Applying Artificial Intelligence to identify Unmanned Aerial Systems (UAS) as early as possible to save lives and protect resources.

OVERVIEW

Artificial intelligence-based capability detects UAS day or night, at a distance that allows effective security response Integrates with an EOIR camera system via an artificially intelligent equipped computer. Automatically notifies resources to provide faster response time and take defensive and offensive action. Tracks the UAS location in real time to provide a better defense.

TECHNICAL

Even dedicated and trained personnel using the best camera system can't provide 100% real-time observation. A pro-active solution is needed to detect UAS threats to allow an effective defense. Exigent-DR, an artificial intelligence-based UAS detection capability developed by Arcarithm for the US Army, offers that solution.

Exigent®-DR provides a reliable, integrated method to:

Detect — autonomously detects UAS against any background, day or night.

Identify — instantly analyzes imagery using AI algorithms to determine type of UAS.

Alert — automatically notifies security officials via text message or email showing location and type of UAS.

Track — follows the UAS location in real time.

Rugged EOIR Sensors
High resolution optics with pan/tilt and zoom capability.

Optimal Sensor Planning / Scheduling Algorithms
Optimally plans and tasks one or more sensors simultaneously.

AI Fusion-Based Detection and Identification
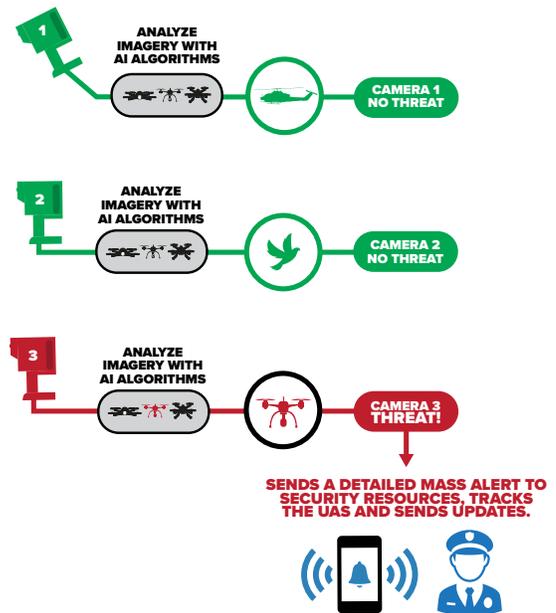Low false alarm rates, high detection and identification accuracy.

3D Track State Estimation
Reports position, velocity and covariance.

Distributed or Centralized Operation
Single operations center or multi-vehicle cooperative CONOPs.

How Exigent-DR Works

1 ANALYZE IMAGERY WITH AI ALGORITHMS — CAMERA 1 NO THREAT

2 ANALYZE IMAGERY WITH AI ALGORITHMS — CAMERA 2 NO THREAT

3 ANALYZE IMAGERY WITH AI ALGORITHMS — CAMERA 3 THREAT!

SENDS A DETAILED MASS ALERT TO SECURITY RESOURCES, TRACKS THE UAS AND SENDS UPDATES.

SECURITY / OPERATION

Exigent®-DR security features include role-based login, application authentication and message encryption. Further, the Exigent-DR Application Programmer's Interface (API) operates inside a docker container isolating the API from the rest of the system as an extra layer of security, while ensuring the software does not conflict with other required system dependencies.

Arcarithm provides required training on how to operate Exigent-DR, and how to understand the output, with onsite training available. A training manual is provided, and Arcarithm provides call center support as well.

SYSTEM REQUIREMENTS

Power	Exigent-DR computer operates off of facility 110V power
Internet Access	Exigent-DR connects to the Internet via the facility WiFi
Alert Access	Alerts are sent to computers and/or smart phones via the internet

Exigent-DR is installed by Arcarithm trained technicians.

PRODUCT DETAILS

Manufacturer	Arcarithm
Product Name	Exigent®-DR
Version	2020
Manufacturer Part Number	A2020EXDR
Product Type	SAAS
Delivery Method	Hand delivered for installation. Updates provided via remote digital upload, requires access to the internet

ABOUT ARCARITHM

Arcarithm delivers a depth of understanding and operational maturity beyond the capability of most companies. Our experience with every aspect of algorithm design, training, deployment and evaluation allows Arcarithm to produce quality products quickly and effectively, with the highest levels of reliability and accessibility. Arcarithm has been developing and providing services to the U.S. Military for more than seven years.

ARCARITHM

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