibility in court?
4. Does the solution enable investigators and prosecutors to visualize evidence in ways that make it easily understood—for example, geographically or on a timeline? Can it be presented to the jury in the same manner to increase the likelihood the case will be successfully prosecuted?

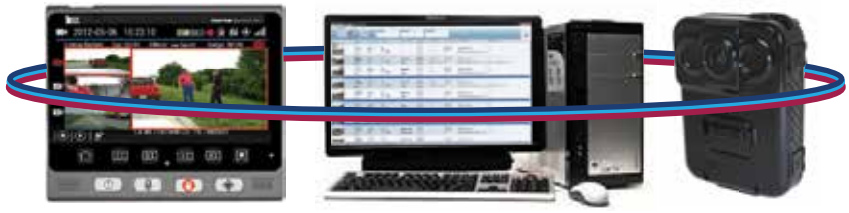
A comprehensive digital investigation solution should streamline the entire investigation process from the collection and analysis of digital evidence to collaboration and sharing.

The Digital Policing Age Demands New Solutions

Law enforcement agencies everywhere are investing in digital policing initiatives to better safeguard the public, but the amount of digital information generated from these disparate sources makes investigations more



The integration of In-Car Video and Body-Worn Video to a powerful digital video management solution, Eyewitness Data Vault, is the smart choice.



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challenging. Law enforcement agencies need to find better ways to collect, analyze, and share digital evidence so they can accelerate investigations and more quickly bring justice to victims. Fortunately, the technology to do this is within their reach. ❖

Ed Davis was the police commissioner of the Boston Police Department from 2006 to 2013. He currently serves as CEO of Edward Davis, LLC Security and Management Consulting. In addition, Mr. Davis has served as a consultant to NICE Systems, a company in the digital policing field.

Notes:

[1]Matt Stroud, "In Boston Bombing, Flood of Digital Evidence Is a Blessing and a Curse," *The Verge*, April 16, 2013, http://www.theverge.com/2013/4/16/4230820/in-boston-bombing-flood-of-digital-evidence-is-a-blessing-and-a-curse (accessed September 7, 2016).

[2]Stephanie Slifer, "Aaron Hernandez Guilty of First-Degree Murder in Death of Odin Lloyd," April 15, 2015, CBS NEWS, http://www.cbsnews.com/news/aaron-hernandez-guilty-of-first-degree-murder-in-death-of-odin-lloyd (accessed September 7, 2016).

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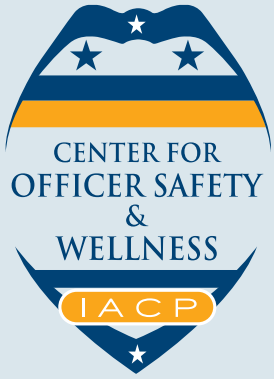

Line of Duty Deaths

"They will be remembered—not for the way they died, but for how they lived."

The IACP wishes to acknowledge the following officers, who made the ultimate sacrifice for their communities and the people they served. We extend our prayers and deepest sympathies to their families, friends, and colleagues.

Sergeant Shawn Miller
West Des Moines Police Department, Iowa
Date of Death: August 3, 2016
Length of Service: 26 years (with agency)

Police Officer Justin Scherlen
Amarillo Police Department, Texas
Date of Death: August 4, 2016
Length of Service: 11 years

Special Agent De'Greaun Frazier
Tennessee Bureau of Investigation
Date of Death: August 9, 2016
Length of Service: 10 years, 6 months

Corporal Bill Cooper
Sebastian County Sheriff's Office, Arkansas
Date of Death: August 10, 2016
Length of Service: 16 years (with agency)

Border Patrol Agent Manuel Alvarez
U.S. Department of Homeland Security, Customs and Border Protection, U.S. Border Patrol
Date of Death: August 11, 2016
Length of Service: 16 years

Police Officer Jose Chavez
Hatch Police Department, New Mexico
Date of Death: August 12, 2016
Length of Service: 2 years

Police Officer Shannon Brown
Fenton Police Department, Louisiana
Date of Death: August 13, 2016
Length of Service: 13 years

Police Officer Timothy Kevin Smith
Eastman Police Department, Georgia
Date of Death: August 13, 2016
Length of Service: 5 years, 6 months

Police Officer Kenny Moats
Maryville Police Department, Tennessee
Date of Death: August 25, 2016
Length of Service: 9 years

Senior Police Officer Leander Frank
Navajo Division of Public Safety, Tribal Police, Arizona
Date of Death: August 30, 2016
Length of Service: 13 years

Police Officer Clint Corvinus
Alamogordo Police Department, New Mexico
Date of Death: September 2, 2016
Length of Service: 4 years, 6 months

Senior Police Officer Amir Abdul-Khaliq
Austin Police Department, Texas
Date of Death: September 4, 2016
Length of Service: 17 years (with agency)

Lieutenant Waldemar Rivera-Santiago
Puerto Rico Police Department
Date of Death: September 5, 2016
Length of Service: 30 years

Deputy Sheriff Kenneth Hubert Maltby
Eastland County Sheriff's Office, Texas
Date of Death: September 7, 2016
Length of Service: 2 years (with agency)

YOUR COMMUNITY. YOUR SAFETY. YOUR IMPACT.

OUR PRIORITY.

NEW!

Opening Ceremony Keynote Speaker

Simon Sinek

Saturday, October 15
3:30 PM – 5:00 PM

Described as a "visionary thinker with a rare intellect," Sinek teaches leaders and organizations how to inspire people. Sinek will explain what it takes to create an environment in which people work as they were designed - together.

Your job requires you to uncover the best solutions available to ensure your community's safety. Don't go it alone – with IACP as your trusted partner, you'll have complete access to the latest technologies, effective tactics, and essential strategies that you, your agency, and your community need. You can rely on the IACP Annual Conference and Exposition because your priorities are our priorities.

Serving the Leaders of Today,
Developing the Leaders of Tomorrow®

General Assembly

Monday, October 17
10:00 AM - 11:30 AM
The General Assembly will feature major announcements and addresses from top law enforcement officials from around the world.

Critical Issues Forum

Tuesday, October 18
10:00 AM – 11:30 AM
The IACP 2016 Critical Issues Forum provides a facilitated discussion between law enforcement leaders and subject matter experts as they discuss critical issues facing the world today.

Exposition Hours

Sunday, October 16	10:00 AM – 5:00 PM
Monday, October 17	10:00 AM – 5:00 PM
Tuesday, October 18	10:00 AM – 2:00 PM

NEW!

In response to attendee feedback, IACP has set aside 6 dedicated Expo Hall hours over 3 days with no scheduled education sessions, providing attendees with the time they need to explore the Exposition.

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NEW! IACP has adjusted the educational session schedule to conform with adult learning best practices. The shorter sessions will also provide space for more topics to be covered over the course of the conference.

IACP 2016 educational sessions will examine topics such as:

- Community-Police Relations
- Going Dark – Challenges of Gathering Electronic Evidence
- Critical Incident Management Training
- Investigation of Use of Force Issues
- Crisis Intervention Training
- Body Cameras & Law Enforcement Technology
- Combating Violent Extremism/Terrorism
- Officer Health & Wellness
- Police Recruitment

IACP 2016

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IACP 2016

OCTOBER 15–18
San Diego Convention Center
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Conference photographs by Convention Photo by Joe Orlando

123rd Annual IACP Conference and Exposition

San Diego Convention Center

San Diego, California, USA

The 123rd Annual Conference and Exposition of the International Association of Chiefs of Police (IACP 2016) will convene Saturday, October 15, 2016, through Tuesday, October 18, 2016, at the San Diego Convention Center, 111 West Harbor Drive, San Diego, California, USA.

The IACP 2016 Mobile App

The IACP 2016 Mobile App, is a native application for smartphones (iPhone and Android) and iPads. A hybrid web-based app is available for Blackberry and a web-based version of the application is available for all other web browser–enabled mobile devices.

Downloading the mobile app is easy! For Apple products (including iPhone, iPod Touch, and iPad) and Android phones, visit the App Store or Google Play on your device and search for "IACP 2016." For all other phone types (including BlackBerry and other web browser–enabled phones), point your mobile browser to http://m.core-apps.com/iacp2016 or scan the QR code. From there, you will be directed to download the proper version of the app for your particular device or, on some phones, bookmark the page for future reference.

After you have downloaded the app, follow these instructions to access your personal schedule if you created it online: click on the * symbol at the top right of the Dashboard (Settings) and then select "Multi Device Sync." Select "Additional Device" and enter the email and password you created when you initially set your schedule online. Please note, these steps and a login are not needed if you set up your personal schedule directly within the app on your mobile device.

For attendees, the IACP 2016 Mobile App provides easy-to-use interactive capabilities to enhance your event experience, including the following:

- **Dashboard:** Stay organized with up-to-the-minute exhibitor, speaker, and event information.
- **My Schedule:** Plan your schedule with one click. Take notes and rate the workshops you attend.
- **Maps:** Navigate the convention center and use the interactive Exposition Hall map to help you navigate the show floor.
- **Events:** Access a complete list of workshops, meetings, and networking events.
- **Daily Resources:** View everything you need from registration hours to Connection Zone locations. View services available for delegates and exhibitors.
- **Alerts:** Receive important real-time communications from IACP staff.
- **Social Media:** Follow and join in on the Facebook and Twitter conversations about IACP 2016.
- **Blog:** Read the latest blog posts from IACP staff, board members, and your fellow attendees.
- **Exhibitors:** Locate exhibitors, read company descriptions, bookmark your favorite exhibitors to visit, and take notes for future reference.
- **What's On Now:** See all events happening at the moment and coming up in the next 30 minutes.

The IACP 2016 Mobile App can serve as a far-reaching and effective industry reference tool throughout the coming year. It provides the ability to download and bookmark the exhibitors you want to follow up with in the future for quick and easy access on a device you use daily.

Navigating the Conference

To assist those who are new to the IACP Conference and Exposition or those who just want to get more information about the event, there will be a First-Timers' Orientation on Saturday, October 15, in Room 6C at 8:30 a.m. This session will give you helpful hints on how to navigate the conference, highlight "can't-miss" workshops and events, and provide tips on how to plan your schedule and information on where to go for help.

The IACP Annual Conference and Exposition is a working conference with a focus on education and networking and the education and technology exposition. To benefit the most from your conference experience, plan ahead; allow time to stop and chat with fellow attendees and exhibitors; and seek out the solutions to questions, ideas, and issues.

Planning: Review the information on the conference website at www.theIACPconference.org or on the IACP 2016 Mobile App. Schedule the meetings and the educational sessions you plan to attend and the time you want to spend in the Exposition Hall in advance.

Meetings: With some exceptions, committee, section, and division meetings are open to all IACP members. These sessions provide excellent networking opportunities and are forums for sharing new ideas and information.

Networking: There are numerous networking events available during the conference. These events provide attendees with the opportunity to share ideas, engage in collaborative problem-solving, and create lasting relationships. Bring plenty of business cards and write down contact information for new acquaintances so you are able to follow up when you return home—or connect through the IACP 2016 Mobile App.

NEW!

IACP has adjusted the education session schedule to conform to adult learning best practices. This means shorter session lengths and space for more topics to be covered over the course of the conference. In addition to shorter session times, IACP 2016 will also feature Quick Hits. These 20-minute sessions will provide quick, concise information, giving you yet another way to grab some education throughout the day.

Connection Zones: Two expanded high-tech lounge areas—Connection Zones—will include Wi-Fi hotspots, charging stations for mobile devices, plug-and-play stations, lounge seating, stationary laptops with Internet access, and snacks and beverages. Connection Zones can be found at the following locations:

- Ballroom 6 Lobby, Upper Level
- Exposition Hall, Booth #2955

Education Sessions: Review the sessions online or via the IACP 2016 Mobile App and record the workshops you plan to attend. There are multiple educational tracks and attendees are welcome to attend any of the sessions in any of the tracks. Your badge and barcode will record and verify your attendance at conference workshops. Simply give your badge to the conference staff at the door so they can scan it in the barcode reader located in the workshop room. To obtain your workshop certificates, go to the workshop training verification station at IACP Central Jr. on the upper level of the convention center.

Critical Issues Forum: Lessons in Leadership

TUESDAY, OCTOBER 18, 10:00 A.M.–11:30 A.M.

This is a challenging time for the policing profession. This session will feature police executives who have led their agencies through a wide array of critical incidents such as targeted violence and mass casualty attacks, civil disturbances, and attacks targeting police. Chief **Jarod Burguan**, San Bernardino Police Department; Commissioner General **Catherine De Bolle**, Belgian Federal Police; Chief **John Mina**, Orlando Police Department; Director of International Cooperation **Emile Perez**, French National Police; and Superintendent **Eddie Johnson**, Chicago Police Department, will discuss the lessons they learned during these events, including the leadership challenges they confronted; the real-time critical operational decisions that had to be made; and the impacts these events have had on their officers, their departments, and their communities.

IACP's Global Perspectives Series

IACP 2016 will feature three cutting-edge sessions that will focus on the global challenges facing law enforcement and the impacts these challenges have on local agencies. Each interactive session will feature leaders in the field who will provide attendees with their unique perspectives and detail their firsthand experiences addressing these critical issues. The sessions will identify common themes and practical solutions that attendees can implement in their own communities.

Use of Force Revisited: Approaches from Around the Globe

SATURDAY, OCTOBER 15, 10:00 A.M.–11:30 A.M.

The session will examine various approaches to use of force by law enforcement agencies around the world, including how law enforcement agencies can educate communities on how and why law enforcement officers use force; de-escalation strategies; and solutions and safeguards to minimize use-of-force incidents.

The Unexpected Challenge: Law Enforcement and Mental Health

MONDAY, OCTOBER 17, 1:00 P.M.–2:30 P.M.

In this panel discussion, the impact of encounters with persons with mental illness on daily operations of law enforcement agencies will be examined, as well as related issues such as training, Crisis Intervention Teams, and partnerships with mental health professionals.

A Shared Plague: The Impact of Narcotics Around the World

TUESDAY, OCTOBER 18, 1:30 P.M.–3:00 P.M.

This session will examine the impacts that narcotics production, trafficking, and use have in nations and communities around the world, with a focus on the opioid abuse crisis and overdose epidemic.

Beacon Technology

This year IACP is using new beacon technology to help us learn what is most important to our attendees at the conference. A random sample of attendees will have a beacon attached to their conference badge. As they pass by beacon sensors throughout the exposition hall and in the general session and workshop rooms, their movements will be reported. Movement outside the convention center will not be collected. We will use the data to plan for future events and topics, improve traffic flow at conference venues, and, ultimately, provide a better conference experience for you. All data will be collected anonymously and kept with IACP.

The Exposition Hall

The IACP 2016 Exposition Hall features exhibits from more than 700 companies displaying the newest products and services available to the law enforcement community.

Help open the Exposition Hall during the ribbon-cutting ceremony on Sunday, October 16, at 9:45 a.m. at the entrance to Hall D. Plan to visit the hall frequently Sunday morning through its close at 2:00 p.m. on Tuesday, October 18.

Navigating the exposition floor requires advance planning; the following steps can help you make the most of the time available:

- Build your own personalized schedule to help you navigate the conference by adding items to your online itinerary through My Itinerary, or choose your favorite exhibitors using the IACP 2016 Mobile App or the list from the printed program.
- Review the Exposition Hall Floor and Planner to organize your plan to navigate the exposition hall.
- Plan to make at least two trips through the Exposition Hall. The first trip is to locate the vendors you have identified in advance and to identify new exhibitors that you want to spend time visiting. On your second trip, you can actually meet with exhibitors and collect product literature.
- Use the Notes function in the IACP 2016 Mobile App to take notes on products and services of interest; your printed program also contains note pages.
- Mark the spot where you stopped on your map if you leave the Exposition Hall before completing the circuit, so you will know where to start again.
- Allow the exhibitors to scan your conference badge for their lead retrieval database, which will expedite information gathering at the booths.
- Make the most of your face-to-face meetings. Discuss your needs with the exhibitors; if they cannot help you, they may be able to direct you to those individuals who can.
- Plan to carry a lot of product literature home. The exhibitor materials are important, and they may be useful in the future. FedEx is conveniently located in Lobby D of the convention center so take all the literature you need and make arrangements to ship a box back home.
- Schedule a demonstration or arrange for a bid to evaluate products back home.
- Allow time to discover new products and services at exhibits that are not on your list of must-see exhibitors.

NEW!

In response to attendees' requests for more time to access the exposition, IACP has created dedicated exposition hours for the first time. This dedicated time provides you with a chance to explore the exposition hall without missing out on other conference events.

- Sunday, October 16, 11:30 a.m.–12:30 p.m. and 3:30 p.m.–5:00 p.m.
- Monday, October 17, 11:30 a.m.–1:00 p.m. and 4:00 p.m.–5:00 p.m.
- Tuesday, October 18, 11:30 a.m.–1:30 p.m.

Join us on Saturday, October 15, in San Diego as we celebrate 50 years of the IACP Police Officer of the Year award and launch the next 25 years of the IACP Foundation with a new vision—ensuring that traumatically injured law enforcement officers will never feel abandoned. Tickets are still available at www.theIACP.org/Foundation-Gala.

Cutting-Edge Education and Demonstrations

Education at IACP 2016 doesn't just happen in the classrooms; it also occurs in the Exposition Hall.

Solutions Presentation Theatre

Located in the Exposition Hall, the Solutions Presentation Theatre features demonstrations of new products and services to show their practical uses. Learn from the developers how the products and services actually work in the field.

Direct Examination

Hold, touch, feel, and see demonstrations of products at exhibitors' booths. Talk to the experts about the application of the product in your daily work experience. The exhibitors are more than salespeople; they are the designers and inventors of the products that serve law enforcement needs daily.

Exposition Hall Zones

In addition to the access you have to the latest products and technology, IACP has developed themed zones to give you time to explore and recharge while in the Exposition Hall.

Sports Zone – Booth #5715 (Sponsored by The Zellman Group)

The Sports Zone is a fun space to meet with colleagues to watch a game or grab lunch from ballpark-style vendors. NFL games will be broadcast on Sunday, and the latest sports news will run throughout the exposition to keep you up-to-date with plays of the day and the latest scores.

Relaxation Zone – Booth #748 (Sponsored by Verizon)

IACP 2016 is full of education, networking, and walking around San Diego. When you need time to unwind, visit the Relaxation Zone for complimentary seated massages by licensed massage therapists, infrared foot massagers, and fresh-baked cookies.

Official Business of the IACP

Pursuant to the requirements of the IACP Constitution, the IACP Board of Officers has determined that association business at the annual conference will be covered during the Opening Ceremony, General Assembly, and Annual Banquet.

Opening Ceremony

SATURDAY, OCTOBER 15, 3:30 P.M.–5:00 P.M.

The IACP 2016 Opening Ceremony is a great way to kick off your conference experience. Join other conference attendees for a welcoming message and inspiring keynote address from Simon Sinek, who has been described as "a visionary thinker with a rare intellect." Sinek's talk, *Leaders Eat Last: Why Some Teams Pull Together and Others Don't*, will provide insight for leaders and organizations on how to inspire people.

General Assembly and Uniform Day

MONDAY, OCTOBER 17, 10:00 A.M.–11:30 A.M.

The IACP Elections Commission Report will be presented during the General Assembly. All police officials are asked to wear their departments' dress uniform to celebrate the association's diversity and internationalism by creating a spectacular visual display of uniforms from around the world. Speakers from around the globe will address critical issues confronting law enforcement.

Annual Banquet

TUESDAY, OCTOBER 18, 6:00 P.M.–11:00 P.M.

The IACP Annual Banquet features the formal swearing-in of the 2016–2017 IACP President and Board of Officers. This is a black-tie-optional event (business suits are appropriate). Entertainment will be provided. Separate tickets are required for this event; visit www.theIACPconference.org for more information.

Resolutions

The Resolutions Committee manages the process of considering resolutions. The Resolutions Committee meets on Monday, October 17, from 12:00 noon to 2:00 p.m. For the first time in IACP history, all members will have the opportunity to vote on resolutions, even if they are unable to attend the conference. The IACP will conduct a remote electronic voting process and will notify all members with further guidance at the onset of voting after IACP 2016 concludes.

Election of Officers

The candidate for Fourth Vice President is Chief Cynthia Renaud, Folsom Police Department, California. The candidates for Vice President at Large are Director of Public Safety, Alexander Bebris, City of Oakwood, Ohio; Chief Wade Carpenter, Park City Municipal Corporation, Utah; and Chief Robert Ticer, Loveland Police Department, Colorado. Voting will take place from 8:00 a.m. to 4:00 p.m. on Monday, October 17.

Candidates for 2017 Office

Any active member who is planning to run for office at the IACP 2017 Annual Conference and Exposition in Philadelphia, Pennsylvania, will have the opportunity to announce his or her candidacy at the conclusion of this year's General Assembly on Monday, October 17, 10:00 a.m.–11:30 a.m., in Ballroom 20 at the convention center.

After the Conference

You will receive an immense amount of information at the conference through education sessions, meetings, and exhibitor demonstrations. You can use the IACP 2016 Mobile App to take notes throughout the conference. When you return home, use your notes to follow up with exhibitors and review and pass along the information you received in educational sessions.

IACPtv in San Diego

Keep up with the conference news through IACPtv streamed in selected hotels, throughout the convention center, and on the IACP YouTube channel. IACPtv will bring key issues behind the conference to life, including daily behind-the-scenes interviews, coverage of conference events, and reactions to the day from attending delegates.

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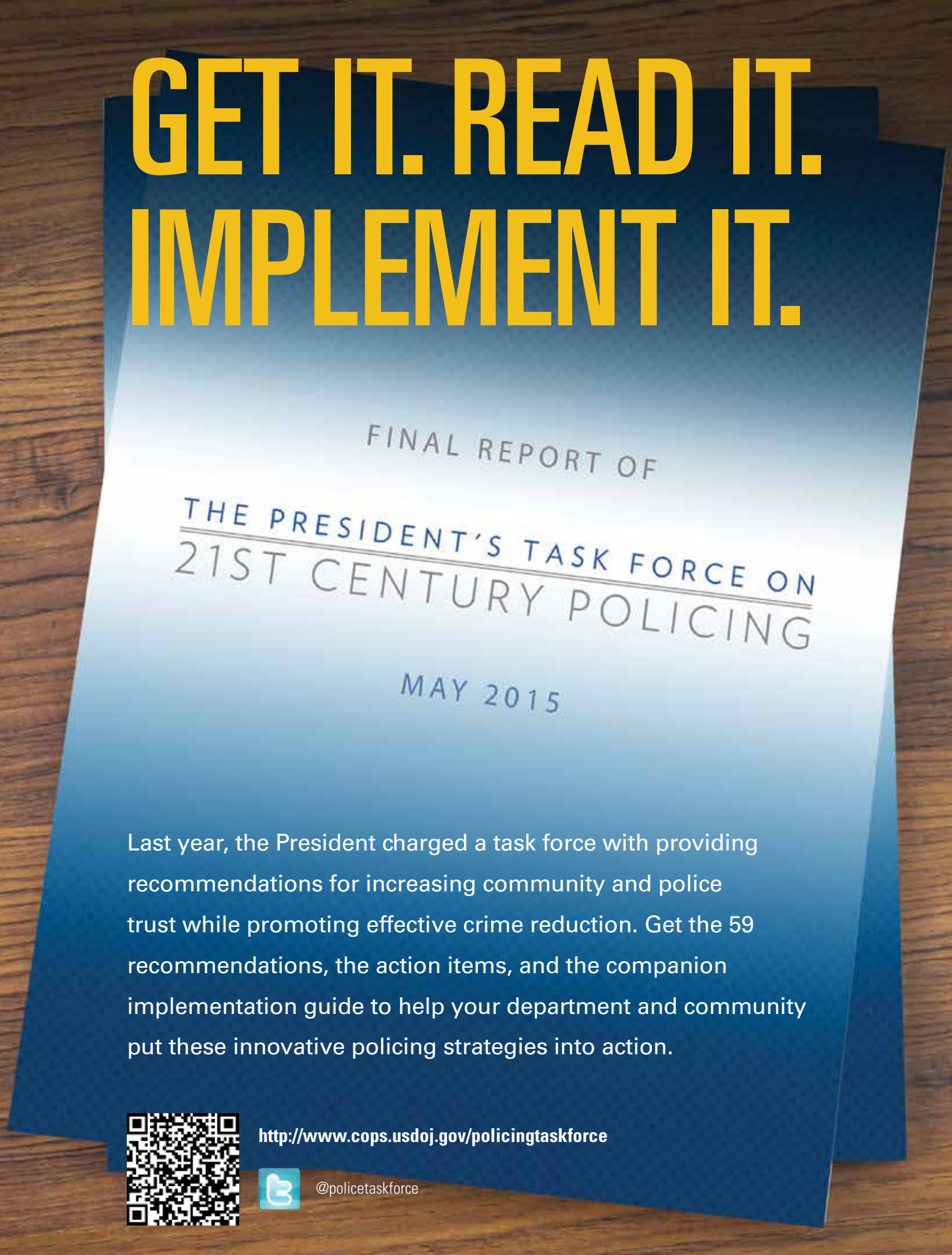

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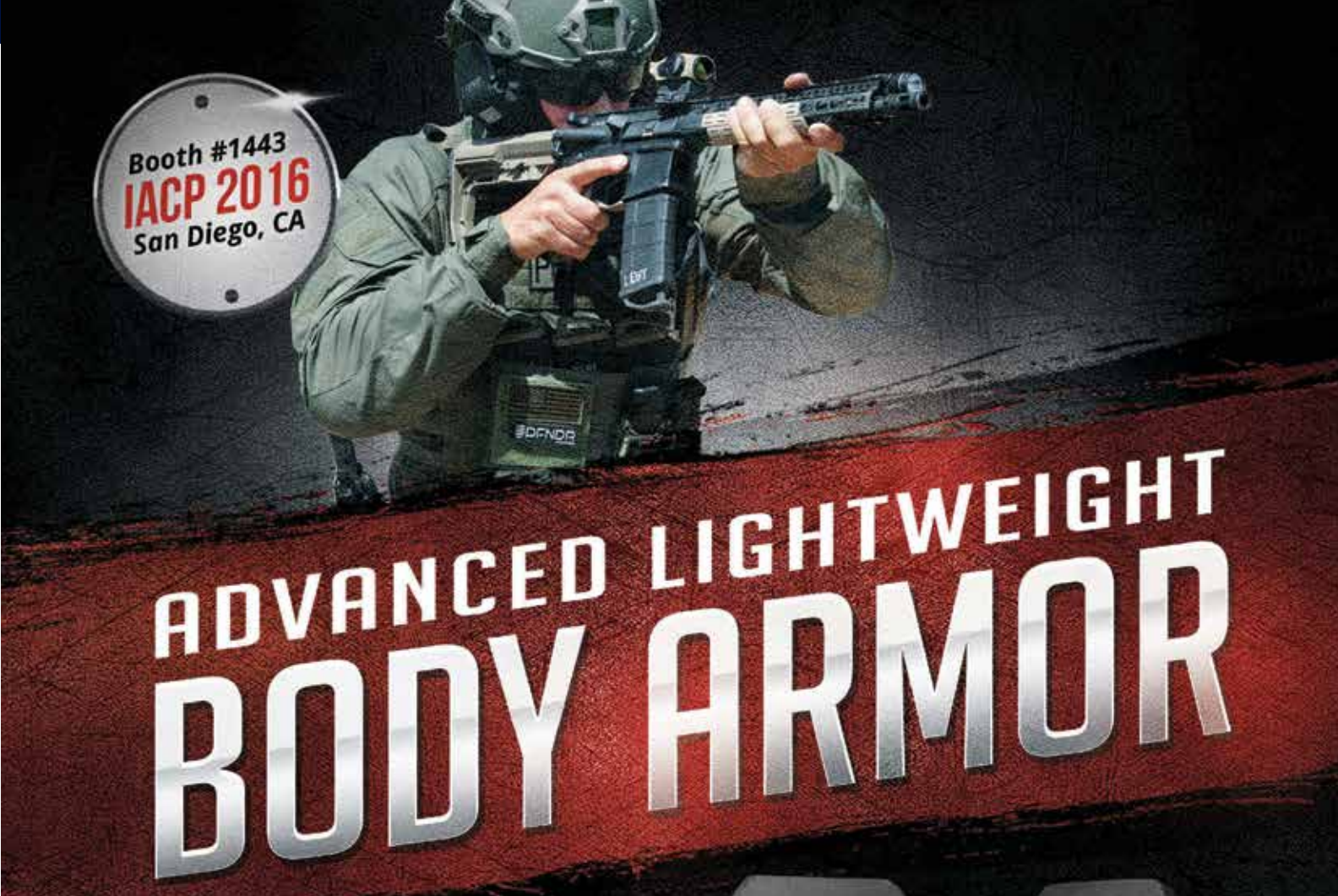

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EXHIBITOR UPDATE

The **Police Chief** *keeps you on the cutting edge of law enforcement technology with monthly product announcements. Items about new or improved products are based on news releases supplied by manufacturers and distributors; IACP endorsement is in no way implied.*

Concealment holsters

Safariland announces the expansion of Safariland and Bianchi concealment holster lines with several new fits for the incredibly popular Smith & Wesson M&P Shield .45. Renowned for innovation, quality, and performance, Safariland holsters are the overwhelming choice of law enforcement agencies and competition shooters. The concealment holster models fitting the M&P Shield .45 encompass 10 models for belt slide, paddle, and inside-the-pants carry. The Bianchi holsters for the Smith & Wesson M&P Shield .45 demonstrate the brand's legacy craftsmanship in leather products that balance functional design and quality. M&P Shield .45 users have several carry options with choices for two belt slide holsters and two inside-the-waist models, including Bianchi's best-selling Model 100 Professional and three holsters from the Allusion series.

Visit the Safariland Group's booth at IACP 2016, #1039. For more information, visit www.safariland.com/dutygear.

Online scheduling software

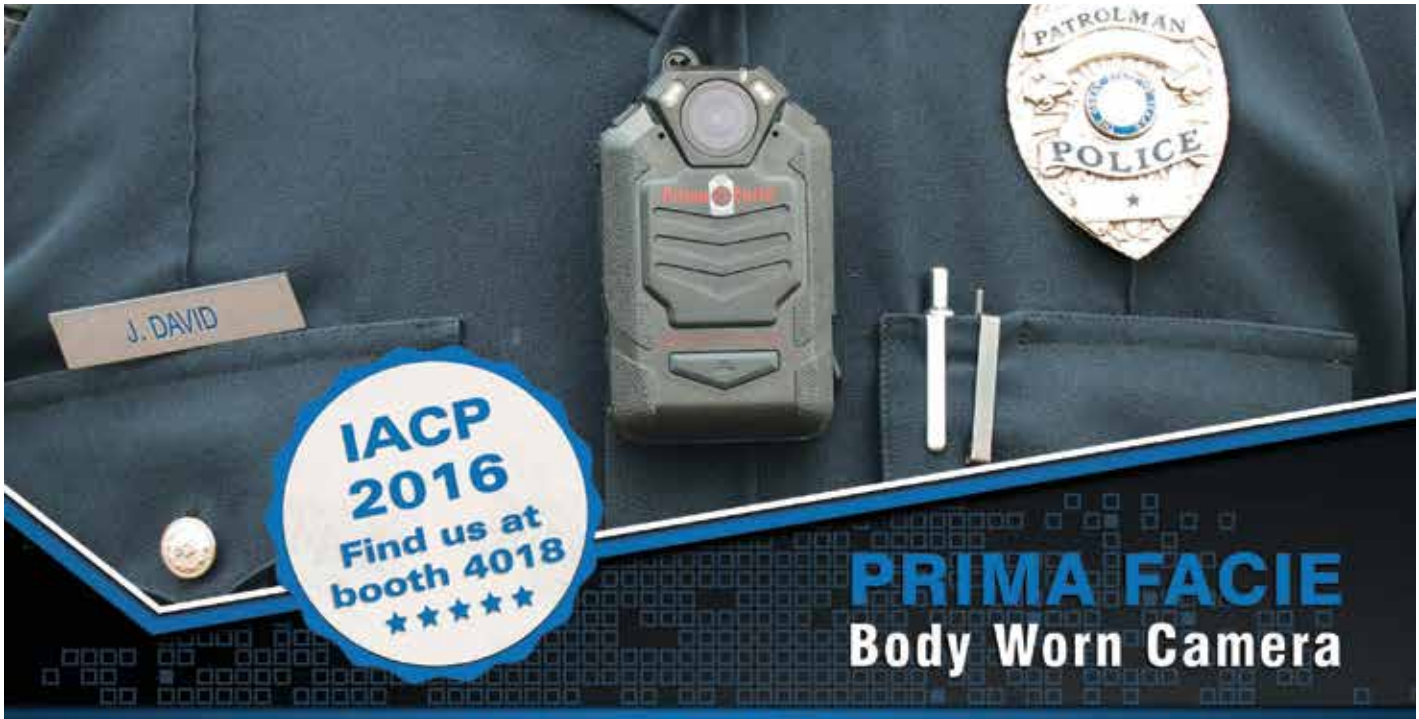
Aladtec Inc. offers an online employee scheduling and workforce management system for the public safety sector and offers customers a dedicated support team to provide free training and ongoing system support. The software offers tremendous time savings, reduced overtime, reduction in errors, and improved efficiency and employee morale. The online software system is much more than just an employee scheduling tool. It provides mobility—accessible 24/7 from any computer, smartphone, or mobile device with Internet access; the ability to create, submit, review, and store forms within the system to track vehicle maintenance, inventory, and so forth; employee data management—easy to store and access contact information and certifications; an event calendar to post training sessions, meetings, and public appearances; and more.

Visit the Aladtec Inc. booth at IACP 2016, #5542. For more information, visit www.aladtec.com.

IP camera

Axis Communications, a leader in network video, introduces the AXIS Q1615/-E Mk II, an IP camera featuring i-CS lens. The new intelligent i-CS lens directly exchanges information such as its geometrical distortion and the exact position of its zoom, focus, and iris opening. Thanks to several motors inside the i-CS lens, zoom, focus, and iris opening can be remotely adjusted. Furthermore, the exchange of information between the i-CS lens and the camera enables easier setup of electronic image stabilization and barrel distortion correction, reducing the time needed for setup and enabling easy installation. AXIS Q1615/-E Mk II features scene profiles enabling the installer to select between Traffic Overview, Forensic, or Live profiles. When choosing one of the preset scene profiles, the cameras automatically adjust exposure time, white balance, aperture, sharpness, contrast, and noise in order to obtain the best video quality for the selected video surveillance needs.

Visit the Axis Communications booth at IACP 2016, #1631. For more information, visit www.axis.com/us/en.



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The Prima Facie® body worn camera collects full motion video while combining even more advanced features; high resolution digital stills greatly enhance the documentation of crime scenes, and audio-only recording is convenient for interviews or collecting witness statements. The automatic IR illuminators allow action to be seen in total darkness, and the 2 inch LCD screen allows recorded media to be instantly reviewed. The unique two-way radio interface allows the Prima Facie to replace existing chest mounted microphones, reducing weight and bulk.

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800.849.9621
www.safetyvision.com

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SAFETY VISION®

Touchscreen display

Havis Inc. introduces a new lightweight touchscreen display that mounts directly to a vehicle's dash panel: the TSD-101. The new space-saving display functions as an external monitor and provides the option of docking and mounting computing devices in the trunk to maximize space and create a comfortable work environment inside the cabin. The lightweight touchscreen display and mounts are designed for optimum comfort and safety to improve productivity in a mobile office. Rapid adjustments and easy back-and-forth toggle give the user a full range of motions to maintain a comfortable posture. The display features an anti-glare screen and a red monochrome night mode designed to minimize eyestrain.

Visit the Havis Inc. booth at IACP 2016, #5317. For more information, visit www.havis.com.

Upgrade to mobile data collection and retrieval platform

SceneDoc announces the availability of SceneDoc 4.0, a major upgrade aimed at both patrol officers and investigators that drives simplified data gathering, with the capability to improve and increase both incident- and non-incident-related data collection. It includes a new timeline feature, making it simple and intuitive to open the mobile application and immediately begin collecting any type of data, generate any report, and take searchable and actionable electronic notes. Police officers appreciate the flexibility it provides as a launching pad to any data collection task and supervisors find the oversight it provides, at an activity level, unprecedented in law enforcement. Field notes are now actionable and searchable by those in the agency.

Visit the SceneDoc booth at IACP 2016, #3852. For more information, visit www.scenedoc.com.

Commercial vehicle enforcement wheel and axle scales

OPS Public Safety introduces it's all new CVE Wheel/Axle Scales Unit specifically designed for commercial vehicle enforcement. Engineered for the Ford Explorer, it holds four scales, gear, and rifles. It is manufactured of heavy gauge aluminum with available features that include a 10-inch-high by 35-inch-wide by 20-inch-deep storage drawer with heavy duty 200 lbs. ball bearing slides, a 36-inch-deep driver's side storage compartment, an anti-skid top surface with perimeter cargo rail, and durable anti-skid rubber in drawer bottom and side compartment. The detachable scale compartment has Teflon slide rails. To access the spare tire, simply unfasten and remove the scale compartment. The base and brackets utilize OEM bolt holes that eliminate drilling for installation. An optional barrier is available.

Visit the OPS Public Safety booth at IACP 2016, #5116. For more information, visit www.OPSpublicsafety.com.

Server

Hewlett Packard Enterprise offers the ProLiant ML350 Gen9 Server. It delivers a class-leading combination of performance, expandability, manageability, reliability, and serviceability. ML350 Gen9 Server leverages the Intel Xeon E5-2600 v3 and v4 processors and the latest HPE DDR4 SmartMemory. Additional support for 12 Gb/s SAS, embedded 4x1GbE NIC with a broad range of graphics and compute options is also available. Manage your HPE ProLiant Server in any IT environment by automating the most essential server lifecycle management tasks: deploy, update, monitor, and maintain. The ML350 Gen9 Server is ideal for enterprise IT infrastructure to mission critical applications. HPE Smart Array Controllers are designed to increase 12 Gb/s performance, data availability and storage capacity while providing the flexibility in choice of solutions that are simple to manage. It comes with up to 24 DIMM slots to support HPE DDR4 SmartMemory 2400MHz, helping to prevent data loss and downtime with enhanced error handling while improving workload performance and power efficiency.

Visit the Hewlett Packard Enterprise booth at IACP 2016, #4509. For more information, visit http://marketplace.hpe.com/home.

New features for public safety platform

Rave Mobile Safety announces two innovative new features of the Rave Platform, Rave Command View and Rave 911 Analytics. Rave Command View gives 9-1-1 managers and dispatchers interactive, map-based views of critical information, such as 9-1-1 call patterns and critical facility data during active emergencies, including information collected through the Smart911 platform and gives 9-1-1 and first responders access to a 9-1-1 callers' Smart911 Safety Profiles, Smart911 Facility Profiles, and Rave Panic Button activations. Managers and dispatchers can see and react to real-time 9-1-1 call traffic and trends. Additionally, Rave 911 Analytics provides easy web-based access to historical call reporting and analytics, giving 9-1-1 managers easy, direct access to critical 9-1-1 call history. The map-based view of data offers intuitive insight into 9-1-1 call history and works on all call-taking platforms. Simple to create, read, and interpret trend reports provide data and logic to support staffing and funding decisions. Reports show call volume and activity by workstation, shift, hour, day, and week.

Visit the Rave Mobile Safety booth at IACP 2016, #3751. For more information, visit www.ravemobilesafety.com.

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IACP Membership Application

International Association of Chiefs of Police
P.O. Box 62564
Baltimore, MD 21264-2564
Phone: 1-800-THE IACP; 703-836-6767; Fax: 703-836-4543

DO NOT USE

(*Please Print*)

Name: _____ _____ _____
First Middle Initial Last

Title/Rank: _____

Agency/Business Name: _____

Business Address: _____

City, State, Zip, Country: _____

Residence Address: _____

City, State, Zip, Country: _____

Business Phone: _____ Fax: _____

Send mail to my ❑ Business ❑ Residence Address

E-mail: _____

Website: _____

Have you previously been a member of IACP? ❑ Yes ❑ No

Date of Birth: (MM/DD/Year) _____/_____/_____ I am a sworn officer. ❑ Yes ❑ No

Number of sworn officers in your agency (*if applicable*) ❑ a. 1 - 5 ❑ b. 6 - 15 ❑ c. 16 - 25
❑ d. 26 - 49 ❑ e. 50 - 99 ❑ f. 100 - 249 ❑ g. 250 - 499 ❑ h. 500 - 999 ❑ i. 1000+

Approximate pop. served (*if applicable*) ❑ a. under 2,500 ❑ b. 2,500 - 9,999 ❑ c. 10,000 - 49,999
❑ d. 50,000 - 99,999 ❑ e. 100,000 - 249,999 ❑ f. 250,000 - 499,999 ❑ g. 500,000 +

Education (*Highest Degree*): _____

Date elected or appointed to present position: _____

Law enforcement experience (*with approx. dates*): _____

_____

❑ I have an Active Member Sponsor – Their name is: _____

❑ I do not have an Active Member Sponsor. The IACP Executive Director will sponsor new members without a sponsor. Please allow for additional time in processing your application.

Amount to be charged _____ (*U.S. dollars only*—Membership includes subscription to *Police Chief* magazine valued at $30. Student members receive online *Police Chief* magazine access.)

I have enclosed: ❑ Purchase order ❑ Personal check/money order ❑ Agency check
Charge to: ❑ MasterCard ❑ VISA ❑ American Express ❑ Discover

Cardholder's Name: _____

Card #: _____ Exp. Date: _____/_____

Cardholder's Billing Address: _____

Signature: _____

All memberships expire December 31 of each calendar year. Applications received after August 1 will expire the following year. Return completed application via mail, fax (703-836-4543) or email (membership@theiacp.org). Questions? Contact Membership at 800-THE-IACP.

Membership Categories

Information on membership categories, benefits, and eligibility can be found on the IACP web site **www.theiacp.org/membership**

❑ Active Member $150
(sworn command level)

Associate Member:

❑ General $150

❑ Academic $150

❑ Service Provider $250

❑ Sworn Officer—Leader of Tomorrow $75
(sworn non-command level)

❑ Student—Leader of Tomorrow
(full-time students/not employed in a full-time position)
University name: $30

_____

Optional Section Memberships:
(IACP Membership is a prerequisite for Section Membership)

❑ Capitol Police Section $30

❑ Defense Chiefs of Police Section $15

❑ Drug Recognition Expert (DRE) $25

❑ Indian Country Law Enforcement $25

❑ Intl Managers Police Academy & College Training $25

❑ Law Enforcement Information Management (LEIM) $25

❑ Legal Officers $35

❑ Mid-Sized Agencies Section $50

❑ Police Foundations Section $20

❑ Police Physicians $35

❑ Police Psychological Services—initial processing fee $50

❑ Public Information Officers $15

❑ Public Transit Police No Charge

❑ Railroad Police No Charge

❑ Retired Chiefs No Charge

❑ Smaller Department $20

❑ S & P Police Alumni Section No Charge

❑ S & P Police Academy Directors No Charge

❑ S & P Police Planning Officers No Charge

❑ University/College Police—Initial Member $50

❑ University/College Police—Additional members $15

IACP Section Membership Application

IACP Membership is a prerequisite for Section Membership.

Name: _____ (*Please Print*)

Title/Rank: _____

Agency: _____

Business Address: _____

City, State, Zip, Country: _____

Business Phone: _____ Fax: _____

E-mail: _____

Website: _____

IACP Membership #: _____

Signature: _____

- ❑ Capitol Police Section $30
- ❑ Defense Chiefs of Police Section $15
- ❑ Drug Recognition Expert Section $25
- ❑ Indian Country Law Enforcement Section $25
- ❑ International Managers of Police Academy and College Training Section $25
- ❑ Law Enforcement Information Management Section $25
- ❑ Legal Officers Section $35
- ❑ Mid-Size Agencies Section $50
- ❑ Police Foundations Section $20
- ❑ Police Physicians Section $35
- ❑ Police Psychological Services Section ..... (initial processing fee) $50
  (Must be a psychologist. Upon admission to the section, $50 processing fee applies to annual dues)
- ❑ Public Information Officers Section $15
- ❑ Public Transit Police Section ..... No charge
- ❑ Railroad Police Section ..... No charge
- ❑ Retired Chiefs of Police Section ..... No charge
- ❑ Smaller Department Section $20
- ❑ State and Provincial Police Alumni Section ..... No charge
- ❑ State and Provincial Police Academy Directors Section ..... No charge
- ❑ State and Provincial Police Planning Officers Section ..... No charge
- ❑ University/College Police Section – Initial Member $50
- ❑ University/College Police Section – Each additional member from same institution $15

Payment (*Choose only one of the following methods of payment.*) Amount to be charged _____

1. Pay by Credit Card: ❑ Visa ❑ MasterCard ❑ American Express ❑ Discover

Card #: _____ Exp. Date: ____/____

Cardholder's Name: _____

Cardholder's Billing Address: _____

Signature: _____

Fax completed form with credit card authorization to 703/836-4543. Do not mail and fax form as charges will be duplicated.

2. Pay by Check: Make checks payable to IACP (U.S. dollars only) and mail full payment (no cash) with completed form to: IACP: Membership, P.O. Box 62564, Baltimore, MD 21264-2564

3. Pay by Purchase Order: Mail purchase order along with form to: IACP: Membership, 44 Canal Center Plaza, Suite 200, Alexandria, VA 22314-2357

Capitol Police Section
Promotes exchange of information and develops standards for increasing the efficiency and capabilities of each law enforcement agency that provides service to our critical assets. Open to individuals who are now, or have been, engaged in or responsible for providing police services at a national or state/providence State House.

Defense Chiefs of Police Section
Promotes exchange of ideas and specific information and procedures for law enforcement organizations providing police and security services within military services and defense agencies. Open to individuals who are now or have been engaged in or responsible for providing law enforcement services within an IACP member nation's military services or defense establishment.

Drug Recognition Expert Section
Provides a unique opportunity for those professionals already associated with drug recognition to share common management, training, administrative and practicing concerns.

Indian Country Law Enforcement Section
Promotes the professional status of those engaged inproviding police services to Indian Country.

International Managers of Police Academy and College Training Section
Facilitates the exchange of ideas, procedures, and specific information for the professional leadership and management of education and training within police agencies, as well as enhancing the quality of law enforcement and policing at the international level through education and training.

Law Enforcement Information Management Section
Facilitates the exchange of information among those individuals responsible for computers, records, communications or other support-service-related functions.

Legal Officers Section
Assists in the establishment of professional standards, assistance and cooperation among attorneys who provide legal advice or representation to law enforcement administrators.

Mid-Size Agencies Section
Dedicated to providing a voice within the IACP for chiefs of jurisdictions with a population between 50,000 and 500,000, as well as a forum for these leaders to share the unique challenges and opportunities in policing that emerge from departments of this size. The section is further committed to embracing and leveraging the special capacity and flexibility of these agencies to innovate and drive progressive change within our profession with the goal of better policing our communities.

Police Foundations Section
Promotes networking and the exchange of ideas and best practices among police executives and police foundation professionals.

Police Physicians Section
Facilitates the exchange of information among police medical practitioners, promotes effective police medical practices, and acts as a resource of professional expertise to the association.

Police Psychological Services Section
Develops professional standards, facilitates the exchange of information among police psychological service providers, and acts as a resource of professional expertise to the association.

Public Information Officers Section
Promotes the exchange of information and training among officers who are responsible for planning and implementing effective public information programs.

Public Transit Police Section
Promotes meaningful relationships between police executives and cooperative efforts in the implementation of effective police matters and the achievement of an accepted professional status of the police service. Includedin this section are gaming enforcement, public transportation, housing authority, airport police, seaport police and natural resources.

Railroad Police Section
Explores ways to improve the services of those responsible for ensuring the safety and security of people and goods traveling by rail.

Retired Chiefs of Police Section
Open to IACP members who at the time of their retirement were active members as prescribed in Article II, Section 2 of the IACP Constitution. For the purpose of this section, retirement shall be defined as the voluntary and honorable separation from a position in active and regular police duties because of age, physical disability, or retirement on pension from the agency of employment.

Smaller Department Section
Serves as the collective voice of law enforcement agencies with fewer than 50 officers or serves populations under 50,000. The Section addresses the unique needs of these agencies, provides a forum for the exchange of information, and advocates on behalf of these agencies with policy makers. Section Members are also granted affiliate membership in the IACP's Division of State Associations of Chiefs of Police.

State and Provincial Police Academy Directors Section
Membership is open to individuals currently serving as directors of state and provincial law enforcement training facilities. The section meets annually to exchange information and disseminate proven ideas, plans, and methodologies among members and other organizations interested in enhancing law enforcment training.

State and Provincial Police Planning Officers Section
Open to sworn and civilian members of planning and research units of state and provincial law enforcement agencies, this section meets in the summer of each year to share information concerning trends and practices in law enforcement. The section maintains a database of current projects in progress, as well as a compendium of information on the status of state and provincial law enforcement agencies.

State and Provincial Police Alumni Section
Open to any member or previous member of the IACP who is, or was, affiliated with an agency belonging to the State and Provincial Police Division and who was of command (lieutenant or above) rank at the time of retirement.

University/College Police Section
Provides coordinated assistance in implementing effective university policing practices and achieving an accepted professional status.

NEW MEMBERS

This posting of new member applications is published pursuant to the provisions of the IACP Constitution & Rules. If any active member in good standing objects to any application, written notice of the objection must be submitted to the executive director within 60 days of publication. The application in question shall then be submitted to the Executive Committee and shall require the affirmative vote of two-thirds of the members of that committee for admission of the applicant.

The full membership listing can be found in the members-only area of the IACP website (www.theiacp.org).

Contact information for all members can be found online in the members-only IACP Membership Directory.

***Associate Members**
All other listings are active members.

ALGERIA

Algiers
Abbad, Benyamina, Chief Superintendent of Police, General Directorate of National Security
Chakour, Mohamed, Police Controller, General Directorate of National Security
Djaidjai, Salim, Police Controller, General Directorate of National Security
Ferragh, Ali, Police Controller, General Directorate of National Security

ARUBA

Oranjestad
Kramers, Richard A, Coordinator K 9 Unit, Korps Politie Aruba

AUSTRALIA

Coomera/QLD
*Henry, Doneena, Sergeant, Queensland Police Service

Docklands/VCT
Glowaski, Michael, Superintendent, Victoria Police Force
Marinis, John, Inspector, Victoria Police Force

BAHAMAS

Freepor
*Boyd, Dominico, Corporal, Royal Bahamas Police Force

Nassau
*Ranger, Nathalie, Corporal, Royal Bahamas Police Force
*Sands, Pamela, Constable, Royal Bahamas Police Force

BENIN

Cotonou
Lalou, Urbain, Commissaire Divisionnaire de Police, Directour Central De La Police Judiciaire
*Tinongbe, Jean Luc, Program Assistant, U.S. Dept of Justice ICITAP

BERMUDA

Hamilton
Daniels, Antoine E, Assistant Commissioner of Police, Bermuda Police Service

CANADA

British Columbia

Ladysmith
*Sampson, Brian J, Impaired Driving Coordinator, RCMP

New Westminster
Eviston, Edward, Deputy Chief Officer, Metro Vancouver Transit Police

Parksville
*Obodzinski, Andrzej J, Constable, RCMP

Surre
*Dadwal, Paul, Staff Sergeant, RCMP

Vancouver
*Livingston, John, Director, Skyefish
Wiebe, Daryl, Superintendent Investigative Support, Vancouver Police Dept
*Rice, Kris J, Detective Sergeant, Victoria Police Dept

New Brunswick

Saint John
*Jones, Travis W, Constable, Saint John Police Force

Summerville
*Wilson, Randy, Senior Regional Coordinator, 3SI Security

Newfoundland and Labrador

Holyrood
*Austin, Janet S, DRE & Impaired Driving Coordinator, RCMP

Ontario

Aurora
*Holland, Reed C, Police Constable, York Regional Police

Cambridge
*Chen, Junyan David, Constable, Waterloo Regional Police Service

London
*Huey, Laura, Director, Canadian Society of Evidence Based Policing

Orillia
Hunter, Kevin, Superintendent, Ontario Provincial Police
*Wallbank, David, Sergeant, Ontario Provincial Police

Ottawa
*Smith, Amber, Corporal, RCMP
Tremblay, Lucie, Deputy Chief of Police, VIA Rail Canada

Toronto
*Khazanski, David, CEO, Inkas Armored Vehicle Manufacturing

GEORGIA

Tbilisi
Aladashvili, Giorgi, Director, Tbilisi Police Dept
Dzagnidze, Mikheil, Chief, Central Criminal Police Dept
Mgebrishvili, Giorgi, Minister, Ministry of Internal Affairs of Georgia
Razmadze, Goga, Chief, Patrol Police Dept
Tsertsvadze, Koba, Chief, Shida Kartli Police Dept

INDIA

Kolkata
*Bandyopadhyay, Manabendra Nath, Committee Member, Anti Corruption and Vigilance Committee

IRAQ

Sulaymanyah
*Ebrahim, Zhilwan, Officer, Sulaymanyah Riot Police

IRELAND

Monaghan
Cunningham, Noel, Superintendent, An Garda Siochana

LIBERIA

Monrovia
*Warner, Bennetta Holder, Assistant Coordinator for Planning & Training, Liberia Female Law Enforcement Assn

MALI

Bamako
Dembele, N'Faly B, Director of Human Resources, National Police
Infahi, Moussa A G, National Director, National Police
Sidibe, Satigue M, National Gendarmerie Director, National Gendarmerie

MALTA

Florina
Spiteri, Mario, Assistant Commissioner, Malta Police Force

MARSHALL ISLANDS

Majuro
Lathrop, Willard, Sheriff, Majuro Atoll Local Police

MEXICO

Mexico City
*Copil, Jose Luis, Project Specialist, U.S. Dept of State INL
*Paskett, Darrell, Program Manager, U.S. Dept of State INL

Queretaro
Contreras Alvarez, Miguel, Maestro en Gestion Publica Aplicada, Gobierno Del Estados De Queretaro

Echeverria Cornejo, Alejandro, Licenciado en Derecho, Gobierno Del Estado De Queretaro
Granados Torres, Juan Martin, Licenciatura en Devecho, Gobierno Del Estrado De Queretaro

NIGERIA

Abuja
Chongs, Wan Mantu, Chief Superintendent of Police, Nigeria Police Force
Omaka, Udodinma, Superintendent of Police, Nigeria Police Force
Ozonna, Chidozie, Assistant Superintendent of Police, Nigeria Police Force
Salisu, Ismaila Muhammad, Deputy Superintendent of Police, Nigeria Police Force
Sodimu, Babatunde Moses, Chief Superintendent of Police, Nigeria Police Force

Akure
*Dele, Okonta Eghosa, Police Officer, Nigeria Police Force

Ikeja
*Adedayo, Adetoro M, Sergeant, Nigeria Police Force
Odion Peter, Omofuegbe, Patrol Team Leader, Nigeria Police Force
*Azeez, Olanrewaju, Inspector of Police, Nigeria Police Force
Dauda, Yusuf, Assistant Superintendent of Police, Nigeria Police Force

Lagos
*Azeez, Funke, Inspector of Police, Nigeria Police Force
*Ogwuewa, Stella, Member, Police Community Relations Committee
Oyeniyi Blessing, Famuyibo, Assistant Superintendent of Police, Nigeria Police Force

Lokoja
Muhammad, Muhammad Sani, Chief Superintendent of Police, Nigeria Police Force

Obalende
*Awolola, Adeyemi Isiaka, Inspector of Police, Nigeria Police Force
Idoko, John, Deputy Superintendent of Police, Nigeria Police Force
*Madu, Adimchi Uloma, Inspector of Police, Nigeria Police Force
*Olaonipekun, Dauda Adewale, Inspector of Police, Nigeria Police Force
*Sangodeye, Omolola Oyedeji, Police Officer, Nigeria Police Force

Port Harcourt
*Kemakolam, Eunan Ugochukwu, Inspector of Police, Nigeria Police Force

Sango/Ota
*Olofin, Seun, Inspector of Police, Nigeria Police Force

Umuahia
Onwuka, Florence N, Assistant Superintendent of Police, Nigeria Police Force

PHILIPPINES

Quezon City
Obusan, Roel B, Police Chief Superintendent, Philippine National Police
Quinsay, Nestor F, Police Chief Superintendent, Philippine National Police
Tabian, Valfrie G, Police Chief Superintendent, Philippine National Police

SAUDI ARABIA

Dhahran
*Alsalem, Tariq, Security Supervisor, Saudi Aramco

TAIWAN

New Taipei City
Tsai, Ching Hsiang, Director General, Investigation Bureau Ministry of Justice

Taipei City
Guan, Jehng Jer, Deputy Director General, National Police Agency
*Kuo, Cheng Hsien, Sergeant, Taipei City Police Dept
Li, Li Juan, Senior Specialist, Taipei City Police Dept
Lin, Miao Ling, Chief of Foreign Affairs Division, Taipei City Police Dept
Yang, Chao Yuan, Executive Officer, National Police Agency
Huang, Ruth, Subsection Chief, Aviation Police Bureau
Liao, May, Major, Aviation Police Bureau

TAJIKISTAN

Dushanbe
Ansori, Sarvat, Program Manager, U.S. Dept of State INL
Bobonazarzoda, Ali, Colonel, Ministry of Internal Affairs
Green, Christopher, Director INL, U.S. Dept of State
Makhmadaliev, Faizudin, Lieutenant Colonel, Ministry of Internal Affairs
Nazarov, Turabeg, Major General, Drug Control Agency
Nazarshoev, Kishvar, Program Manager, U.S. Dept of State INL
Samad, Zafar, Colonel, Ministry of Internal Affairs
Saydakhmedova, Umeda, Captain, Ministry of Internal Affairs
Umarzoda, Ikrom, Major General, Ministry of Internal Affairs

UNITED STATES

Alabama

Prattville
*Kendrick, Brad, Executive Director, Alabama Assn of Chiefs of Police

Alaska

Anchorage
*Henry, Michael R, Sergeant, Alaska State Troopers
Monegan, Walt, Commissioner, Alaska Dept of Public Safety

Soldotna
*Wertanen, Matthew, Trooper, Alaska State Troopers

Wasilla
*Ridge, Donald R, Police Officer II, Wasilla Police Dept

Arizona

Avondale
Lopez, Varney, Lieutenant, Avondale Police Dept
*Martinez, Kimberly, Senior Management Assistant, Avondale Police Dept

Gilbert
White, Hugh, Lieutenant, Gilbert Police Dept

Glendale
*Campbell, Paul A, Police Officer, Glendale Police Dept
St John, Richard B, Interim Chief of Police, Glendale Police Dept

Goodyear
*Kutis, Lisa, Public Information Officer, Goodyear Police Dept

Marana
DeStefano, John, Lieutenant, Marana Police Dept

Oro Valley
Larter, Jason, Commander, Oro Valley Police Dept
LeSuer, Aaron, Commander, Oro Valley Police Dept

Phoenix
*Haywood, Alan, Sergeant, Arizona Dept of Public Safety
Potts, Darius, Inspector, Arizona Dept of Public Safety
Smith, Aimee, Lieutenant, Phoenix Police Dept

Sedona
Wilcoxson, Lucas, Lieutenant, Sedona Police Dept

Tolleson
Grow, Jeffrey, Administrative Sergeant, Tolleson Police Dept

Tucson
Lopez, Jesus, Chief, Pima Co Sheriff's Dept
Radtke, Christopher, Chief Deputy, Pima Co Sheriff's Dept

Winslow
Sepi, Jim, Lieutenant, Winslow Police Dept

Arkansas

Bryant
*Crowson, Todd, Sergeant, Bryant Police Dept
Kizer, Mark, Chief of Police, Bryant Police Dept
Plouch, Joseph W, Captain, Bryant Police Dept

Conway
Tapley, William, Major, Conway Police Dept

Helena
Green, Virgil L, Chief of Police, Helena West Helena Spencer Police Dept

Jacksonville
*Wright, Ryan D, Sergeant, Jacksonville Police Dept

Jonesboro
*Martin, George E, Sergeant, Jonesboro Police Dept

Little Rock
*Thomas, Matthew R, Police Officer, Little Rock Police Dept

Trumann
*Hooton, Justin B, Corporal, Trumann Police Dept

Armed Forces Americas

DPO
Archibald, Joshua, INL Deputy Director, U.S. Dept of State

California

Barstow
Espinoza, Andrew, Captain, Barstow Police Dept

Berkeley
Bernstein, Alison, PRC Commissioner, City of Berkeley
Reece, David K, Lieutenant, Berkeley Police Dept
*Rego, Steve, Officer, Berkeley Police Dept
Schofield, Kevin, Lieutenant, Berkeley Police Dept

Boulevard
Seelinger, David, Deputy Chief, Manzanita Tribal Police Dept

Calabasas
*Flacco, Nicholas, Lead Systems Engineer, Intrinsics Inc

Camp Pendleton
Collinsworth, Robert, Police Captain, Marine Corps Police Dept

Fremont
Quimson, Norberto, Lieutenant, Fremont Police Dept

French Camp
Hood, James, Captain, San Joaquin Co Sheriff's Office

Fullerton
*Blanpied, Jesse, Corporal/Motor Officer, California State Univ Fullerton Police Dept
*Bridgewaters, Karlton J, Officer, California State Univ Fullerton Police

Glendale
*Cheng, Eric, Lead Software Engineer, Intrinsics Inc

Gold River
*Pritchard, Jean, Psychologist, Cordico

Grass Valley
Matteoni, Joe, Lieutenant, Grass Valley Police Dept

Hawthorne
Catano, Julian, Captain, Hawthorne Police Dept
*Cognac, Christopher, Sergeant, Hawthorne Police Dept

Irvine
Kent, Michael, Lieutenant, Irvine Police Dept

Lake Forest
Robertson, Kevin, Director of Security, Saddleback Church

Lancaster
*Wupperfeld, Josh, Officer, California Hwy Patrol

Lemoore
Smith, Darrell, Chief of Police, Lemoore Police Dept

Los Angeles
*Cutchlow, Adonis L, Sergeant, Los Angeles World Airports Police
*D'Ingillo, Piero, Law Enforcement Psychologist, Los Angeles Co Sheriff's Dept
Graham, Donald, Captain, Los Angeles Police Dept
*Ingemunson, Gary, Independent Counsel, Los Angeles Police Protective League
*Johnson, Matthew, Commissioner, Los Angeles Board of Police Commissioners
Kehoe, Shawn, Lieutenant, Los Angeles Co Sheriff's Dept
*Lustig, Jason, Deputy District Attorney, Los Angeles Co District Attorney's Office
Martinez, Richard A, Lieutenant, Los Angeles Co Sheriff's Dept
*Monteiro, Yvette, Police Psychologist, Los Angeles Police Dept
*Nguyen, Long H, Officer, Los Angeles World Airports Police
*Perez, Erik, Police Officer II, Los Angeles World Airports Police
Rodriguez, Robert D, Assistant Special Agent in Charge, U.S. Secret Service
*Sardar, Kamaron J, DRE Coordinator, Los Angeles Police Dept
*Snyder, Julie, Police Psychologist, Los Angeles Police Dept
*Sossikian, Masis V, Lieutenant, Los Angeles World Airports Police
Yu, Florence Eva, Police Special Investigator, Los Angeles Police Dept OIG

Monrovia
Ortlund, Nels, Captain, Monrovia Police Dept
Sanvictores, Alan, Captain, Monrovia Police Dept

Monterey
*Welch, Jeffrey, Detective, Monterey Police Dept

Monterey Park
*Dobine, Stacie, Deputy, Los Angeles Co Sheriff's Dept

Mountain View
*Shueh, Cary, Sergeant, Mountain View Police Dept

National City
Tellez, Jose, Captain, National City Police Dept

Newport Beach
*Hume, William M, Police Officer, Newport Beach Police Dept

Norwalk
*Kelley, Kevin, Deputy Sheriff, Los Angeles Co Sheriff's Dept

Oceanside
Rodriguez, John, Police Lieutenant, U.S. Marine Corps Police Dept

Pasadena
Sell, Marie, Lieutenant, Pasadena Police Dept

Rancho Cucamonga
Gardhouse, Laura, Commander, California Division of Investigations
*Price, Robert, Professor, Chaffey College

Rialto
De Anda, Randy, Chief of Police, Rialto Police Dept
Wilson, William, Captain, Rialto Police Dept

Rocklin
*Howard, Sharon P, Licensed Psychologist, Sharon P Howard PhD

Sacramento
Browne, Avery A, Assistant Commissioner, California Hwy Patrol
Coopwood, Marc, Captain, Sacramento Police Dept
Gardner, Kevin, Captain, Sacramento Police Dept
Louie, Brian A, Deputy Chief of Police, Sacramento Police Dept
*Melancon, Darnella, Officer, California Hwy Patrol
Morgado, Jason, Lieutenant, Sacramento Police Dept
Silsbee, Scott, Assistant Commissioner, California Hwy Patrol

Salinas
Gomez, Henry, Commander, Salinas Police Dept
Shaw, Dave, Deputy Chief of Police, Salinas Police Dept

San Bernardino
Browne, William M, Lieutenant, San Bernardino Co Sheriff's Dept

San Carlos
*Maloney, Tom, CEO, Maloney & Associates LLC

San Diego
Cargel, Joseph, Commander, San Diego Co District Attorney's Office
Cuervo, Jose, Commander, San Diego Co District Attorney's Office
Johnson, Keith A, Assistant Chief, U.S. Marshals Service
*Ledezma, Jamie, Chief Deputy/City Attorney, San Diego City Attorney's Office
*Martin, James, CEO, Public Safety Brands
*Miller, Kristina, Police Dispatch Supervisor, San Diego Police Dept
O'Deane, Matthew, Commander, San Diego Co District Attorney's Office
Ramirez, Francisco, Commander, San Diego Co District Attorney's Office
Rudesill, Barbara, Commander, San Diego Co District Attorney's Office

San Francisco
*Davydiak, Leanna Maria, Attorney/Security Professional, Law Offices of Davydiak & Rapagnani
*Fritsche, David, CTO, Secured Communications LLC
*Lazarus, Bruce, Senior VP Operations, Secured Communications LLC
*Wilder, Lonny, Law Enforcement Advisory Council, Secured Communications LLC
*Wilson, Robert, CEO, Secured Communications LLC

San Jose
*Dworak, Susan F, CEO, Real Identities LLC
*Marshall, Jim, Sales Executive, LILEE Systems

San Luis Obispo
Millard, Bryan, Chief of Police, Cuesta College Police Dept

San Marcos
*Glover, Karen, Professor, California State Univ

San Mateo
Peruzzaro, David, Captain, San Mateo Police Dept
Ratcliffe, Jack, Deputy Chief of Police, San Mateo Police Dept

San Pedro
Hayden, Anita, Lieutenant, Los Angeles Port Police

Santa Ana
*Lopez, Jorge A, Corporal, Santa Ana Police Dept

Santa Barbara
Camarena, Juan, Acting Lieutenant, Santa Barbara Co Sheriff's Office
*Hill, Shawn L, Sergeant, Santa Barbara Police Dept
Hsueh, Eddie, Lieutenant, Santa Barbara Co Sheriff's Office
Luhnow, Lori, Chief of Police, Santa Barbara Police Dept
Turner, Clay, Lieutenant, Santa Barbara Co Sheriff's Office

Torrance
*Bruzzone, Daniel, Clinical Director, Accent On Wellness Psychology Associates Inc

Vacaville
Schmutzler, Ian, Captain, Vacaville Police Dept

Ventura
Aguilar, Donald, Captain, Ventura Co Sheriff's Office
*Regan, Andrea L, Senior Deputy, Ventura Co Sheriff's Office

Visalia
Phipps, Perry, Captain, Visalia Police Dept

West Sacramento
*Alvarez, Manual, Executive Director, California Commission on POST
*Horrocks, Richard S, Officer, California Hwy Patrol
*Martens, Gary, Officer, California Hwy Patrol

Winters
Miller, John, Chief of Police, Winters Police Dept

Woodland Hills
Starling, Johnny, Captain, California Hwy Patrol

Colorado

Alamosa
*Conrad, Doug, Captain, Colorado State Patrol
Dingfelder, George, Major, Colorado State Patrol

Aurora
Wilson, Vanessa, Division Chief, Aurora Police Dept

Avon
*Baldwin, Toby, Officer, Avon Police Dept
*Burden, Jane, Transit Director, Avon Police Dept
*Cosper, Coby, Sergeant, Avon Police Dept
*Gray, Randy, Sergeant, Avon Police Dept
*Holmstrom, Jeremy A, Detective, Avon Police Dept

Boulder
*Leak, H Clay, Sergeant, Boulder Co Sheriff's Office
*Simenson, Jeremy, Police Officer, Univ of Colorado Police Dept
Wagner, Michael R, Commander, Boulder Co Sheriff's Office

Broomfield
*George, Mark T, Deputy Ret, Boulder Co Sheriff's Office

Centennial
*Baggett, Beau A, Deputy Sheriff, Arapahoe Co Sheriff's Office

Colorado Springs
Abbink, Darrin, Lieutenant, Colorado Springs Police Dept

Denver
*Blea, John S, Patrolman, Denver Police Dept
Cohn, Jeffrey, Deputy Chief of Police, Univ of Colorado Denver Police Dept

Eagle
*Edstrom, David C, Deputy, Eagle Co Sheriff's Office
*Veldheer, Aaron D, Detective, Eagle Co Sheriff's Office

Fort Collins
*Robles, Lisa, Records Manager, Fort Collins Police Services
*Sharp, Jeremiah W, Trooper, Colorado State Patrol

Fountain
*Klinge, Donald, Police Officer, Fountain Police Dept

Glenwood Springs
*Bourlet, Raynor, Trooper, Colorado State Patrol
*Conner, Kevin, Trooper, Colorado State Patrol
*Crossno, Raymond, Trooper, Colorado State Patrol
*Evans, Benjamin, Trooper, Colorado State Patrol
*Gouker, Joshua, Trooper, Colorado State Patrol
*Manning, Greg, Corporal, Colorado State Patrol
*Pocalyko, Kevin, Trooper, Colorado State Patrol
*Remillard, Collin, Trooper, Colorado State Patrol
*Rod, Jeffrey, Trooper, Colorado State Patrol
*Swale, Shauna, Corporal, Colorado State Patrol
*Turner, Nathan, Trooper, Colorado State Patrol

Golden
*Coburn, Kyle R, Deputy Sheriff, Jefferson Co Sheriff's Office

Greeley
*Grimm, Nathaniel D, Trooper, Colorado State Patrol

Lakewood
*Roll, Kelly, Director of Marketing, Colorado State Patrol

Littleton
Eyman, Michael, Commander, Littleton Police Dept

Manitou Springs
Warden, Melissa, Administrative Sergeant, Manitou Springs Police Dept

Connecticut

Groton
Gately, Paul, Deputy Chief of Police, Town of Groton Police Dept

New Britain
*McColgan, James J, Police Officer, New Britain Police Dept

North Canaan
Baldwin, William R, Lieutenant/Commanding Officer, Connecticut State Police

Norwalk
*Shaughnessy, Mary Beth, Director, Reed Exhibitions

Suffield
Brown, Richard D, Deputy Chief of Police, Suffield Police Dept
Riello, Anthony J, Superintendent of Police Services, Suffield Police Dept

Uncasville
*Saffioti, Addison P, Patrolman, Montville Police Dept

West Haven
Karajanis, John, Chief of Police, West Haven Police Dept

Wilton
*Tornello, Anna R, Patrol Officer, Wilton Police Dept

Delaware

Camden
*Bryant, Roy K, Master Corporal, Delaware State Police

Dover
Davis, Britt, Lieutenant Special Operations, Delaware Capitol Police
*Griffin, Jennifer, Captain, Delaware State Police
Hudson, Robert A, Administrative Officer/Major, Delaware State Police

Felton
*Swan, Christopher R, Sergeant, Felton Police Dept

New Castle
*Warwick, James P, Associate Professor/Chair, Wilmington Univ Criminal Justice Program

Newark
*Rubin, Andrew S, Sergeant, Newark Police Dept

Wilmington
Quinn, Ian, Director, Barclays Global Security

District of Columbia

Washington
Armstrong, Jennifer, Chief Inspector, U.S. Marshals Service
Cisse, Oumar M, Assistant Program Manager, U.S. Dept of Justice ICITAP
Dillinger, Michael, Assistant Special Agent in Charge, U.S. Dept of Justice
Ebert, Brian, Special Agent in Charge WFO, U.S. Secret Service
*Gallagher, Kristin, Sergeant, Supreme Court of the U.S.
Lan, Chia Jui, Legal Attache, Investigation Bureau Ministry of Justice
Lauwers, Daniel, Chief Commissioner of Police, Belgian Federal Police
Maillet, Gilles, Senior Liaison Officer USA and Bermuda, RCMP
*Marvin, Scott S, Chief, U.S. Dept of Homeland Security
*McCreesh, Patrick, Senior Associate, Booz Allen Hamilton
Ovcharov, Georgi, Police Liaison Officer, Embassy of Bulgaria
Rowe, Ronald, Special Agent in Charge, U.S. Secret Service
Visconti, Jay, Assistant Chief, U.S. Border Patrol/DHS

Florida

Bal Harbour
Flowers, Raleigh, Lieutenant, Bal Harbour Police Dept

Davie
Moore, Richard A, Captain, Davie Police Dept

Deerfield Beach
Schnakenberg, Robert J, Chief/Captain, Broward Co Sheriff's Office

DeFuniak Springs
Fannin, Jimmy, Captain, Walton Co Sheriff's Office

Delray Beach
*Kitzerow, Matthew, Officer, Delray Beach Police Dept

Fort Lauderdale
*Shannon, Earl, Project Founder, Project Peacekeeper
Shults, Kevin, Major, Broward Co Sheriff's Office

Jacksonville
*Edmonds, Darrell B, Detective, Jacksonville Sheriff's Office

Miami
*Colon, Jose G, Senior Sergeant, Miami Police Dept
Shapira, Ari C, Assistant Special Agent in Charge, ATF/Justice

Miami Beach
Bornstein, Larry, Lieutenant, Miami Beach Police Dept
Pfrogner, Mildred, Captain, Miami Beach Police Dept
*Schwartz, Shari, Program Chair Criminal Justice, Ashford Univ

Miramar
Patters, Rachel, Captain, Miramar Police Dept

Ocala
*Wright, Daniel E, Police Officer, Ocala Police Dept

Orlando
Doret, Gerard H, Special Agent in Charge, U.S. Secret Service
Gigicos, Christine, Lieutenant, Univ of Central Florida Police Dept
*Imparato, Frank, Police Officer, Univ of Central Florida Police Dept
Mangan, James, Lieutenant, Univ of Central Florida Police Dept
*Miller, Anastasia, Instructor, Univ of Central Florida

Palm Beach Gardens
*Hanton, Melinda F, Police Officer/Investigator, Palm Beach Gardens Police Dept
*Rigney, Bethany L, Sergeant, Palm Beach Gardens Police Dept

Pembroke Pines
*Curtiss, Darryl, Sergeant, Pembroke Pines Police Dept

Sarasota
Walsh, John, Captain, Sarasota Co Sheriff's Office

Tallahassee
*Binder, Carolyn, Senior Research Associate Manager, Institute for Intergovernmental Research
Jones, Jason L, General Counsel, Florida Dept of Law Enforcement
*Miller, Michelle, Senior Research Associate, Institute for Intergovernmental Research

Tampa
*Kuettner, Michael, Sergeant, Hillsborough Co Sheriff's Office
*Palm, Peter, Corporal, Hillsborough Co Sheriff's Office
Powers, Billy, Special Agent in Charge, U.S. Secret Service

Georgia

Atlanta
Cavazos, Genaro X, Deputy Regional Director, U.S. Dept of Homeland Security
Moore Jackson, Margaret, Special Agent in Charge, Social Security Administration OIG
Moreno, Edgar, Global Team Leader, The Coca Cola Co
Reed, Shirley A, Deputy Regional Director, U.S. Dept of Homeland Security
*Wilkes, Eric B, Sergeant, Georgia Dept of Public Safety
Yates, William, Major, Fulton Co Police Dept

Cartersville
Sanford, Grady, Captain, Georgia State Patrol

Columbus
Drew, Rus, Chief of Police, Columbus State Univ Police Dept

Cordele
*Herrick, Kris, Deputy First Class, Crisp Co Sheriff's Office

Decatur
*Ammons, Natalie, ASCIA Conference Coordinator, Georgia Bureau of Investigation

East Point
Chandler, Clifford, Captain, East Point Police Dept
Popham, Russell, Major, East Point Police Dept

Glynco
Calvert, Wolfgang, Chief Inspector, U.S. Marshals Service

Marietta
Sampson, Robert C, Major, Cobb Co Police Dept

Sandy Springs
*Barkley, Shane, Sergeant, Sandy Springs Police Dept
*Morgan, William, Officer, Sandy Springs Police Dept
*Smith, Krichelle, Quartermaster, Sandy Springs Police Dept

Savannah
Hathaway, John D, Area Commander, Federal Protective Service/DHS
*Pugh, Charles, Sergeant, Savannah Chatham Metropolitan Police Dept

Tucker
Medlin, Craig, Major, Dekalb Co Police Dept

Valdosta
Rowe, Charles Alan, Chief of Police, Valdosta State Univ Police Dept

Waleska
*Vargas, Paul, Student, Reinhardt Univ

Hawaii

Honolulu
Leidwinger, Douglas, Special Agent in Charge, U.S. Secret Service

Lihue
*Hanna, Shawn P, Police Officer, Kauai Police Dept

Idaho

Boise
Mulcahy, Scott M, Deputy Chief of Police, Boise Police Dept

Pocatello
*McClure, Brian A, Sergeant, Pocatello Police Dept

Rathdrum
McLean, Tomi S, Chief of Police, Rathdrum Police Dept

Illinois

Bloomington
Stanesa, Timothy C, Lieutenant, Bloomington Police Dept

Calumet City
Fletcher, Christopher, Chief of Police, Calumet City Police Dept

Carol Stream
*Mabbitt, Hilary, Patrol Officer, Carol Stream Police Dept

Chicago
*Emery, Ellen, Partner, Ancel Glink
*Hurt, Gloria, Deputy/Correctional Officer, Cook Co Dept of Corrections Division 11
*Villasenor, Roberto, Principal Consultant, 21CP Solutions LLC
Walsh, Patricia A., Chief of Police, Chicago State Univ

Highland Park
*Dragicevich, Travis J, Officer, Highland Park Police Dept

Indian Head Park
Cervenka, Robert, Chief of Police, Indian Head Park Police Dept

Lake Zurich
*Frost, Scott M, Police Officer Traffic Unit, Lake Zurich Police Dept

Lansing
Grutzius, Peter, Deputy Chief of Police, Lansing Police Dept

Lombard
*Kelly, Richard, Psychologist, First Responders Wellness Center

North Chicago
Nash, Valiza, Patrol Sergeant, North Chicago Police Dept

Oakbrook Terrace
Gibbons, James, Special Agent in Charge, U.S. Dept of Homeland Security ICE HSI

Robinson
*Strauch, Daniel J, Patrolman, Robinson Police Dept

Rockford
Ogden, Kevin, Assistant Deputy Chief of Police, Rockford Police Dept
Redd, Carla, Assistant Deputy Chief of Police, Rockford Police Dept

Scott Air Force Base
*Nugent, David, Officer, U.S. Air Force Security Forces

Indiana

Avon
*Wittl, Michael J, Sergeant, Avon Police Dept

Greensburg
Duckworth, Robert E, Lieutenant, Decatur Co Sheriff's Dept

Greenwood
*Overfield, Jason, Special Agent, CSX Police Dept

Hammond
Short, William A, Assistant Chief of Police, Hammond Police Dept

South Bend
Rynearson, Jeffrey A, Operations Division Chief, South Bend Police Dept

Iowa

Iowa City
*Batcheller, Paul J, Sergeant, Iowa City Police Dept

Kansas

Paola
Jenkins, Eric S, Lieutenant, Paola Police Dept

Sterling
*Sowers, Nicholas W, Police Officer, Sterling Police Dept

Kentucky

Bowling Green
*McMillin, Rodney L, Officer/PTO Supervisor, Western Kentucky Univ Police

Frankfort
Bradley, John, Lieutenant Colonel, Kentucky State Police
Payne, William Alex, Deputy Commissioner, Kentucky State Police

Hodgenville
Richardson, James, Sergeant, Hodgenville Police Dept

Jeffersontown
Hatmaker, Ken W, Chief of Police, Jefferstown Police Dept

Lexington
Palmer, Bernard, Deputy, Fayette Co Sheriff's Office
Sedlaczek, Melissa, Assistant Chief of Police, Lexington Police Dept

London
*Mitchell, Robert R, Senior Officer, Kentucky State Police

Louisville
*Corum, Jennifer, RTCC Director, Louisville Metro Police Dept
Ferretti, Richard, Special Agent in Charge, U.S. Secret Service
Johnson, Eric W, Lieutenant, Louisville Metro Police Dept

Louisiana

Baton Rouge
Edgar, Michael, Lieutenant, Louisiana State Police
*Lanoux, Randy D, Sergeant, Louisiana Dept of Wildlife & Fisheries

DeQuincy
Suchanek, Michael E, Chief of Police, DeQuincy Police Dept

La Place
Cassioppi, Troy, Traffic Division Commander, St John Parish Sheriff's Office

Lake Charles
Creel, Jennifer K, Lieutenant, Calcasieu Parish Sheriff's Office

Metairie
Valenti, Timothy D, Director, Gulf Coast HIDTA

New Orleans
Eckert, Doug, Commander, New Orleans Police Dept
Ganthier, Hans, Commander, New Orleans Police Dept
*Hawkins, Alexis, Sergeant, New Orleans Police Dept
Murphy, Daniel, Deputy Superintendent, New Orleans Police Dept
Randall, Kelvin, Assistant Chief of Police, Port of New Orleans Harbor Police
Ruffin, Ceasar, Commander, New Orleans Police Dept

Pineville
Weatherford, Donald R, Chief of Police, Pineville Police Dept

Shreveport
Crump, Alan, Interim Chief of Police, Shreveport Police Dept

Maine

Gorham
*Hatch, Theodore L, Patrolman, Gorham Police Dept

South Portland
*Libby, Robert A, Detective, South Portland Police Dept

Maryland

Baltimore
*Amey, Johnathan, Sergeant, Baltimore Police Dept
*Enko, Frank E, Officer First Class, Baltimore Co Police Dept
*Glover, Clifford, Attorney, Funk & Bolton PA
*Gregor, Michael S, Corporal, Maryland Transportation Authority Police
Henry, Rick, Chief Inspector, U.S. Marshals Service
Sturgis, Caroline, Chief Financial Officer, Baltimore Police Dept
*Thibodeau, Stephen W, Assistant Attorney General, Maryland Transportation Authority Police
Walker, Jennifer, Deputy Inspector General for Investigations, Social Security Administration OIG

Calverton
*Taylor, Eileen, Program Director, Pacific Institute for Research & Evaluation

Cambridge
Nichols, Louis, Lieutenant, Cambridge Police Dept

Ellicott City
*Llewellyn, Sherry, Director of Public Affairs, Howard Co Police Dept

Fort Meade
Armstrong, Matthew, Chief, NSA Police

Frederick
*Sparks, Stephanie L, Officer First Class, Frederick Police Dept

Gaithersburg
Augustine, Nicholas, Lieutenant, Montgomery Co Police Dept

Jessup
*Carroll, Richard E, First Sergeant, Maryland State Police

Marriottsville
Abuelhawa, David, Lieutenant, Howard Co Police Dept

Ocean City
Austin, Raymond, Lieutenant, Ocean City Police Dept

Seat Pleasant
Ivey, E Earl, Deputy Chief of Police/Lieutenant, Seat Pleasant Police Dept

Towson
*Armacost, Elise, Public Information Officer, Baltimore Co Police Dept
*Keller, Jason W, Police Officer First Class, Baltimore Co Police Dept

Massachusetts

Amesbury
Bailey, Craig, Lieutenant, Amesbury Police Dept
*Donovan, Kevin, Sergeant, Amesbury Police Dept

Bedford
*Bibel, Daniel B, Consultant, Mitre Corp

Boston
Etre, Matthew, Special Agent in Charge, U.S. Dept of Homeland Security ICE HSI
Leadingham, Mickey, Special Agent in Charge, ATF/Justice
Marks, Stephen, Special Agent in Charge, U.S. Secret Service

Chicopee
Dakin, Lonny, Captain, Chicopee Police Dept

Danvers
Tansey, Philip R, Captain, Danvers Police Dept

Dunstable
Dow, James W, Lieutenant, Dunstable Police Dept

East Boston
Favuzza, Robert J, Captain, Massachusetts Police Dept

Fitchburg
*Cronin, Edward, Senior Law Enforcement Advisor, U.S. State Department/INL

Foxboro
*Keeling, Clifford L, Chief of Police Ret, Topsfield MA

Hingham
*Dearth, Steven, Sergeant/PIO, Hingham Police Dept

Hyannis
*Drifmeyer, Eric, Police Officer/Crime Analyst, Barnstable Police Dept

Lincoln
Kennedy, Sean, Lieutenant, Lincoln Police Dept

Longmeadow
Fontaine, Gary, Captain, Longmeadow Police Dept

Marshfield
Brennan, Jeffrey, Captain, Marshfield Police Dept

Tyngsborough
Chronopoulos, Christopher, Deputy Chief of Police, Tyngsborough Police Dept

West Yarmouth
*Britt, Gerard, Patrol Sergeant, Yarmouth Police Dept
*Mellett, Paul, Patrol Officer, Yarmouth Police Dept

Winchester
MacDonnell, Peter, Chief of Police, Winchester Police Dept

Michigan

Adrian
Hanselman, Gary, Chief of Police, Adrian Twp Police Dept

Alpena
Grimshaw, John, First Lieutenant, Michigan State Police
Jett, Joel, Chief of Police, Alpena Police Dept
*Koch, David, Sergeant, Alpena Police Dept

Ann Arbor
*Webb, Brian J, Deputy, Washtenaw Co Sheriff's Office
Williams, Brandon, Lieutenant, Pittsfield Twp Police Dept

Battle Creek
Geigle, Anthony, Lieutenant, Emmett Twp Dept of Public Safety
*Palmer, Brad, Sergeant, Battle Creek Police Dept
Wise, Brad, Inspector, Battle Creek Police Dept

Beaverton
Davis, Brad, Chief of Police, Beaverton Police Dept

Belleville
Luke, Eric, Chief of Police, Sumpter Twp Police Dept

Boyne City
Gaither, Jeffrey, Chief of Police, Boyne City Police Dept
Spate, Kevin, Assistant Chief of Police, Boyne City Police Dept

Brighton
Pless, Jason, Chief of Police, Green Oak Twp Police Dept

Bronson
Johnson, Stephen, Chief of Police, Bronson Police Dept

Burton
Osterholzer, Thomas, Chief of Police, Burton Police Dept

Canton
Baugh, Chad, Lieutenant, Canton Police Dept

Central Lake
Barrett, Scott, Chief of Police, Central Lake Police Dept

Clare
Gregory, Brian, Chief of Police, Clare Police Dept

Clinton Township
Posavetz, Fred A, Chief of Police, Clinton Twp Police Dept

Davison
Craig, Tony, Chief of Police, Richfield Twp Police Dept
Harris, Donald, Chief of Police, Davison Police Dept

Dearborn
Mann, Gary, Lieutenant, Dearborn Police Dept

Detroit
Schimke, Terry, Resident Agent in Charge, ATF/Justice

East Jordan
McDonnell, Terrence, Chief of Police, East Jordan Police Dept

East Lansing
Murphy, Jeffrey, Chief of Police, East Lansing Police Dept

Essexville
Benchley, Bryan, Chief, Hampton Twp Police Dept

Evart
Beam, John, Chief of Police, Evart Police Dept

Farmington Hills
Koehn, Matt, Assistant Chief of Police, Farmington Hills Police Dept

Fenton
Aro, Richard, Chief of Police, Fenton Police Dept
Livingston, David, Lieutenant, Mott Community College Dept of Public Safety

Flint
Becker, Michael, Lieutenant, Mott Community College Dept of Public Safety
McElroy, Eric, Lieutenant, Mott Community College Dept of Public Safety

Flushing
Hoornstra, Mark, Chief of Police, Flushing Police Dept
Jakubowski, Alan, Resident Agent in Charge, ATF/Justice

Frankenmuth
Mawer, Donald, Chief of Police, Frankenmuth Police Dept

Gaylord
Davis, Blake, 1st Lieutenant, Michigan State Police
McVannel, Brett, Chief of Police, Gaylord Police Dept

Gladwin
Bean, Duane W, Chief of Police, Gladwin Police Dept

Grand Rapids
*Balkema, David, Special Agent, ATF/Justice
Ostapowicz, Matt, Captain, Grand Rapids Police Dept
Reilly, Vincent, Captain, Grand Rapids Police Dept

Grayling
Baum, Douglas, Chief of Police, Grayling Dept of Public Safety

Howell
Sanborn, Eric, Lieutenant, Livingston Co Sheriff's Office

Ionia
Odette, John, Deputy Director, Ionia Dept of Public Safety
Thomas, Troy S, Director, Ionia Dept of Public Safety

Jackson
Heins, Matthew R, Director, Jackson Police Dept

Kentwood
Litwin, Bryan, Captain, Kentwood Police Dept

Lake Odessa
Bender, Mark L, Chief of Police, Lake Odessa Police Dept

Lakeview
Dood, Darin, Chief of Police, Lakeview Police Dept

Lansing
McGaffigan, Kevin, Captain, Michigan State Police
*Steele, John, Standards Compliance Manager, Michigan Commission on LE Standards

Marshall
McDonald, Scott, Deputy Chief of Police, Marshall Police Dept

Montague
Rought, Robert, Chief of Police, Montague Police Dept

Mount Pleasant
*Covarrubias, Michael G, DRE Instructor, Mount Pleasant Police Dept

Muskegon
Lewis, Jeffrey, Director of Public Safety, Muskegon Dept of Public Safety

Norton Shores
Poel, Brandon, Lieutenant, Norton Shores Police Dept

Novi
*Baetens, Scott, Detective Sergeant, Novi Police Dept

Onsted
Paterson, Jeffrey, Deputy Chief of Police, Cambridge Twp Police Dept
Wibbeler, Larry, Chief of Police, Cambridge Twp Police Dept

Paw Paw
Marshall, Eric, Chief of Police, Paw Paw Police Dept

Petoskey
Breed, Matthew, Lieutenant, Petoskey Dept of Public Safety

Pigeon
Wissner, Eric, Chief of Police, Pigeon Police Dept

Plainwell
Bomar, Bill, Director of Public Safety, Plainwell Dept Public Safety

Pontiac
Johnson, Michael, Captain, Oakland Co Sheriff's Dept
Maier, Melvin, Chief, Oakland Co Sheriff's Dept
Wilson, Bart, Lieutenant, Oakland Co Sheriff's Dept

Romulus
Monte, Joshua, Captain, Romulus Police Dept

Royal Oak
Reilly, Robert, Deputy Chief of Police, Royal Oak Police Dept

Saginaw
Kocsis, Steven, Chief of Police, Thomas Twp Police Dept
*McIntyre, Tom, Executive Director, Saginaw Co 911
Oatten, Craig, Chief of Police, Carrollton Twp Police Dept
Schulz, Robert, Chief of Police, Buena Vista Twp Police Dept

Sault Sainte Marie
Riley, John, Chief of Police, Sault Ste Marie Police Dept

Somerset Center
Stolberg, Eric, Chief of Police, Somerset Twp Police Dept

Springport
Luce, David, Chief of Police, Springport Twp Police Dept

St Clair Shores
Woodcox, Todd, Chief of Police, St Clair Shores Police Dept

St Johns
Knight, Kyle, Chief of Police, St Johns Police Dept

University Center
Mioduszewski, Leo, Chief of Police, Saginaw Valley State Univ Police

Warren
Carney, Patrick, Lieutenant, Macomb Community College Police Dept
Kawa, Michael, Lieutenant, Macomb Community College Police Dept

Wayne
Maciag, Alan, Chief of Police, Wayne Police Dept

Whitehall
Squiers, Roger, Chief of Police, Whitehall Police Dept

Woodhaven
Price, Vincent, Chief of Police, Woodhaven Police Dept

Zeeland
Olney, William, Chief of Police, Zeeland Police Dept

Minnesota

Burnsville
Behnken, Jef L, Captain, Burnsville Police Dept

Cloquet
Randall, Derek, Commander, Cloquet Police Dept

Columbia Heights
*Pletcher, Justin J, Sergeant, Columbia Heights Police Dept

Cottage Grove
Woolery, Craig A, Director of Public Safety, Cottage Grove Dept of Public Safety

Crystal
*Gomez, Kathleen, Police Officer, Crystal Police Dept

Granite Falls
*DeSmet, Daniel A, Officer, Upper Sioux Community Police Dept

International Falls
Mastin, Richard, Chief of Police, International Falls Police Dept

Minneapolis
*Dison, Eric, Sergeant, Minneapolis Police Dept
*Mallett, Michael, Student, Walden Univ

Mississippi

Batesville
McCloud, Jimmy, Deputy Chief of Police, Batesville Police Dept

Missouri

Kansas City
Seeling, Scott, Chief Deputy U.S. Marshal, U.S. Marshals Service
Stamm, Jeffrey, Executive Director, Midwest HIDTA

Maryville
*Williams, Anthony, Police Officer, Northwest Missouri State Univ Police

Pevely
Moutray, Charles A, Lieutenant, Pevely Police Dept

Republic
Lawton, Michael, Chief of Police, Republic Police Dept

Trenton
Wright, Tommy A, Chief of Police, Trenton Police Dept

Warrensburg
*Durbin, Tracey, DRE/SFST State Coordinator, Univ of Central Missouri

Nebraska

La Vista
Barcal, D J, Captain, La Vista Police Dept

Lincoln
*Bos, Dave, Loss Control Manager, League Assn of Risk Management
*Schwarz, Jeremy J, Deputy, Lancaster Co Sheriff's Office

Omaha
*Baker, Angie K, Police Officer, Omaha Police Dept
*Kelly, Matthew E, Officer, Omaha Police Dept
*Lape Brinkman, LeaAnn, Psychologist, Woodhaven Counseling Associates
*Richards, Angela, Police Officer, Omaha Police Dept

Nevada

Las Vegas
*Huff, Deborah, State Trooper, Nevada Dept of Public Safety
Jackson, Thomas A, Major, Nevada Dept of Public Safety
Kelly, Tim, Assistant Sheriff, Las Vegas Metropolitan Police Dept

Reno
*Lopez, Marcia, Sergeant, Reno Police Dept

New Hampshire

Durham
*Bilodeau, Michael, Detective Sergeant, Durham Police Dept

Newton
Jewett, Michael, Chief of Police, Newton Police Dept

New Jersey

Brookside
*Taquinto, Daniel, Sergeant, Mendham Twp Police Dept

Cape May Court House
*Larkin, Leonard P, Corporal, Middle Twp Police Dept

Chatam
Gibbons, Brian K, Captain, Chatham Borough Police Dept

Cherry Hill
*Cairns, Scott, Police Officer, Cherry Hill Police Dept

Forked River
DiBella, Michael C, Chief of Police, Lacey Twp Police Dept

Hoboken
*Sellick, Edward M, Sergeant, Hoboken Police Dept

Mendham
*McNichol, Patrick C, Sergeant, Mendham Borough Police Dept

Morristown
McKevitt, Mark, Special Agent in Charge, U.S. Secret Service

Paramus
Lagrone, David J, Captain, Paramus Police Dept

West Trenton
*Auclair, Aaron, Detective Sergeant, New Jersey State Police

New Mexico

Clovis
Ford, Douglas R, Chief of Police, Clovis Police Dept

Gallup
Hart, Phillip C, Chief of Police, Gallup Police Dept

Los Lunas
Valenzuela, Lisa, Lieutenant, Los Lunas Police Dept

Santa Fe
Gonzalez, Antonio, Captain, New Mexico State Police
Suggs, Ryan, Major, New Mexico State Police
Thornton, Robert, Major, New Mexico State Police

Taos Ski Valley
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*McManus, Hannah, CPRP Team, Univ of Cincinnati
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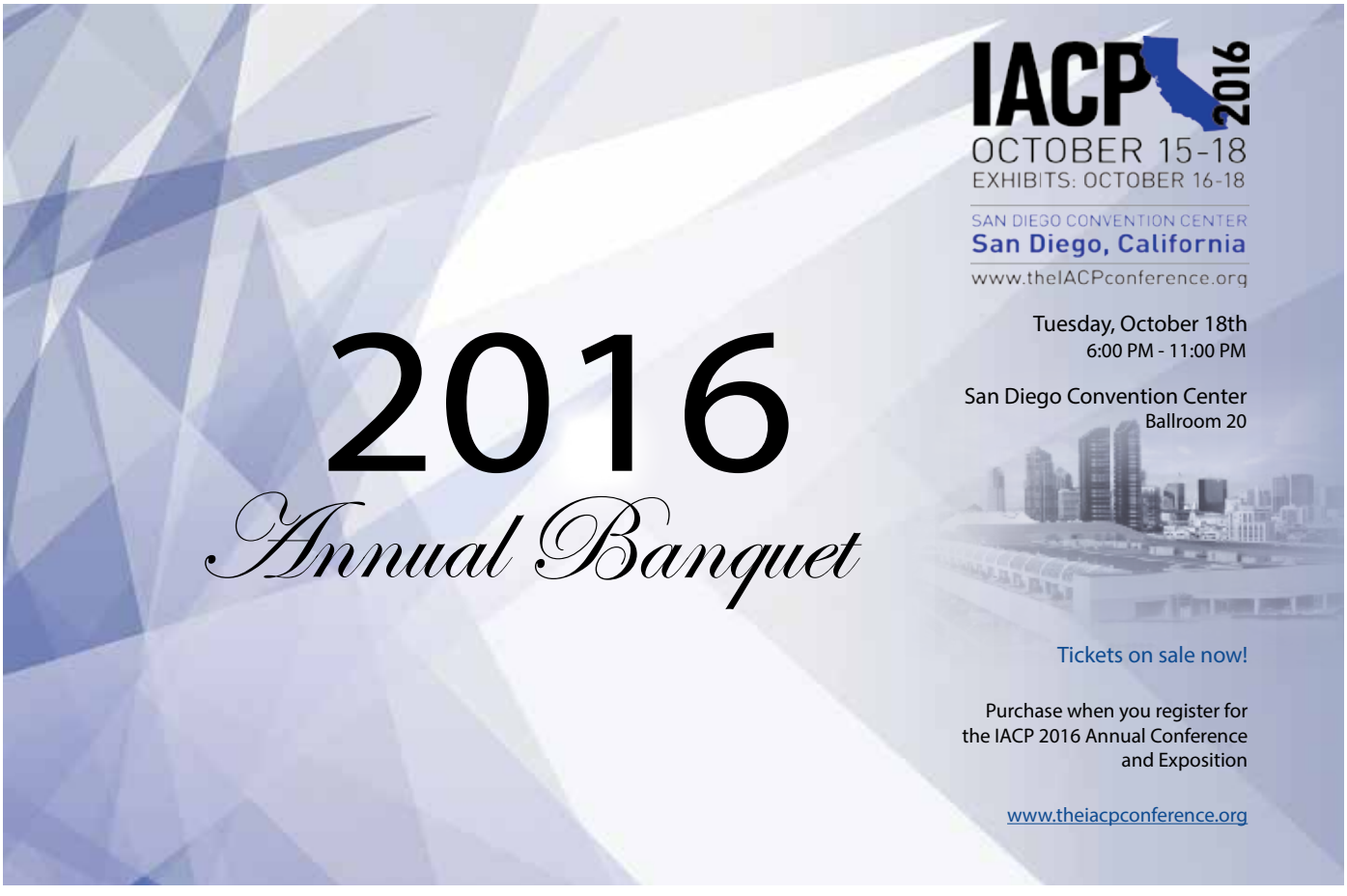

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The IACP notes the passing of the following association member with deepest regret and extends its sympathy to his family and coworkers left to carry on without him.

James R. Fuller, Chief of Police (ret.), Stratford, New Jersey

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Case Closed with Digital Investigative Solutions

By Tom Joyce, Lieutenant Commander of Detectives (Ret.), New York Police Department, Vice President of Product Development, Vigilant Solutions Inc.

The development of new technologies is moving at what feels like the speed of light. New software, devices, and applications are changing the way data and information are acquired, processed, and used. Just think about it—smartphones now make it possible to have a computer and the endless amounts of information on the Internet at people's fingertips at all times. In a fraction of the time it used to take road-tripping families to plot their courses on maps, they can now enter their destination into Google Maps, find the fastest route in seconds, and search for food and lodging, all while cruising down the open road.

Increased efficiency of familiar tasks and an ability to do something new are hallmarks of any useful technology. This is true for individuals, governments, and business sectors around the world. Most important for law enforcement leaders and agencies, it applies to technology considered and used by the law enforcement community.

New technology solutions are making it possible for law enforcement agencies to acquire, analyze, and make use of valuable data. Data have a very specific law enforcement purpose: generate investigative leads and help law enforcement solve crimes. License plate readers (LPRs) data and facial recognition, in particular, work together to create an investigative solution that is helping agencies generate leads and solve crimes with increased effectiveness and efficiency.

LPR Data and Vehicle Location Intelligence

What are LPR data? The answer is very simple. When an LPR image is captured, either by a stationary or mobile camera unit, it includes an image of the license plate, which is subsequently stamped with the date, time, and GPS coordinates of where it was taken. The unique LPR data record is then stored in a database with other records that can be searched by authorized personnel. The data are completely anonymous, personally identifiable information can be linked to a license plate only by accessing the state's department of motor vehicle database—to which access is currently restricted by federal law under the Driver's Privacy Protection Act (DPPA).

Though the information contained in LPR data is straightforward and anonymous, it provides extremely valuable vehicle location intelligence, which helps agencies

- generate leads to solve violent crimes and get criminals off the streets;
- search locations to identify vehicles of interest in complex crime scenarios to help solve crimes faster;
- protect their communities without invading the personal privacy of citizens; and
- share information across jurisdictions.

Historical and real-time LPR data generate vehicle location intelligence during investigations in three distinct ways.

Virtual Stakeout: Filtering data by time, date, and location enables law enforcement to quickly verify what license plates were scanned in an area around a single event or series of events. These analytic capabilities are particularly useful to agencies investigating serial or pattern crimes since they can easily identify vehicles in the vicinity of a given set of locations at a specific time. One officer can digitally investigate multiple locations from a device, thus freeing up the manpower and resources that would be required to canvas the given areas.

Analysis: Once a vehicle of interest is identified, historical LPR data can be used to generate a ranked list of locations where the vehicle is likely to be found. This analysis, conducted by the software, saves investigators time and resources so they can narrow in on the most likely location of the vehicle based on where the license plate was scanned in the past.

Real-Time Alerts: LPR data solutions enable an agency to preload license plates for vehicles of interest into hotlists. Examples of license plate hotlist topics include stolen vehicles, vehicles linked to individuals with a warrant out for their arrest, and vehicles associated with an Amber Alert. When a vehicle's plate that appears on a hotlist is scanned by an LPR camera mounted on a law enforcement vehicle, the officer in the LPR-equipped vehicle, along with investigators looking for the suspect vehicle, are notified immediately.

Real-time alerts not only help solve crimes, but also provide officers in the field with valuable situational intelligence. For instance, consider a traffic stop where the car is registered to an individual wanted for armed robbery. The officer is armed with important information—thanks to the hotlist—and can act accordingly. This type of intelligence is becoming more valuable every day as law enforcement officers are increasingly the target of violence.

Vehicle location intelligence has proven its value to law enforcement time and time again. Hit-and-run incidents, child abductions, sexual assaults, and homicides are just a few of the crimes solved with leads generated from this solution. Whether a vehicle of interest is a block, a town, or five states away, LPR data can help investigators determine where it has been through historical data, where it is via real-time alerts, and predict

where it could be if they need to locate it. That is the power of the data and the intelligence that an agency can access.

The Evolution of Facial Recognition

Facial recognition technology, another effective lead-generating solution, is currently experiencing a new and exciting evolution. To understand where the technology is today, it is important to understand where it has been. Far from the all-seeing eye that is presented on television shows like *CSI* or *NCIS*, facial recognition systems use four key components: a camera, a print or template, a database, and a match search.

1. A camera captures an image.
2. The algorithm creates a face print or facial template.
3. The image is then stored in a database of face prints or facial templates.
4. Facial recognition compares the captured image (probe photo) against the database to see if there is a match.

For law enforcement, probe images are compared to a database of gallery images, generally mugshot photos. In order to find a facial recognition match, the person of interest must also exist in the database of gallery images. This process is very straightforward, but commonly misrepresented to the public by the media and the entertainment industry.

Where this technology has failed investigators in the past is in the image analysis phase. Before a probe photo is submitted for analysis, investigators must determine if it meets the criteria for a facial recognition search. This is problematic because gallery images are controlled images taken in environments and with equipment that generally produce high-quality images for use in facial recognition systems. They are taken straight-on, in good lighting, and with the subject's eyes open. However, most probe images obtained by law enforcement are uncontrolled in nature. They often originate from off-axis CCTV camera feeds, low-quality ATM photos, social media images, and other sources where the image is less than ideal for facial recognition.

Until now, an uncontrolled image often meant that investigators could not successfully conduct a facial recognition search. Characteristics like poor lighting, heavy pixilation, low resolution, and overexposure signaled a dead end to that lead. However, a breakthrough has recently occurred. Using specialized facial recognition enhancement tools, investigators can now enhance select lower-quality images previously unusable for facial recognition searching. This capability results in more images conducive to facial recognition searching and more likely to generate a lead. To be clear, all facial recognition matches must be considered potential matches that require additional investigation by officers. The end result is never absolute, but the technology can provide an agency with a very good investigative lead.

Thanks to incredible innovation and creativity, the number of leads being generated is going up, the level of frustration for investigators is going down, and facial recognition is starting to fulfill its promise as a lead-generating technology solution.

Conclusion

Vehicle location intelligence and facial recognition are two distinct technologies that, when paired together, form an efficient, powerful investigative solution. A solution with one goal—to generate quality investigative leads for agencies. ❖

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Engaging the DMV as a Partner in a Comprehensive Road Safety Strategy

By Brian A. Ursino, MBA, Director of Law Enforcement, American Association of Motor Vehicle Administrators

State and local law enforcement agencies that are actively engaged in activities in support of their jurisdiction's strategic highway safety plan understand the importance of partnerships. But how many law enforcement agencies think to partner with the American Association of Motor Vehicle Administrators (AAMVA) or one of their department of motor vehicle (DMV) members? It is important to note that, in addition to DMVs, every state and provincial police or highway patrol agency in North America is a member of AAMVA.

Along with the IACP and other highway safety association stakeholders, AAMVA is a member of the steering committee that developed the Toward Zero Deaths national strategy.[1] The steering committee partnership approach to the plan's development contributed to a more comprehensive U.S.-wide strategy than if it had been developed by any one agency, association, or stakeholder alone. Similarly, agencies implementing strategies in support of national and jurisdictional traffic safety plans are more effective when engaged in partnerships. This is why including AAMVA, and more specifically, the state or provincial DMV, on the list of potential partners is important.

How AAMVA Supports Law Enforcement

AAMVA Conferences: AAMVA hosts a series of conferences and meetings each year. Each of AAMVA's four regions holds a regional annual conference between May and October every year, with AAMVA's Annual International Conference (AIC) for its entire North American membership held each August. The AIC is intended primarily for executive-level DMV, state law enforcement members, and AAMVA associate members. In addition, AAMVA hosts a workshop and Law Institute in the spring that is primarily for the mid-level managers from throughout its North American membership.

How is this relevant? These conferences offer a unique opportunity for law enforcement to network with their DMV counterparts while attending sessions where both can engage in synergistic discussions on issues of mutual concern.

For example, at the 2016 AAMVA AIC, the sessions offered included the following:

- Automated Vehicles: Tomorrow Is Today
- DMV Investigators: Collaborating to Reduce Fraud
- Drug-Impaired Driving
- Human Trafficking
- Mobile DL: The Pilots and Path to Interoperability
- North American Highway Safety Strategies
- Our Transportation Future
- Roadside Screening of Cognitive Impairment
- Sovereign Citizens: Homegrown Terrorism

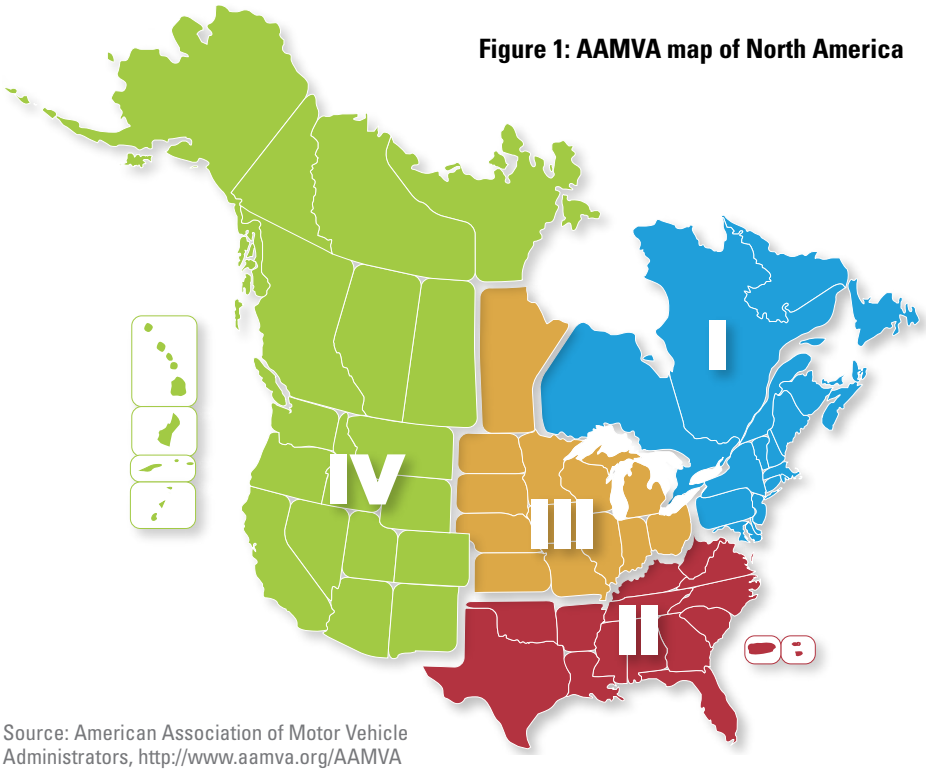
These sessions featured high-caliber speakers representing motor vehicle administration and law enforcement perspectives. The point is, most traffic safety issues, in one way or another, not only are of concern to DMVs and law enforcement, but can be mitigated to some degree by both—or, most effectively, in partnership with each other. Attending AAMVA conferences is a great way for DMV and law enforcement officials to cultivate partnerships on issues that affect both.[2]

To understand which regional conference may be applicable to a particular agency, it is important to understand how AAMVA's North American membership is geographically subdivided, as shown in Figure 1.

Education: AAMVA provides no-cost and low-cost education opportunities to its members. One example is the AAMVA Webinar Series that offers at least one webinar each month. Examples of past webinars offered include

- Ignition Interlock Program Best Practices and Roadside Training for Law Enforcement
- Impact Teen Drivers
- Legalization of Marijuana—Highway Safety Implications

Figure 1: AAMVA map of North America



Source: American Association of Motor Vehicle Administrators, http://www.aamva.org/AAMVA-Regions-and-Jurisdictions-Map

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- NMVTIS: An Improved (Auto Theft and Fraud) Tool for Law Enforcement
- Partner Program Highlight: IACP National Law Enforcement Challenge Awards

Another educational opportunity exists with the AAMVA Fraud Detection and Remediation (FDR) training. With training modules that address a variety of topics, Level 1 FDR introduces the basic techniques of fraudulent document recognition that law enforcement can use at roadsides without the need for expensive forensic tools. By providing in-depth examples and explanations of the types of security features in circulation today and—most important—how to identify them, the courses offer the tools needed to identify potentially fraudulent documents for review that might have otherwise been accepted at face value as genuine. Because the courses include a series of printable job aids and "quick tips" covering essential concepts and document features, those who take the training will be armed with the fraud detection tools they need. FDR Level 1 courses range from 30 to 45 minutes each (including a knowledge assessment at the end of each course). Organizations can deliver the suite as a whole or choose to offer only those courses that are of the highest priority for their mission. FDR is free to AAMVA members.[3]

Solutions and Best Practices: AAMVA has three standing committees: Driver, Law Enforcement, and Vehicle. These committees are supported by AAMVA staff, but comprise AAMVA, DMV, and law enforcement members from throughout North America. Each standing committee is charged with addressing contemporary issues within its area of oversight. The most common method for accomplishing this is through topic-specific working groups identified as a priority by each standing committee. Priority is given to issues that are of mutual concern to both DMVs and law enforcement. The following are examples of working group deliverables published under the auspices of the Law Enforcement Standing Committee:

- *Best Practices for the Deterrence and Detection of Fraud* [2015]
- *Facial Recognition Program Best Practices* [2015]
- *Ignition Interlock Program Best Practices* (includes law enforcement training video) [2015]
- *Best Practices in Reducing Suspended Drivers* [2013]
- *Improving ALPR Effectiveness through Uniform License Plate Design & Manufacture* [2012]
- *18-Wheels & BUSted* (truck enforcement for non-Motor Carrier Safety Assistance Program officers) [2011]

These deliverables focus on the Law Enforcement Standing Committee's mission, which is to "inspire collaboration between Law Enforcement and Driver/Motor Vehicle Administrators to improve highway and public safety."[4] The following are some Law Enforcement Standing Committee working groups:

- **Autonomous Vehicle Working Group.** This working group, which is a partnership among all three of AMMVA's standing committees and is funded by the National Highway Traffic Safety Administration (NHTSA), is assisting NHTSA in the development of Model State Guidelines for Automated Safety Technology in Motor Vehicles. The NHTSA Model State Guidelines will be followed by an even more in-depth AAMVA document addressing driver, vehicle, and law enforcement areas of concern with the goal of ensuring public safety and consumer protection without unduly inhibiting technological innovation. These deliverables are expected to be released in late 2016.
- **DMV Investigator Integration Working Group.** This working group is preparing two deliverables: (1) a strategy white paper to integrate DMV investigators into the law enforcement discipline and (2) a resource guide to assist DMV and law enforcement investigators when investigating crimes involving identity credentials, vehicles, and other fraud-related crimes. These deliverables are expected to be released in early 2017.
- **The National Motor Vehicle Title Information System (NMVTIS) Law Enforcement Working Group.** This standing working group has goals to expand NMVTIS awareness and usage among law enforcement and to improve the NMVTIS Law Enforcement Access Tool (LEAT) for assisting in deterring and preventing auto-related crimes.
- **Disability Placard and License Plate Fraud Working Group.** This working group will be developing best practices to deter and identify fraud that occurs during the issuance process and post-issuance fraudulent use. This deliverable is expected to be released in early 2018.

AAMVA Awards Program: AAMVA has an annual awards program that fosters a tradition of excellence in the motor vehicle and law enforcement community by honoring individuals, teams, and organizations who have submitted nominations in a variety of categories that have been judged as exemplary in their respective category.[5] The following are just a few of the law enforcement individuals and agencies recognized at the 2016 AAMVA AIC:

- Colonel Tracy Trott, Tennessee Highway Patrol, Martha Irwin Award for Lifetime Achievement in Highway Safety;
- Colorado State Patrol, Overall/Budget Under $50,000: #cspfightsfatals marketing campaign;
- Washington State Patrol, PSA, Externally Produced: 2015 TV recruitment campaign;
- Minnesota State Patrol, Video Production, Internally Produced: *Shattered Dreams, Distracted Driving Changing Lives*; and
- Ohio Department of Public Safety, Website, Internally Produced: new Ohio DPS website.

In addition to providing individual and agency recognition, this awards program promotes best practices and innovative idea sharing in the areas of safety, security, customer service, and public education and consumer education programs throughout North America.

Conclusion

Although only North American state and provincial law enforcement agencies are AAMVA members, any local law enforcement agency, organization, or individual from anywhere in the world can become an associate member, thus enabling its employees to take advantage of AAMVA member products and services and be afforded membership rates to attend AAMVA conferences and meetings. ❖

Brian Ursino retired from the Washington State Patrol in February 2010 after more than 30 years of service, the last 5 years during which he served as assistant chief. Ursino has been in his current position as director of law enforcement for AAMVA since March 2010. Ursino has a BS in business administration and an MBA in managerial leadership from City University in Seattle, Washington. Ursino has also attended the FBI National Academy and the Kennedy School for Executives in State and Local Government at Harvard. Ursino is being presented with the J. Stannard Baker Award for outstanding lifetime contributions to highway safety during the 2016 IACP Annual Conference.

Notes:

[1]Toward Zero Deaths, http://www.towardzerodeaths.org (accessed September 9, 2016).

[2]To visit the 2016 AIC downloads page, go to www.aamva.org/2016-Annual-International-Conference-Download-Center. To learn about future AAMVA conferences, visit www.aamva.org/events.

[3]For more information on FDR training, see AAMVA, "Fraud Detection & Remediation Training," http://www.aamva.org/fdr-training (accessed September 9, 2016).

[4]AAMVA, "Law Enforcement Standing Committee," http://www.aamva.org/Law-Enforcement-Standing-Committee (accessed September 9, 2016). To view all available AAMVA best practice and model legislation documents, visit http://www.aamva.org/best-practices-and-model-legislation.

[5]To learn more about the AAMVA Awards Program, visit http://www.aamva.org/aamva-awards.

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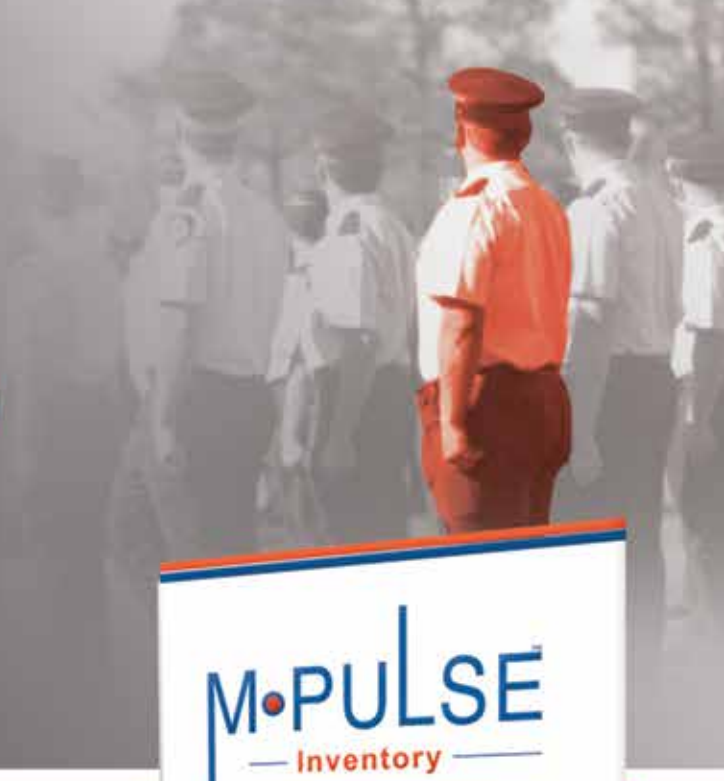

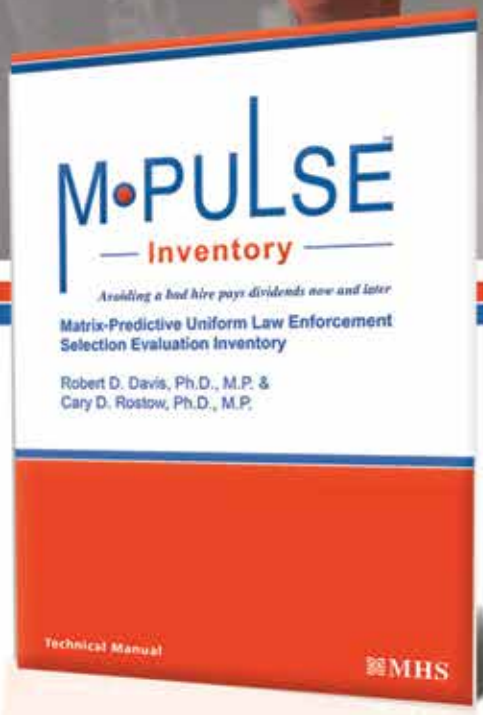

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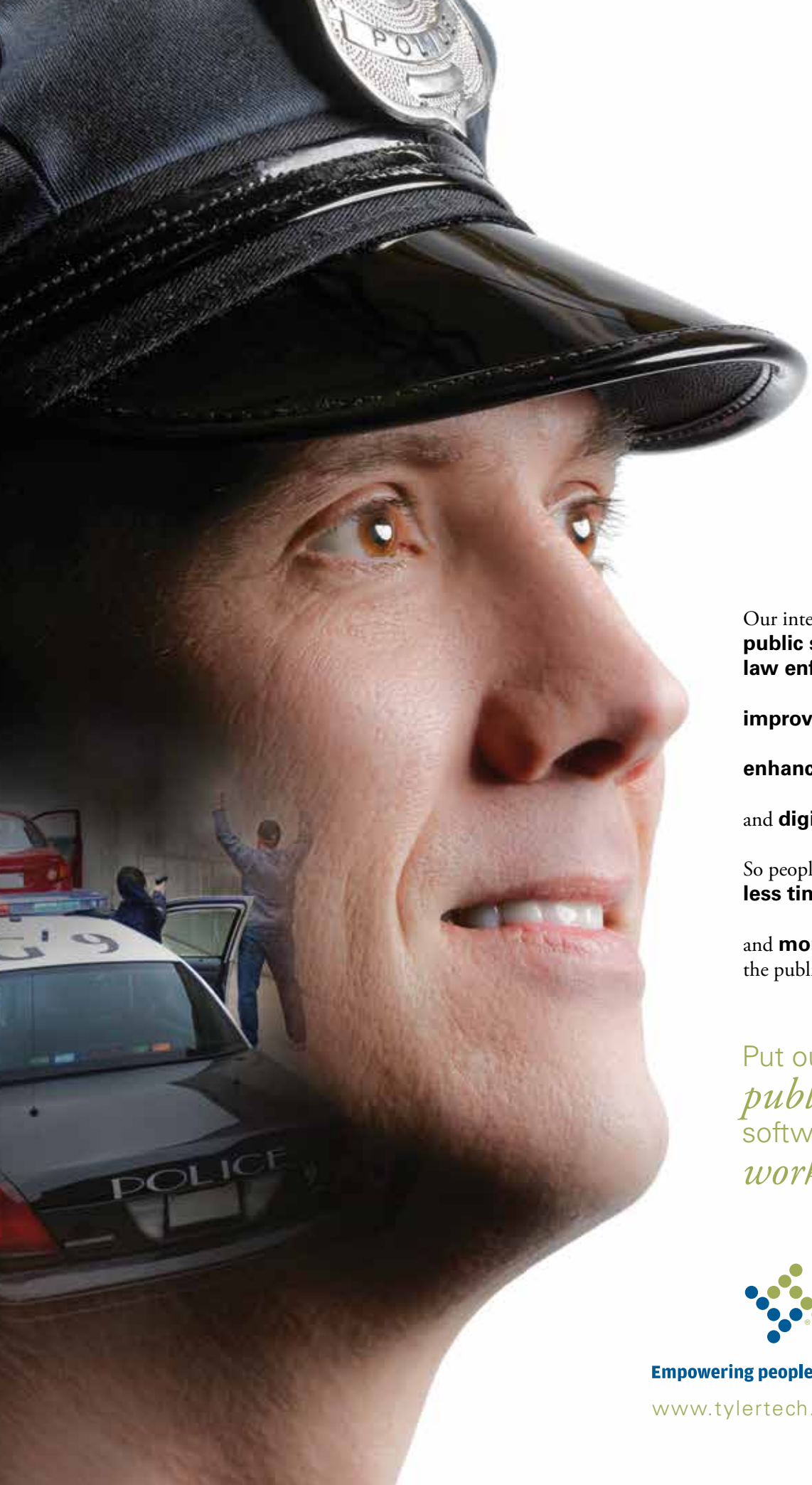

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