ConnexiCore

COMMERCIAL **UAV** DRONE FLIGHT SERVICES & SOLUTIONS

Improving data collection, analytics, & decision support for industry.

UAV Benefits for Forensic Accident Investigation

DRONE: CSI

Using Drones for Forensic Accident Investigation

ConnexiCore™ public safety drone services can provide forensic aerial (UAV) drone data for public safety and first responders to enhance and speed up investigations for auto accidents, aviation, fire, rail, marine, utility and other catastrophic accidents that come without warning. When there's been an accident of some kind, whether a failure of a piece of equipment or a building that has collapsed or an aircraft has crashed, investigators need to capture the scene exactly the way it was left before anybody comes in to clean it up. From above or as we say in the industry "a bird's eye view" drones can be deployed to acquire an aerial collection of multiple data types (i.e. high-resolution imagery, 4K video, 3D models, thermographic images, etc.) then provide investigators with that data for analysis and interpretation.

As the drone industry continues to soar, public safety agencies are gaining life-saving benefits from UAV technology and it's here to stay. According to a 2017 report by *a Research Analyst Group*, drone spending by county and municipal governments will reach $80 million by 2025—mostly for police, fire and rescue agencies. Drone use by emergency services is up 82% this year already.

Collecting Time Sensitive Data Faster

For Law Enforcement, drones help catch bad guys, rescue disaster victims, and reconstruct traffic accidents. In fact, agencies such as the National Transportation Safety Board (NTSB) now recognize the value that drones, and drone mapping software represent for accident investigations.

ConnexiCore uses "mission specific" flight and mapping software from several cutting edge geospatial technology partners to investigate accidents without wasting time or resources deploying manned helicopters. In many cases, a traffic accident scene scan takes less than 10 minutes with a drone.

Following a serious traffic accident, ConnexiCore can be deployed rapidly, to photograph as much as 5 acres over an accident scene in under 45 minutes. Utilizing artificial intelligence integration within the drone we can fly, capture and geo-tag each image, and preserve the entire scene in 3D, providing more in-depth insight into the accident's cause and surrounding factors. The bigger benefit is it requires only a fraction of the time it would take a team of officers and investigators with boots on the ground.

With a national network of highly qualified FAA licensed pilots (many of which are firefighters, EMS, and public safety experts) ConnexiCore is can rapidly assist and help first responders act more effectively on the scene by capturing aerial information during natural disasters and accidents.

Increase Officer Safety in the Field

The same drone technology that keeps accident investigations short also keeps officers safe. Once an aerial incident scan is complete, investigators can review, analyze, and report on the data from their office, reducing the time needed to stop traffic, which in turn creates a safer experience for drivers and officers. Additionally, officers eliminate the need to travel back and forth to dangerous roadways to collect more data, such as road markings. One flight can yield all the data needed to wrap up an investigation.

DRONE: CSI

Using Drones for Forensic Accident Investigation

The Accident Scene

When cars crash, they get in the way of everyone else on the road. A long line of automobiles trails out behind the scene, its drivers waiting patiently for the normalcy to resume. Cleanup is, of course, what they're waiting on and traffic has zero probability to move until the way is clear. But before cleanup can even begin, an investigation team has to gather accident scene data.

State Police and local Fire Departments always tries to clear a crash scene quickly to prevent big backups, but it takes a long time to take the measurements and photos necessary to reconstruct a crash scene. First Responders are "under tremendous pressure" when they're gathering evidence in these situations and rightfully so to have a highway closed for five or six hours to investigate a scene creates a lot of tension..
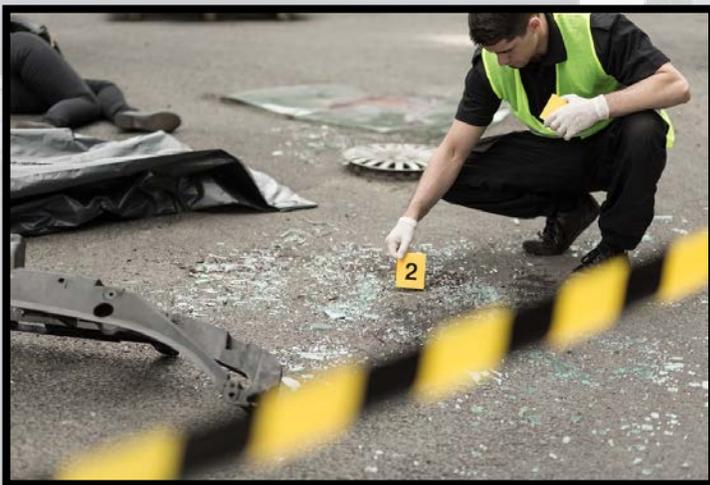
Get a "Birds-Eye-View" of the Entire Scene

Because drone flights cover an entire scene at once, data points are rarely missed as they might be in a typical "walk-around" investigation. Having an aerial perspective makes a big difference and in addition, ConnexiCore can generate real-time live video feeds to an interoperable command and control center to triage other video feeds for incident. This concept of real-time viewing eliminates the need to upload and process drone imagery, allowing authorities faster access to data, resulting in quicker decision-making in the field.

Reconstruct Imagery and Markup Maps

Once the drone imagery is captured from the scene, it's processed into high-resolution maps and 3D models for further inspection and analysis which can then be marked-up with notes, measurements, and annotations. The ability to take measurements in the software almost immediate is an invaluable tool to investigators. It generates comparable results and because the drone captures the entire scene in 3D, investigators can permanently archive the digital reconstruction. It's also easy to share maps and 3D models with collaborators back in the office via ConnexiCore's secure cloud portal.

It's universally understood that boots on the ground will always be needed but a drone service partner is a very reliable and efficient backup to traditional evidentiary collection after an accident takes place.

DRONE: CSI

Using Drones for Forensic Accident Investigation

The Process

When accidents occur, engineers and other experts measure and photograph accident scene and the surrounding environment, as well as damage sustained by vehicles, building, bridges, and other elements. This collected information is later used to perform accident reconstruction. Use for Accident Reconstruction drone applications that makes a lot of sense. On the scene of a collision, drones could help troopers clear the road faster, reduce the risk of a secondary accident or officer fatality, and alleviate the burden of investigative training procedures among troopers. For insurers, they can improve claims data quality and expedite the process. This one-stop drone data surveying process delivers excellent trial exhibits that represent the real environment and not a computer-generated simulation.

ConnexiCore's public safety fleet utilizes the most advanced state-of-the art technology when collecting data. Our UAV's are equipped with the most innovative technology and high-quality cameras developed for forensic data collection. Our drones guarantee precise, accurate, and high-quality data including 4K videos and high-resolution images.

Crash Investigation Process Using Drones

1) CRASH SCENE

2) DRONE DATA COLLECTION

3) 3D MODELING & ORTHO IMAGES

4) VISUALIZATION & ANALYSIS

5) ACTIONABLE TASKS

In Conclusion

Many hours flying drones dedicated to data collection make our team one of the most experienced teams in the business. We understand the necessity to perform forensic data collection and analysis. We have a proven record of our work and are comfortable with challenging and time critical cases. We gained our experience performing multiple drone aerial mapping services including but not limited to: roadway aerial mapping, vehicle/construction/3D modeling, transportation engineering drone data collection and mapping inspections and services.

Despite the FAA regulations, the most critical element in drone operation safety is the remote pilot's experience. This not only includes experience with flying the drone itself, which is critical for the safety of the public, but also includes experience in operating the camera. The way that images are taken, the overlap between images, the operation speed when images are taken, and other conditions are important for any successful drone aerial mapping project.