AERIAL INTELLIGENCE.
SECURE INTEGRATION.
INSTANTIALLY CONNECTED.

MOTOROLA SOLUTIONS AERIAL SUITE
DRONES - A VALUED PUBLIC SAFETY RESOURCE

IMMEDIATE ON-SCENE AWARENESS

75% of law enforcement survey respondents say deploying video and analytics software is critical.

CAPABLE RESPONDER

70% of capabilities currently provided by helicopter response can be delivered by drone response.

COST DISRUPTER

1/10th of the cost of dispatching an officer and police vehicle to the scene.
REAL-TIME INTELLIGENCE COST DISRUPTION

Proven Effective - Unaffordable

Critical Resource Intensive

Aerial Suite - Today and Tomorrow

Equipment cost

Personnel cost

$6M

$2500/hr

$1M

$700/hr

$60,000

$120/hr

$50,000

$70/hr

$20,000

$20/hr

~$0/hr

$10,000
Drones used as a first responder gives us much better situational awareness, and what that means to the public is that our police officers have the best data before they ever get to a call. It improves officer safety, community safety and suspect safety.

Captain Vern Sallee, Chula Vista Police Department

**Chula Vista drone program**
- Launched October, 2018
- Utilizes Motorola Solutions Aerial Suite
- Selected for the San Diego Unmanned Aircraft System (UAS) Integration Pilot Program (IPP), sponsored by US DOT and FAA
- Provides First-On-Scene intelligence; overwatch and perspective on scene developments
- Allows incident management and coordination
- Delivers live decision-quality data (DQD)

**Drone activity by the numbers***
- Total number of flight responses - 1037
- Average response time / first on scene - 195.62 seconds
- Drone response avoided dispatching patrol unit - 229
- First on scene - 480
- Number of arrests - 142

* January - December 2019

**Top 5 call types using drone response**
- Disturbance - Person: 133 (33.08%)
- Domestic Violence: 91 (22.64%)
- Traffic Collision: 78 (19.4%)
- Psychological Evaluation: 59 (14.68%)
- Assault: 41 (10.2%)
Tijuana drone program

- Announced May, 2019
- Utilizes Motorola Solutions Aerial Suite
- First "drone as a first responder" program in Mexico
- Dispatched to 9-1-1 calls with real-time video feed
- Supports emergency response efforts within a 3 km radius of Tijuana Public Safety headquarters

Drone activity by the numbers*

- Total number of flight responses - 1325
- Average response time / first on scene - 38 seconds
- Drone response avoided dispatching patrol unit - 775
- First on scene - 800
- Number of arrests - 85

* June - December 2019

We have seen the benefits of drone use for public safety first-hand, and are extremely proud to be at the forefront of adopting the technology.

Marco Antonio Sotomayor Amezcua, Tijuana Secretary of Public Safety
**TODAY AND TOMORROW: AERIAL INTELLIGENCE. SECURE INTEGRATION. INSTANTLY CONNECTED.**

**REMOTE DEPLOYMENT, OPERATIONS**
Engage a first, first response by accelerating eyes-on-the-scene to better guide incident response*.

Manage drone fleet, control video feeds, view alerts directly from public safety operations center*.

**VIDEO SOLUTIONS PLATFORM**
Further expand reach of video solutions platform that includes mobile and fixed cameras*.

Instantly select and mobilize live video streams to operators, field commanders and response teams*.

**BIG DATA UNIFICATION**
Unify drone video with public safety data (CommandCentral) to enhance AI performance, extract insights.

Transform video / data into real-time intelligence, share immediately and improve workflows*.

**TRUSTED AND SECURE**
Employ a trusted, secured technology stack to protect critical information.

Shield sensitive operations and video evidence with security and compliance management*.

Manufactured in the U.S. to ensure sensitive data and system operations are not compromised*.

* Release 1
THE AERIAL SUITE PROVIDES

- Aerial Telepresence software that enables remote drone operations
- One-to-many real-time video streaming in full HD from the drone
- Ecosystem of command software, applications and drone hardware
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- Connected with CommandCentral and Integrated Workflows
- Real-time Intelligence and Situational Awareness
- MSI MC Group Video (MCGV)
- AI assisted flight controls
- AR map overlays for enhanced awareness
- Trusted and Secure Hardware
- Made in the USA
- Custom user experience for Public Safety
**APPLICATION SERVICES**

**Aerial Pilot** is a smartphone / tablet client for iOS. The client securely connects the drone to Aerial Command to provide local control, safety and visibility for drone operations.

**Aerial Watch** is a smartphone / tablet client of iOS and Android. Securely view live video streams, receive alerts regarding missions, and view drone location updates with Aerial Watch.

**Aerial Command** is a web-based client with full command center capabilities for drone operations. With Aerial Command you can remotely operate any drone, view live streams, run custom reports, and view and control media archives.
AERIAL SUITE: ARCHITECTURE

LEGEND
- Encryption
- Video
- Telemetry
- Control

Drone

INTERNET

Aerial Suite

SECURE CLOUD

ENTERPRISE APPLICATION

Aerial Command

Aerial Watch

Aerial Pilot

INTERNET

LTE

WIFI

Aerial Watch
**1: INITIALIZE**

Dispatch a field operative on-site with a drone and iPad. Using the Aerial Pilot app, create a geofence, turn on the drone, and verify preflight checklist. The drone is now ready to be connected by the remote operator.
AERIAL SUITE: HOW DOES IT WORK?

2: CONNECT, FLY

Once connected, the remote operator initiates drone flight and is able to effectively control the drone using Aerial Pilot, our simple and intuitive interface. Advanced automated flight features pilot the drone to predefined locations or routes. Geofences aid in avoiding hazards and make it impossible for the operator to crash the drone.
AERIAL SUITE: HOW DOES IT WORK?

3: WATCH, STREAM
Livestream to interested parties using Aerial Watch. Real-time video is viewable from both the computer and mobile devices.
**AERIAL SUITE: HOW DOES IT WORK?**

4: MANAGE DATA, USERS AND DRONES

Your data is stored on a private portal to ensure security and streamline access. The portal provides the tools to create, archive, and manage everything you need for your operation.
Our Aerial Suite provides secure portal access for you, your team and your operations. Authorize member access, administer privileges and provide encrypted streams to enable your team with a secure and safe operation.
Drone deployment
The drone is easily launched before the search warrant is executed. This gives the officers time to prepare and the telepresence officer to connect and control the drone.

Drone mission
Drone provides overwatch and coverage to areas of the location that are not easily accessible to ground units. It can easily chase and track fleeing suspects on foot.

Escalating event
Search warrants have a high ceiling of risk because the officers do not know what is inside the house, guns, explosives, etc.

Resolution and benefits
Officer safety risk is reduced, video evidence captures events within frame, headquarters maintains situational awareness of their patrolling officers.
**USE CASE**

**DRONE AS A FIRST RESPONDER**

**SITUATION**

911 call reports a fire spotted at the top of a remote mountain

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**Drone deployment**

Remote drone pilot deploys drone from a pre-positioned location to fly towards the 911 location, avoiding traffic and utilizing the safest and most economical path. Once on station, uses high magnification zoom cameras to inspect the situation.

**Drone mission**

On station, drone delivers real-time, mobile, video intelligence to Emergency Service agencies.

**Resolution and benefits**

Drone is on-scene faster than a human responder, saving valuable time. Real-time video allows the agency to dispatch the proper resources.

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**EXAMPLE OF DRONE DEPLOYMENT AREA FOR 911 EMERGENCIES**
SUMMARY
MOTOROLA SOLUTIONS AERIAL SUITE

- Cost-effective first eyes on scene video solution
- Secure approach (end-to-end technology stack, NIST security standards, American components and US-manufactured)
- Safety focused (remote deployment, objection detection, collision avoidance techniques)
- Regulations compliant as appropriate (FAA, FCC)
- User interfaces and experience designed specifically for Public Safety operations
- Integratable into Motorola Solutions’ mission-critical workflow