TERRESTRIAL SENSOR CAPABILITIES

Areté is an advanced science and engineering Employee-Owned Small Business that provides innovative sensing solutions — from scientific discovery through prototyping to production. Areté's smart systems include active and passive sensors, real-time processing, software, and complex algorithms that operate from seafloor to space.
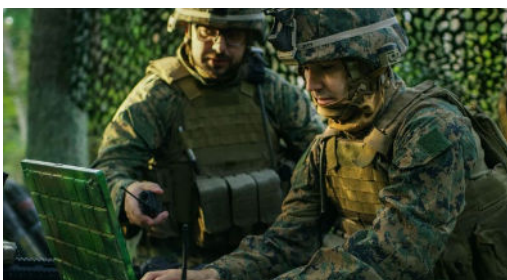
Areté
DISCOVER. DEVELOP. DELIVER.

LiSA – LIDAR for Situational Awareness

- **TRL:** 9
- **Discriminators:** Low Size, Weight & Power, long range (2Km).
- **SWaP:** 10"x 29.5"x 12", 30lbs, 250W max, normal operation 120W.
- **Status:** Full Rate production, capable of higher rate.
- **Operations:** Currently deployed to Europe on MEDEVAC UH-60s and SOCOM MH-47s and MH-60 Blackhawks.
- **Description:** LiSA is a state-of-the-art LIDAR delivering unparalleled levels of real-time situational awareness, especially in Degraded Visual Environments. LiSA also provides wire-strike/obstacle avoidance, and Landing Zone Assessments, reducing pilot cognitive burden.
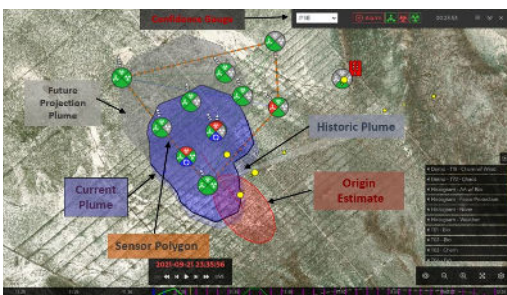

AIRTRAC-LP – For Laser Designators

- **TRL:** 9
- **Production:** Low Rate, Full Rate production starting January 2023.
- **Discriminators:** Low Size, Weight, and Power. Customizable deployment.
- **SWaP:** 2.72" x 1.94" x 1.25", 250 g w/ electronics.
- **Status:** Component of the USMC NGHTS designator system, multiple versions for different use cases.
- **Description:** Areté's standard AIRTRAC-LP is a ruggedized laser with >50 mJ pulse energy. NATO STANAG 3733 capability in a very compact, lightweight and low power consumption configuration. The athermal design provides high laser pulse energy over the full MIL-SPEC temperature range with low beam divergence and a full system weighing less than 320 grams.

TANDOM – Sensor Fusion

- **TRL:** 9
- **Production:** Full Rate.
- **Discriminators:** Sensor Agnostic, Real-Time multi-int sensor fusion for CWMD and Environmental threat mission spaces via standard I/O protocols.
- **SWaP:** TANDOM operates on a range of platforms from low swap processors to cloud installations.
- **Status:** Currently deployed on nine OCONUS locations.
- **Description:** TANDOM is a real-time, tactical software toolkit for enhancing actionable decision making. Providing inputagnostic processing, TANDOM captures inputs from sensors, video, and environmental feeds and converts them to context-based information streams.

AIMS – Automated Image-Based Monitoring Sensing

- **TRL:** 7
- **Production:** Prototyping, integrated into Ascent's Spirit Drone.
- **Discriminators:** Real-time, remote triage, documents injuries from point-of-injury to point-of-care.
- **SWaP:** Software packages on a chip, integrated into any camera – UAV, UAS, fixed site.
- **Status:** SBIR Phase III with U.S. Army TATRC.
- **Description:** Integrated software employing a Deep Neural Network and Computer Vision to remotely locate, characterize, and monitor combat casualties.

AIRTRAC-MINI

- **TRL:** 4
- **Discriminators:** Low Size, Weight, Power. Three times lighter than AIRTRAC-LP
- **SWaP:** 3"x1.5"x1.25"
- **Status:** Prototyping
- **Description:** AIRTRAC-MINI is a low-SWaP laser designed specifically for attritable applications and Group-1 UAS integration.
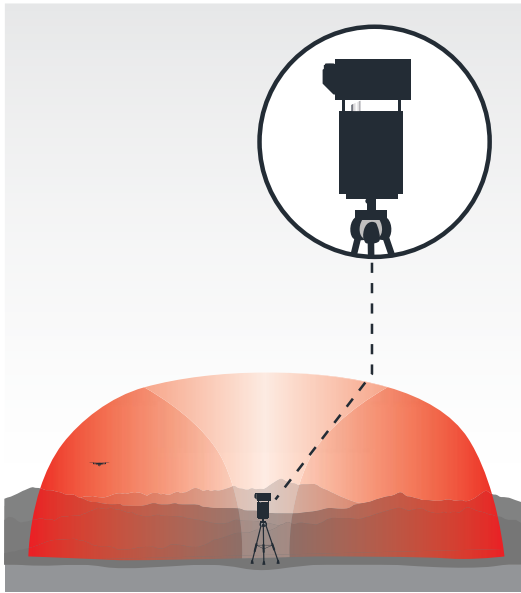

Basilisk – CUAS Detector

- **TRL:** 7
- **Discriminators:** Totally passive, low false alarm rate, identifies sUAS swarms at 1Km, larger UAVs at >2KM, one-man carry/emplacement, battery or solar powered.
- **SWaP:** 9.7" x 7.3" x 6.2" ~10lbs, 200W.
- **Status:** SBIR Phase II with SMDC.
- **Description:** A low SWaP-C UAS Detection and Tracking System for force protection applications. A tethered system comprised of modular pucks with coverage ranging from 45 to 360 degrees, with a ruggedized offboard processor.

Crosswind – Air Direction Measurement Ballistic Calculator

- **TRL:** 7
- **Discriminators:** Low SWAP down-range crosswinds measurements to 800 meters.
- **SWaP:** 9" x 8" x 3.5", 5.2 lbs, four C123 lithium batteries (12V total).
- **Status:** Phase II SBIR completed, three prototypes delivered to PEO Soldier.
- **Description:** A low-SWAP downrange crosswinds sensor with build-in ballistics calculator enhancing sniper precision at long ranges.

WATD – Wide-Area Threat Detector

- **TRL:** 5
- **Discriminators:** Hemispheric warning of UAS.
- **SWaP:** Vehicle mounted, 20W optical Power, 532 Nanometer.
- **Status:** SBIR Phase II with ONR.
- **Description:** Provides 3D day/night tracking capability of UAVs and rapid detection of chem-bio dispersal plumes. Eyesafe.