

Centralized Visual Data for Law Enforcement: The Solution to Real-Time Information Management



The Problem

We live in an interconnected world. Today information is everywhere; coming at us from different angles; every second of the day. The sheer volume of data-driven devices has pushed technological advancements through the roof. In fact, by 2020, experts predict, the number of Internet-connected devices will reach 33 billion globally. That's an average of 4.3 devices per person.¹

As technology evolves, there is a dire need for real-time solutions that empower first responders to heighten safety and save lives while providing a higher level of service to the community. And though the industry has made significant progress in strategical and tactical practices, there is still a substantial gap when it comes to acquiring and analyzing dynamic intelligence. Today we have more data available to us than ever before. Yet law enforcement agencies all over the globe continually struggle with the tedious and time-consuming process of gathering, assessing, and disseminating actionable information to responders in the field.

Whether it's due to staffing shortages or budget constraints, the industry has reached a tipping point. Plainly stated, industry leaders must seek solutions that enable their personnel to leverage technological assets and streamline information sharing.

However, given the endless list of obstacles, how can law enforcement agencies expect to evolve with the times? To start, leaders must realize real-time data centers are no longer a luxury. Information moves at a breakneck pace; no matter the circumstances, it's vital to keep officers updated and informed throughout their response.

Second, it's imperative to secure technology and equipment that simplifies communication and streamlines inter-agency and intra-agency awareness. Working in silos is dangerous for both the responders and the community. Breaking down barriers is integral to the future of policing.

Finally, Decision-makers must explore non-traditional means of funding technology. Aside from the usual routes, there are countless options available for law enforcement agencies looking to improve efficiency and replace their expensive and outdated data services and with integrated technology platforms.

Through identification, examination, and analysis, this white paper will assert the practicality, and benefits of deploying a centralized visual data platform, in both modest and state-of-the-art, police operations centers.

Reality Versus Real-Time

As opposed to the days of sifting through mounds of paperwork and prying your eyes open after hours of mind-numbing video feeds, technology has granted law enforcement the gift of instant gratification. Unfortunately, accessing this gift is exceedingly challenging. Especially when you're working against the clock. With the surge of social media platforms, and the ability for anyone with an internet connection to upload video and report their version of a crime in progress; officers need to think faster and work smarter than any other time in history.

In response, the industry has exploded with technology ranging from UAV programs to gunshot detection systems. This, of course, is in addition to the myriad of other data systems such as license plate readers, automatic vehicle locator's, criminal databases, records management platforms, enhanced 911, and geographical information solutions. And while this information has heightened police awareness levels, it's also contributed to overload. Simply put, many departments don't have the staffing levels or the operating capacity to process excessive data. At least not efficiently. As much as the industry regrets to admit it, external intelligence is invaluable to police work. In other words, discounting these assets is not a viable option.

¹"33 Billion Internet Devices by 2020: Four Connected Devices for Every Person in World." Strategy Analytics.
<https://www4.strategyanalytics.com/default.aspx?mod=pressreleaseviewer&a0=5609>

So how can your department overcome this paradox? The options are limited. You could hire a never-ending stream of analysts or acquire a small fortune in funding. However, that's not realistic. And it won't solve the problem. Money or additional staff cannot add extra minutes to clock or appeal to public patience levels. Can you imagine calling a complainant and explaining you'll need a few more hours to assess the situation before responding to their emergency?

Given the knowledge that in the United States alone, a violent crime occurs every 24.6 seconds, and a property crime occurs every 4.1; it's clear, law enforcement agencies must adapt to a new reality.²

As human beings, we cannot be everywhere at once. To stay ahead of the threat, police personnel must have constant access to programs that can simultaneously collect, analyze, simplify, and distribute intelligence from both static and dynamic sources. And while television has made this process look easy, as you well know, real life rarely follows a script. That said, technology is catching up to the small screen.

Today there are systems available that can combine our internal information systems with public and private data feeds. The best part? These systems enable one-step situational awareness — one program, one password, one complete picture to one screen of your choosing. To give you a better idea of how this technology works, let's take a look at how centralized visual data systems can assist your personnel in a wide variety of roles and situations.

Countdown Versus Capability

From planned events to unpredictable tragedies, public safety operates on a different timeline than the rest of the world: here seconds last forever and hours equal days. Depending on the circumstance, time can either be your enemy or your friend. Advanced notification or lack thereof can mean the difference between imminent failure and overwhelming success.

However, the wrong information can lead to overload or inertia. That's why it's crucial to deploy contingencies that enable an endless flow of the right information, to the right person, at the right time.



² <https://ucr.fbi.gov/crime-in-the-u.s/2017/crime-in-the-u.s.-2017/topic-pages/crime-clock>



Streamlining Storm Operations

Whether you are organizing a public event, bracing for extreme weather, or responding to a routine call for service, complete, accurate information must flow freely.

Moreover, while you may be able to plan for devastating storms, is your department set up to deal with cascading effects such as flooding or damage to critical infrastructure?

- What happens if the storm changes track?
- Where will you direct the public and your personnel?
- What if the predetermined evacuation routes are impassable or responder vehicles break down?
- How many assets are available to respond to medical emergencies, fires, or backup requests?
- Which hospitals have the staffing and capacity to receive additional patients?
- What facts can you provide the public to help them stay safe?

Access to up-to-the-minute actionable information is vital to department leaders, support personnel, and first responders; before, during, and after a storm. Unfortunately, gathering and stitching this information together while trying to save lives and property is counterproductive. By the time your operations staff accesses each system and collects situational intelligence, officers will have already arrived on-scene. It will be too late to provide further insight or cautionary advisements.

¹ <https://www.omicsonline.org/open-access/ncaa-football-and-cloudto-ground-lightning-a-probability-analysis-2167-0587.1000112.php?aid=21124>

² <https://www.weather.gov/safety/lightning-victims>

On the other hand, a centralized visual data system can deliver this type of information quickly and accurately by merging your list of knowns with incoming details from dynamic data streams.

Aside from the usual sources such as 911 calls, local news stations, and social media platforms, you can also tie-in external data from utility companies, hospitals, transportation companies — even the National Weather Service.

On one screen and with one glance, your operations team can gain 360-degree situational awareness and a birds-eye view of changing conditions as they happen: no shouting, no running in circles, no tentative judgment calls. Instead, all the information is assembled and packaged neatly. Supplying every member of your department with the tools and quiet confidence to make split-second decisions during these historically chaotic and increasingly complex events.

Navigating Everyday Emergencies

Imagine it's a sunny morning in July. The oncoming shift is just settling in, when dispatch receives a call from a frantic woman who wakes to find her 5-year-old son missing. Because the incident occurred while the caller was asleep, she is unable to provide an accurate timeline or definitive clothing description. Upon further questioning, the caller also explains her son has developmental disabilities and loves the water. She's concerned he may try to access one of the neighbor's pools, or even worse, walk to the nearby lake.

Aside from a pit in their stomach, most of the details supplied by the caller will not be much help to the responding officers. A little boy's life is at stake. If there is any hope of preventing tragedy, your department must act as one cohesive unit.

Unfortunately, responding to these types of calls involves an exorbitant amount of guesswork due to the number of unknowns. It also presents a considerable margin for error. To mount a proper response; the agency will have to use a collection of internal and external resources to aid them in their search. However, the process is painstakingly slow and can induce gut-wrenching anxiety for even the most seasoned responders. Let's take a look at the event in motion.



Command Center Delays

Dispatchers begin by accessing location records, ascertaining photos of the missing male, and zeroing in on possible areas of interest. Next, they filter 911 systems, poll hospitals, and search through the department's internal databases and social media pages for nearby aided cases or reports of unattended children. Then, utilizing the department's GIS system, they populate a list of homes with swimming pools near the missing child's house, as well as the location of possible walking trails to the lake. Finally, after all this searching, dispatch hands off the information to the responding officers.

All the information was compiled using separate programs, multiple monitors, an excessive string of passwords, and many sets of eyes. What's more, communication staff needed to juggle these tasks while managing a flood of officer requests, leadership inquiries, and unrelated calls for service. While necessary, the cumbersome amount of steps costs precious seconds and contributes to confusion and delayed information transfer.

Stumbling Blocks On-Scene

While the communication center scrambles to piece together actionable information, officers comb through nearby housing developments and question anyone they encounter on the street. Using their mobile devices, and onboard computer to navigate traffic, they coordinate amongst each other, trying not to overlook critical information that could lead to the boy's whereabouts. Meanwhile, the department's helicopter searches overhead for signs of the missing child, ambulance crews' stage near the boy's home and local firefighters ready their divers by the lake.

After three hours, K9 officers locate the missing boy in a wooded lot behind his home. He is safe, disoriented, and severely dehydrated. But at least he is alive. When questioned why he didn't respond to the officers shouting his name, the boy shrugs, covers his ears, and asks to go back in the tree.

As police break down the scene, EMTs bring the boy to the hospital, and the department resumes normal operations. However, had the search taken any longer, the situation might have ended tragically.

[Could a centralized visual data system streamline search and rescue efforts? Absolutely. Here's how.](#)

Accelerated Operational Action

Utilizing a centralized visual data system, the police department compensates for the variables by combining their CAD records, and historical data with incoming call logs, asset location tools, and live feeds from cameras in the area.

With one program and one password, communications staff obtain a holistic view of the neighborhood, including any pools, and bodies of water within walking distance. Simultaneously, they disseminate photos of the missing boy and other pertinent information to responding units, off-duty personnel, neighboring public safety agencies, area hospitals, transit workers, and the department's social media page.





Intuitive On-Scene Intelligence

Upon receiving the corresponding data, officers obtain valuable information on where to concentrate their efforts. Applying information collected from prior reports, responders gain a better understanding of the missing boy's mindset. For example, they learn the boy only responds to his nickname, is afraid of loud noises and likes to climb trees. In turn, they adjust their techniques and extend the search to include wooded areas, pools, and lakeshores.

Once on scene, officers deploy a mobile version of the solution to access maps and photos, monitor incoming 911 alerts, and take stock of possible hazards and known offenders in the vicinity.

Instead of bogging down officers with extraneous data, and added what-ifs, personnel leverage real-time intelligence and enhanced situational awareness to create a force multiplier and eliminate duplicate efforts.

The result? Technology fused with the human side of policing forges a powerful combination, and a little boy is recovered and reunited with his mother in under 70 minutes. No hospital trip required.

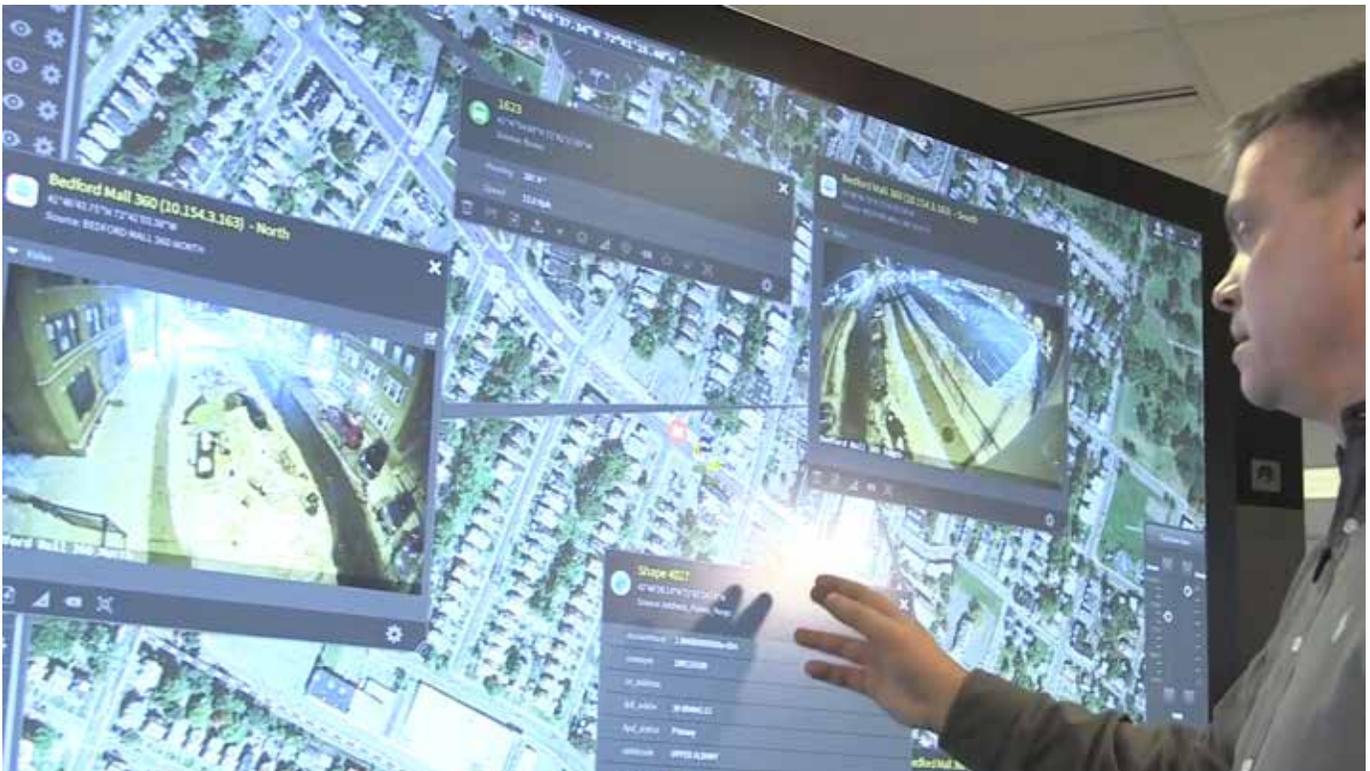
While merging your static and dynamic data streams cannot guarantee a successful outcome, a centralized platform enables your responders to maintain awareness, and bring about resolution while doing more with less.

Ready to learn more? Let's take a look at one of the leading centralized visual data systems on the market: Live Earth.

Live Earth for Law Enforcement

Collecting actionable information and condensing your agency's static and dynamic data systems shouldn't entail reinventing the wheel. Especially when you're trying to save lives, prevent crime, and protect your community. That's why Live Earth developed an innovative mapping solution with enough flexibility to meet the needs of law enforcement and public safety agencies worldwide.

Live Earth is an out-of-the-box centralized visual data system that leverages real-time GIS data to enable agencies to simultaneously funnel, analyze, and display, both continuous and static data for enhanced situational awareness. Using this cloud-based platform, users can fuse intel from outside sources such as surveillance systems, weather monitors, IoT devices and traffic cameras with data collected through their CAD, 911, RMS, LPR and AVL systems.



"It's situational awareness at a glance."

*Stephen Biancardi, GIS Project Leader,
Intelligence Division, Hartford Police Department*

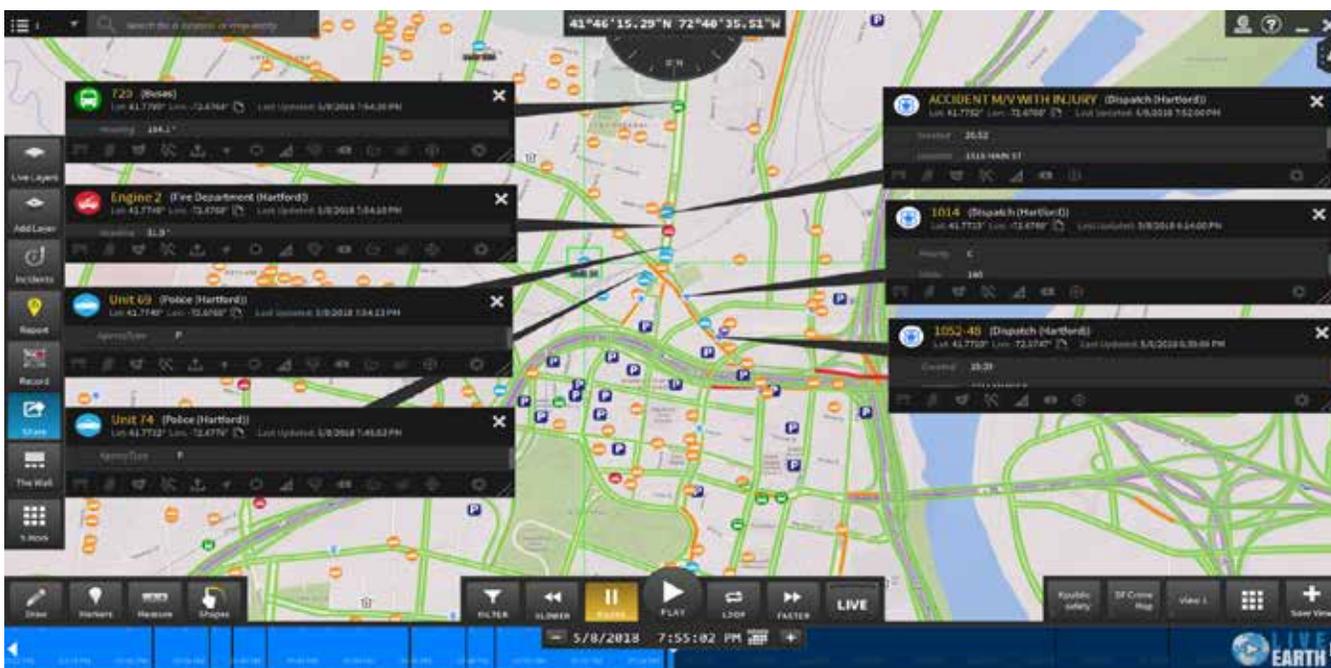


In addition, rather than requiring your members to assemble information while jumping from program to program, the Live Earth platform pulls the pieces together all on one screen: one log-on, one password, zero seconds wasted. Which means you can reallocate your resources, and free your first responders from the time-consuming, mundane tasks that keep them chained to their laptops and out of touch with the community.

Moreover, because Live Earth supports the mission-critical functions your department relies on, incorporating the system into your annual budget may be easier than you think. Aside from qualifying as a permissible purchase under the U.S. Department of Justice Asset Forfeiture Program, the Live Earth solution supports the U.S. Attorney General's goal of utilizing asset forfeiture funds to aid in the reduction and prevention of violent crimes.³ ⁴No matter how you look at it, Live Earth is a rock-solid investment in your department and your community.

What Can Live Earth Do for your Department?

Enhance Situation Awareness with High-Speed Alerts



Confront crime and bolster officer safety while mounting effective responses based on actionable information and real-world insight.

With Live Earth's lightning-fast, real-time alerting feature, dispatchers, and officers stay ahead of the threat and on top of their game. System users can configure tracking rules and designate search parameters to monitor events, generate updates, and distribute incident notifications —via text or email—to department leaders, command staff, and in-field personnel.

What's more, because the system automatically records, organizes, and stores each alert, you can feel confident that your notification logs will remain accurate and easily accessible.

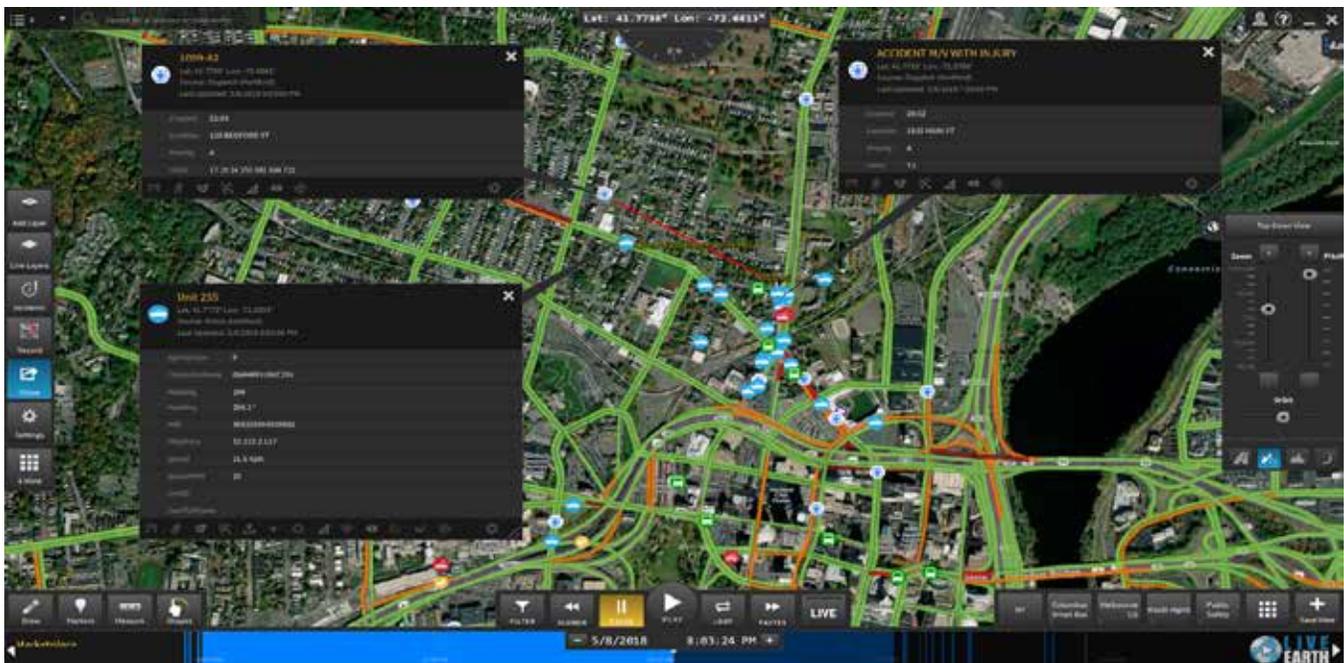
³ United States of America, U.S. Department of Justice, U.S. Department of the Treasury, (2018, July). Guide to Equitable Sharing for State, Local, and Tribal Law Enforcement Agencies.
⁴ Attorney General Sessions Issues Policy and Guidelines on Federal Adoptions of Assets Seized by State or Local Law Enforcement. (2018, April 13). Retrieved from <https://www.justice.gov/opa/pr/attorney-general-sessions-issues-policy-and-guidelines-federal-adoptions-assets-seized-state>

Heighten Comprehension and Eliminate Overload with Live Layers

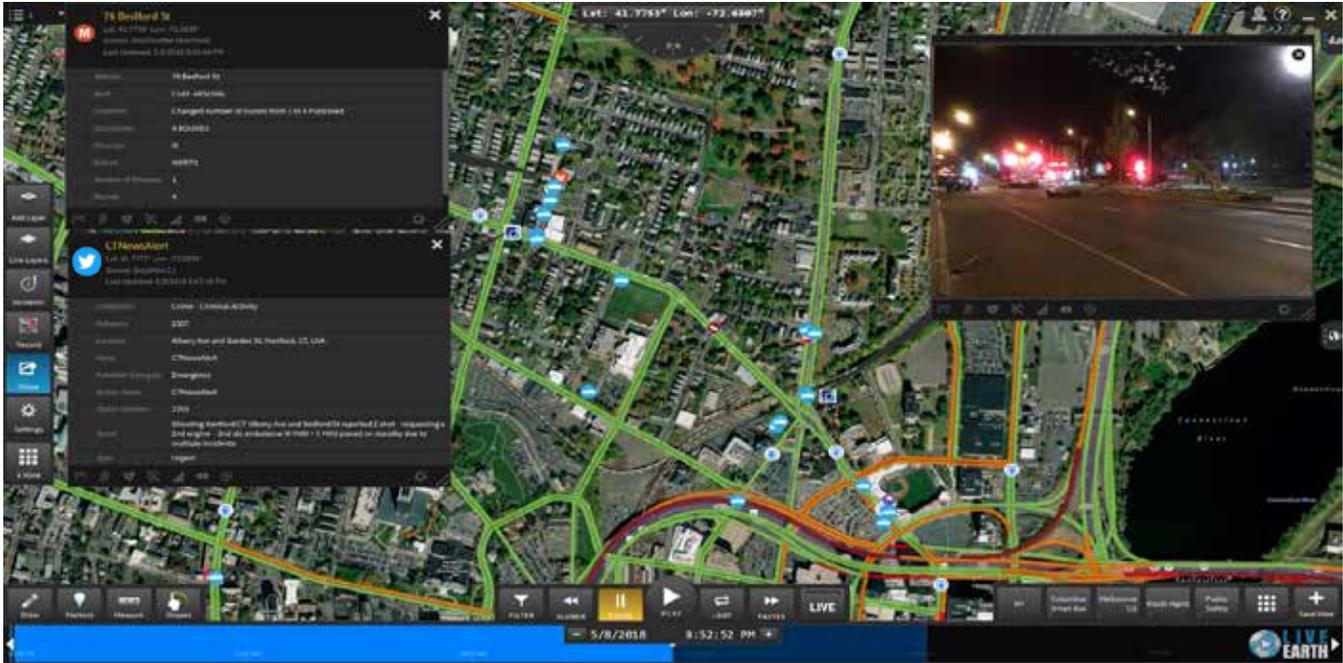


While data is essential to police operations, too much information can create overload and lead to analysis paralysis.

Using the Live Layer's function, officers and command staff can maneuver maps, track assets, and adjust data streams to reflect only the most relevant information. Reactive and intuitive, the system allows users to turn individual layers on or off, fine-tune display icons, populate heatmaps, set geofences, and change visual preferences— all with just a simple mouse-click.



Accelerate Coordination with Inter-agency Operability



Collect, analyze, and disseminate information with neighboring departments to create a force multiplier.

Real-time strategies and unified tactics promote interoperability and facilitate proactive policing over county lines and across state borders. Unfortunately, the tendency to engage in siloed communication can take precedence over best practices —especially in fast-moving situations. Not so with Live Earth.

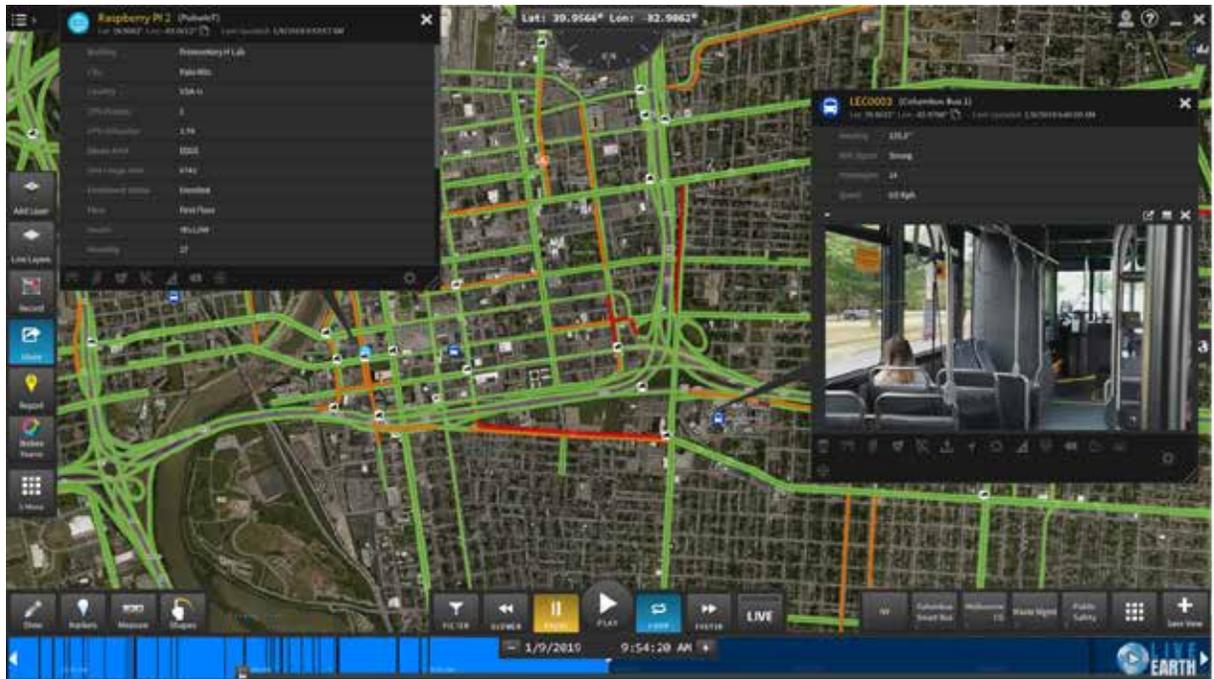
Departments can configure the software to develop lines of coordination with adjacent local, state, federal, and tribal enforcement agencies; securely sharing video sources, audio files, still images, building schematics, and in-house analytics, all without adding to their growing to do list.

Eradicate Customer Lock-in with Vendor-Agnostic Tools

Government solutions shouldn't come with buyer's remorse. That's why Live Earth created a vendor-agnostic tool that enables your department to add and remove technology solutions as your needs change, and your operation grows.

Because Live Earth integrates with a wide variety of technology partners, you can freely swap vendors without exceeding budget guidelines and without the need to needlessly rebuild your command center from the ground up.

Reconstruct Scenes with Intuitive Evidence Collection



With the rise of predictive policing practices and the added benefit of digital intelligence, it's becoming more and more challenging to aggregate sources, analyze embedded data, and obtain enough evidence to accurately investigate and prevent further crime.

The landscape is changing for police investigators worldwide. Gone are the days of the three-step process of driving to the location, collecting physical evidence, and questioning witnesses. Today, detectives must recreate crime scenes and construct scenarios based on a multitude of digital evidence including security camera feeds, traffic enforcement cameras, GPS data, gunshot detection sensors, license plate readers, smartphones, and personal activity trackers.

However, using Live Earth, you can unlock all this information and more with a touch of your finger. In addition to viewing incident specifics, you can incorporate mapping tools to measure distances, shift viewpoints, pan camera angles —even fast forward and rewind time.



Our city buses operate with 8 HD cameras on board. Through the Live Earth platform, we can track their modems and when a call comes in, we can locate the bus through the interactive timeline and retrieve video feeds from the camera's video management system for review. This significantly decreases the time it takes to solve crime in our community through enhanced situational awareness.

*Chris Hill
IT Manager, Elk Grove Police Department*



The Solution

Information drives police operations. Without it, first responders are left in the dark, forced to unravel the pieces as they go. Disparate information systems, dysfunctional data organization, and siloed communications lead to dangerous street conditions and unfavorable outcomes for all. Not only do these outdated practices hinder the ability to preserve life and prevent tragedy, but they also create a bottleneck for the investigators tasked with recreating the scene and securing court evidence.

Timing is everything in this industry. But the simple fact is, right now, police are at a distinct disadvantage. The public and even the criminals themselves have access to more high-end technology than a majority of our nation's police departments.

In addition to policing practices, court systems are also feeling the crunch when it comes to juror expectations. According to the National District Attorneys Association Executive Director, Nelson Bunn, "We are experiencing a 'CSI effect,' where juries are expecting digital evidence in many cases."⁵ In essence, it's becoming necessary for prosecutors to present overwhelming digital proof, or risk losing credibility in the courtroom.

Public perception is fleeting, and expectations are high. When a department fails to meet community demands, judgment is swift and unforgiving. At the low-end organizations face verbal discontent; at the high-end irreparable damage to include eroding trust, widespread uncooperativeness, and prolonged litigation. Positive public relations campaigns and social outreach can only account for so much. Police departments must inspire their personnel to perform their duties to the highest degree of accuracy; emboldening those on the front lines with the tools of tomorrow.

Live Earth equals lives empowered. Every member of your team, every day. Through speed, functionality, and enhanced analytics, we support the mission-critical functions of today's police departments with an eye towards the future and a salute to the shield.

Ready to learn how Live Earth can help your department unlock the power of real-time?



Schedule your demo today
by calling (888) 813-4551
or visit us online at
www.LiveEarth.com

⁵ Police Executive Research Forum. (2018, January). NEW NATIONAL COMMITMENT REQUIRED: The Changing Nature of Crime and Criminal Investigations. Retrieved from <https://www.policeforum.org/assets/ChangingNatureofCrime.pdf>



Live Earth produces the world's fastest live map. Live Earth is a Real-Time visualization platform that connects data streams from various systems, sensors, vehicles, and video, providing one operational view. Its unique and interactive features like play, pause, and rewind, instant alerts, and out-of-the-box integrations, are intuitive and easy to use.

Live Earth was originally developed for military use and is trusted to manage complex and critical operations. The platform is CJIS ready and SOC II compliant and designed to protect sensitive information. Live Earth is a trusted solution for top public safety and physical security organizations, providing critical information and proactively helping solve real-time problems that require a combined operational view.

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