FIRST ALERT
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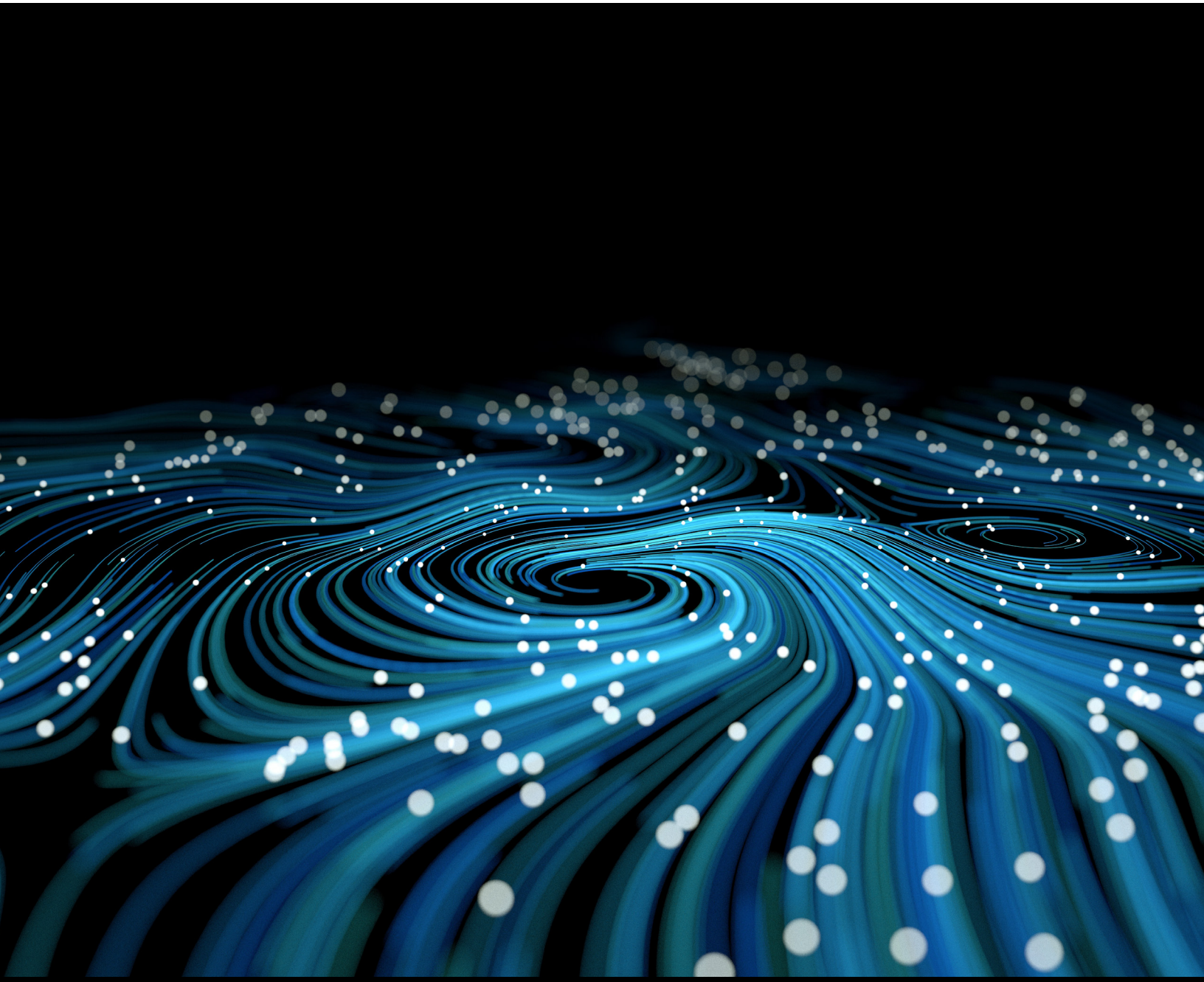

WHY REAL-TIME ALERTING IS IMPORTANT

FOR A SAFER, MORE TIMELY RESPONSE

POLICE 1

GETTING THE EARLIEST POSSIBLE WARNING OF CREDIBLE INCIDENTS HELPS PUBLIC SAFETY AGENCIES PREPARE AND RESPOND QUICKLY AND APPROPRIATELY

Whether an accident, a natural disaster, a mass-casualty event, a pandemic, or a military invasion, on any given day millions of people around the world turn to social media tools for early notification of breaking news.

With 2.89 billion monthly users on Facebook and 500 million tweets sent per day (almost 10,000 tweets per second), there is much more to social media today than ever before.

In many cases, eyewitness videos posted to social media give the first inkling of a critical situation even before 911 calls come in or news organizations break the story. Having access to public social media can give first responders the earliest indication of a critical situation and keep them updated in real time.

Some of the earliest indications of the 20-car accident during a squall on I-81 northbound in Schuylkill County, Pennsylvania, in March 2022 came from publicly available social media videos. State, local and transportation officials used social media to communicate with the public, advising them to stay away from the area and seek alternative routes while sending updates on the situation.

We are also seeing the importance of social media as the invasion of Ukraine continues to unfold and users livestream the destruction of cities and villages, document the plight of trapped citizens and refugees, and report eyewitness accounts of attacks. Citizens have now become quasi-journalists by virtue of the smartphones in their pockets – and their stories reverberate across the globe within moments.

In the geopolitical sphere, governments depend on public and crowdsourced information when traditional sources are disrupted. By providing multiple eyewitness accounts from the ground, public information allows agencies to determine the veracity of accounts and make decisions based on many sources, including audio and video of incidents.

In the world of public safety, however – where minutes of delay can lead to lost lives – social media alone isn't enough. With the explosive growth of connected devices and other sources of real time information, like blogs, information sensors, and the deep/dark web, technology is needed to identify and deliver critical breaking information to ensure a timely and appropriate response.

THE FIRST MOMENTS OF A CRISIS ARE KEY

The first moments of an emergency event – like an explosion – are often chaotic. Causes of an explosion could range from a construction

accident to infrastructure deficiencies to the work of bad actors – all having different implications for first responders and the public. Facts must be determined quickly in order to facilitate an informed response, rescue survivors and secure the scene.

"Providing first responders lead time is critical in responding to a public safety emergency," said Paul Tierney, senior vice president at Dataminr. "Decision makers need clarity and context as an event unfolds to effectively manage their operations. This maximizes the time they have to understand the situation and respond effectively with speed and confidence."

First Alert, Dataminr's product for the public sector, delivers real-time, breaking news alerts to first responders within their areas of responsibility, so they can make decisions that save lives when time matters most.

Because social media, blogs, sensors and the dark web are generating billions of data points every day, separating the most relevant signals from noise is increasingly challenging for one person or one organization on its own. First Alert ingests, processes and alerts from these sources in seconds – to provide public safety agencies the first glimpse of breaking news events.

First Alert's breaking news and alert updates provide clarity as events like the following real-life incidents unfold, giving first responders valuable context and real-time information that helps them make informed decisions, take action more quickly and deliver an effective emergency response.

FOREWARNED IS FOREARMED

In a major city, Dataminr's First Alert delivered a breaking news alert about a vehicle that crashed into an outdoor dining structure.

In any such incident, questions must be answered that will affect how quickly and how well-prepared emergency responders can be upon arrival to the scene and what actions they will be prepared to take to ensure the safety of the public and first responders.

One of the first questions to ask is, what was the motive? Was it a deliberate act to harm the public? Should law enforcement be on alert for a repeat incident? Will first responders be targets?

Or was it an accident? Did the driver have a medical emergency and unintentionally crash into the structure? Are there multiple major traumas or minor injuries?

How extensive is damage to the structure? Is the building in danger of collapse?

What passengers or cargo did the vehicle carry? Did the crash trigger a gas leak or hazmat incident at the site? How large an area should be evacuated?

First Alert's breaking news alerts included videos and photos that eyewitnesses at the crash scene had posted to social media moments before. These real-time alerts were critical to the department's quick assessment of the likely motive before arriving at the scene, so responders had enhanced situational awareness and contained the scene safely.

IN THE EYE OF THE STORM

Hurricane Harvey was the first natural disaster in which social media and map apps played an important role. As many of the streets of Houston and environs were flooding, the city's emergency management system was inundated with 911 calls. Residents posting videos of rising floodwaters and calls for help became more effective in disseminating information than official channels were, leading residents with monster trucks and boats to self-organize rescues when emergency personnel were overwhelmed or cut off by floodwaters.

Today, emergency response agencies commonly rely on such platforms as a critical emergency communication tool.

In January 2017, a series of storms swept through the southeastern U.S., spawning tornadoes and wreaking destruction across several states. First Alert delivered early alerts on the increasingly dangerous weather systems, providing critical, real-time information to first responders. Radar and eyewitness videos tracking the development and movement of tornadoes enabled emergency response agencies to warn the public. Photos of damage posted by storm chasers and survivors included in First Alert's breaking news alerts informed responders of downed power lines, blocked and flooded roads and other dangers, helping them identify areas in need of immediate assistance.

Dataminr's AI platform cross-correlates official weather reports and sensor data with eyewitness accounts from people in the eye of a storm to provide a clear understanding of extreme weather events as they happen, as well as ongoing issues like sewage backups that can ensue. First responders are equipped with the latest information available so they can alert those in the path of the storm and coordinate emergency response in the wake of destruction.

PLEASE PREPARE FOR LANDING

In May 2021, authorities in Belarus ordered a Ryanair flight to make an emergency landing in the capital city of Minsk after reports that an explosive was onboard the aircraft. Officials then boarded the plane and arrested Roman Protasevich, the former editor and founder of an opposition blog and social media channel, causing global condemnation and suspension of flight routes.

The first signal of this event came when Dataminr alerted that Ryanair Flight FR4978 from Athens, Greece to Vilnius, Lithuania had declared an emergency based on information from a flight sensor. As the incident unfolded, First Alert provided real-time updates as the situation evolved, including the eventual realization that Belarusian authorities had directed the flight to land in Minsk in order to arrest Protasevich.

TALKING MACHINE TO MACHINE

As valuable as social media has become, the proliferation of Internet of Things (IoT) devices – connected devices that can exchange information directly with other devices via the internet – are proving equally, if not more, valuable and reliable than human-generated social media in certain circumstances. From everyday devices like smartphones to tsunami warning systems to vehicle transponders, there are expected to be more than 18 billion IoT devices in use in 2022, according to Ericsson.

Dataminr integrates publicly available sensor and IoT data streams into their AI platform.

An example of a sensor-to-sensor alert happened in January 2022, when the Forbes Avenue bridge in Pittsburgh collapsed while several vehicles were crossing it. A signal from public sensor data reported by First Alert to emergency responders allowed them to respond immediately to the incident, closing off the roads leading to the bridge before rush hour. Responders were able to send the necessary equipment and groups to assist those trapped after the bridge collapsed.

HOW DOES DATAMINR'S AI PLATFORM WORK?

First Alert, powered by Dataminr's AI platform, processes data from hundreds of thousands of public data sources to detect the earliest signals of breaking news, with real-time alerts that give first responders situational awareness and advance notice to make informed decisions quickly and confidently.

When a social media post is published, for example, the AI engine receives and processes that public post instantaneously as a real-time input. The platform cross-correlates inputs about an event from multiple data sources, often in multiple different formats including text, images, video, sound, and sensor data. Along with the contents of the post, First Alert sends a breaking news alert to users by email, mobile or web-

based notification that includes a one-sentence summary, or caption, of the event.

The information for these captions is derived from data sources about an event to produce short summaries that are more understandable for users and effectively reduce the time between alert delivery and a customer's first response.

Users have access to the entire First Alert platform but can personalize the type of alerts they receive, whether by subject matter, geographical location, importance level or other user-defined criteria, so they only receive alerts aligned with their interests or needs. This ensures the right people within an organization receive the right information and accelerates informed decision-making for a faster, safer response.

RESPOND WITH SPEED AND CONFIDENCE

The ability to ingest and process data from the broadest possible set of public sources in real-time is transforming the way information is delivered to public safety organizations.

"There is no longer a single 911 call coming into a dispatch center, with information flowing only from that call," said Tierney."

Social media platforms, along with public sensor data streams and even chatter on the dark web, all provide useful information that can give insight into breaking news incidents that enable emergency response and other public safety organizations to predict, prepare and respond to emergencies.

"The information is out there," said Tierney. "The key is being able to use that information at scale and to help public safety organizations protect their communities."

In public safety, credible real-time information can be the crucial difference in keeping your agency and community safe.

ABOUT THE AUTHOR

Laura Neitzel is Director of Branded Content for Police1. She is passionate about bringing information to life that improves the safety and well-being of first responders, public servants and the citizens they serve.

ABOUT THE SPONSOR

First Alert, Dataminr's product for the public sector, provides the earliest indication of breaking news, enabling the fastest response to critical events. First Alert uses artificial intelligence to detect high-impact events from within 250,000+ publicly available information sources and delivers real-time, breaking news alerts to organizations around the globe. For more information go to www.dataminr.com/firstalert.