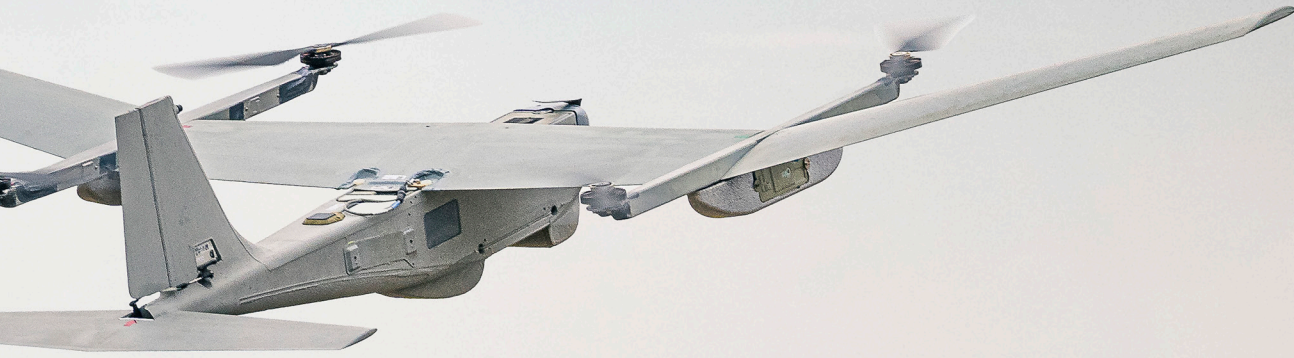




For more product information, visit avinc.com



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Product Catalog



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AV HAS DELIVERED THE VAST MAJORITY OF ALL
UNCREWED AIRCRAFT IN THE U.S. DEPARTMENT OF DEFENSE INVENTORY*

42K+ UNITS DELIVERED
WORLDWIDE

4 MM+ ACCUMULATED UAS
FLIGHT HOURS (EST)

55+ ALLIED NATIONS USE OUR LMS,
UAS, UGV & SUPPORT SERVICES

WHO WE ARE

At AV, we are relentless in our efforts to deploy technology in ways that push beyond the realm of what's possible. With each innovation, we strive to broaden our customers' horizons and elevate their capacity to make smarter, quicker decisions.

We develop technologies and solutions that enable customers to operate beyond the horizon, enabling them to see the world in powerful new ways, complete ever-more ambitious missions and overcome seemingly intractable challenges. By pushing the boundaries of future-defining technologies, we move beyond what is currently possible to create a powerful, interlocking family of products spanning missions, domains and worlds.

* Source: United States Department of Defense Unmanned Systems Roadmap 2013-2038, page 5

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GLK-OFF / / /



JUMP® 20-X



JUMP® 20



Switchblade® 600 BLOCK 2



Switchblade® 400



Switchblade® 600



Switchblade® 300 BLOCK 20



Blackwing™



DDL™
Network Antennas



Tomahawk™
Ground Control Station



T-20™

Solar Haps

Puma™ LE

Puma™ 3AE

P550™

Puma™ VTOL

Raven® B RQ-11B

VAPOR® CLE



ons



Uncrewed
Ground Vehicles

Loitering Munition Systems



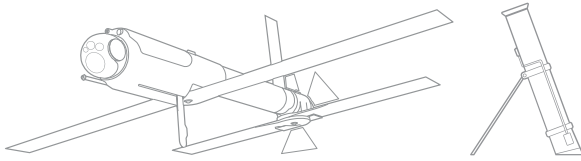


LMS

AV's Switchblade® loitering munition systems (LMS) close the gap between observation and action, giving troops the ability to identify threats and precisely deliver a lethal payload with minimal collateral effects. Their small size and low acoustic, visual and thermal signatures make Switchblade systems difficult to detect or track, even at close range.

Rapidly deployable and highly maneuverable with high-performance optics and scalable munition payloads, our LMS enable warfighters to easily launch, track and engage beyond-line-of-sight targets, including light armored vehicles, across domains. These qualities make Switchblade the loitering munition of choice in Ukraine.

Switchblade® 600 LOITERING MUNITION



WEIGHT

Munition: 33 lb (15 kg)
 AUR: 65 lb (29.5 kg)



» **RANGE**
 Up to 90+ km w/
 Forward Pass



» **ENDURANCE**
 40+ min



» **SPEED**
 Loiter: 70 mph (113 km/h)
 Sprint: 115 mph (185 km/h)



» **EFFECTS ON TARGET**
 Anti-armor &
 anti-personnel effects

FIRE CONTROL SYSTEM Tablet-based FCU with tap-to-target guidance & built-in mission planner & trainer

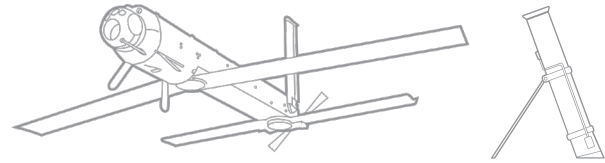
TARGETING OPTICS 2-axis, 4-sensor gimbal (Dual EO/IR) integrated sensor suite

OPERATING ALTITUDE Below 650 ft (198 m) AGL; ceiling >15,000 ft (4572 m) MSL

LAUNCH METHOD Self-contained launcher for ground, air & maritime

LETHALITY Precision strike with anti-armor warhead

Switchblade® 600 BLOCK 2 LOITERING MUNITION



WEIGHT

Munition: 36 lb (16.3 kg)
 AUR: 68 lb (30.8 kg)



» **RANGE**
 Up to 100+ km w/
 Forward Pass



» **ENDURANCE**
 50+ min



» **SPEED**
 Cruise: 70 mph (61 kts)
 Dash: 115 mph (100 kts)



» **EFFECTS ON TARGET**
 Anti-armor &
 anti-personnel effects

FIRE CONTROL SYSTEM Tablet-based FCS with tap-to-target guidance & built-in mission planner & trainer.

TARGETING OPTICS 2-axis, 4-sensor gimbal (Dual EO/IR) integrated sensor suite

OPERATING ALTITUDE 650 ft AGL nominal (ceiling: >15,000 ft MSL)

LAUNCH METHOD Self-contained launcher for ground, air & maritime

LETHALITY Precision strike with anti-armor warhead

KEY FEATURES

- » Patented wave-off feature & recommit capability
- » Enhanced frequency hopping Digital Data Link™ covering more frequencies & supporting AES-256-bit encryption
- » Intuitive touch screen tablet Fire Control Unit (FCU)
- » <10 minute system setup & launch

ALL-IN-ONE, MAN-PORTABLE, ANTI-ARMOR, SMART MUNITION SYSTEM



Best-in-Class
 Sensor Suite



Anti-Armor
 Warhead



Self-Contained
 Tube-Launcher



Mission Planning
 on FCU



Integrated Training
 Simulator (T-sim)

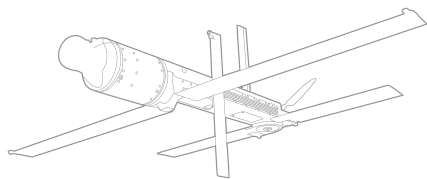


Fire Control
 System

KEY FEATURES

- » Patented wave-off feature & recommit capability
- » **MULTI-DOMAIN DEPLOYABLE** from ground, mobile vehicles & surface ships; Hardened for Maritime Environments
- » **MAX EFFECTS:** Precise lethality against static and moving heavily armored targets (combat proven targeting)
- » **ANTI-ARMOR WARHEAD** with secondary payload bay
- » **Mission Modes:** Radio Silent - operate pre- and post-launch without C2 links; Bomb-on-Coordinate - commit by geo-location without comms; Geo-Fence - plan and enforce mission boundaries

Switchblade® 400 LOITERING MUNITION



WEIGHT

Munition: 27 lb (12 kg)
AUR: 39 lb (18 kg)



» **RANGE**
Up to 65+ km with Forward Pass



» **ENDURANCE**
35+ minutes



» **SPEED**
Cruise: 70 mph (61 kts)
Dash: 90+ mph (145 kph)



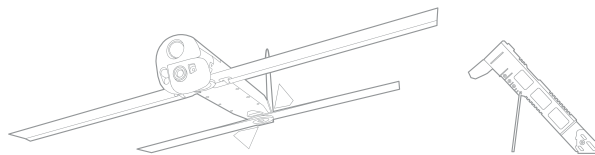
» **EFFECTS ON TARGET**
Anti-armor & anti-personnel effects

FIRE CONTROL SYSTEM	Tablet based Grip TA5
TARGETING OPTICS	Pan/Tilt EO/IR Optic Suite with hybrid ATR
OPERATING ALTITUDE	650 ft AGL nominal (ceiling: >15,000 ft MSL)
LAUNCH METHOD	Self-contained launcher for ground and mounted ops
LETHALITY	Precision strike with anti-armor warhead

KEY FEATURES

- » Patented wave-off feature & recommit capability
- » Man-portable tube launched anti-armor Low Altitude Stalking & Strike Ordnance
- » Launch, fly, track & engage non-line-of-sight targets
- » Munition performance—Static and moving tier 1-3 armor & personnel targets
- » Advanced system processor/AI engine for ATR & M Code GPS

Switchblade® 300 BLOCK 20 LOITERING MUNITION



WEIGHT

Munition: 3.7 lb (1.68 kg)
AUR: 7.2 lb (3.27 kg)



» **RANGE**
30 km with Extended Range Antenna



» **ENDURANCE**
20+ min



» **SPEED**
Loiter: 63 mph (101 km/h)
Sprint: 100 mph (161 km/h)

PAYLOAD VERSATILITY



EFP Warhead (Light/Med Armor Penetration)

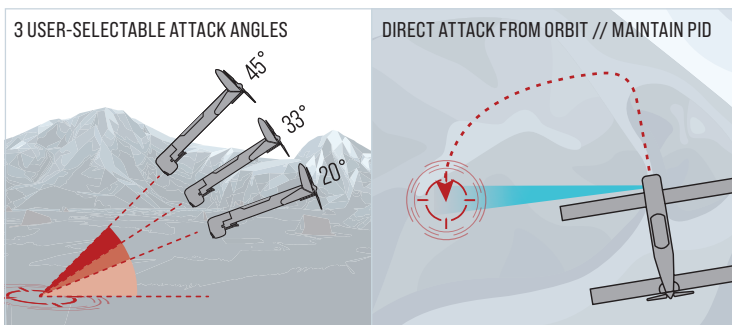


Fragmentation Warhead (Anti-Personnel Effects)

FIRE CONTROL SYSTEM	Tablet-based FCU with tap-to-target guidance & built-in mission planner & trainer
TARGETING OPTICS	Enhanced EO/IR with forward to left hand panning camera suite
OPERATING ALTITUDE	Flight <500 ft (152.4 m) AGL; supports operation >15,000 ft (4572 m) ASL
LAUNCH METHOD	Self-contained launcher for ground, air & maritime; configurable multipack capability
LETHALITY	Anti-personnel effects; precision strike with low collateral effects
EFFECTS ON TARGET	Anti-Personnel Effects (Frag) Light/Med Armor Penetration (EFP)

KEY FEATURES

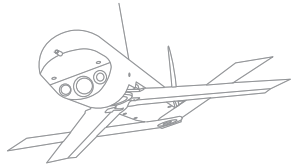
- » Patented wave-off feature & recommit capability
- » Enhanced frequency hopping Digital Data Link™ covering more frequencies & supporting AES-256-bit encryption
- » Intuitive touch screen tablet Fire Control Unit (FCU)
- » Advanced Munition—multiple commit angles, user-selectable point of detonation, left hand commit with continuous Positive Identification (PID)





Blackwing™

LOITERING RECONNAISSANCE SYSTEM



DIMENSIONS

Wingspan: 27 in (68.6 cm)
 Length: 19.5 in (49.5 cm)
 Diameter: 3 in (7.6 cm)

WEIGHT

4 lb (1.8 kg)

SENSORS Integrated EO/IR sensors—day/night operations

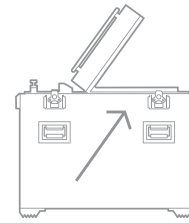
LAUNCH METHOD Underwater-to-air delivery canister, tube, MPL

KEY FEATURES

- » *Rapid response ISR*
- » *C3 tactical data relay from UAS to UUV*
- » *Modular payload*

MPL

MULTIPACK LAUNCHER



DIMENSIONS

36 in D x 30 in W x 36 in H

WEIGHT

~130 lb empty
 ~160 lb loaded

CONFIGURATIONS 6-pack standard (Alternates for 2-20 AURs possible)

MOUNTING Hold-downs for vehicle or shipboard use

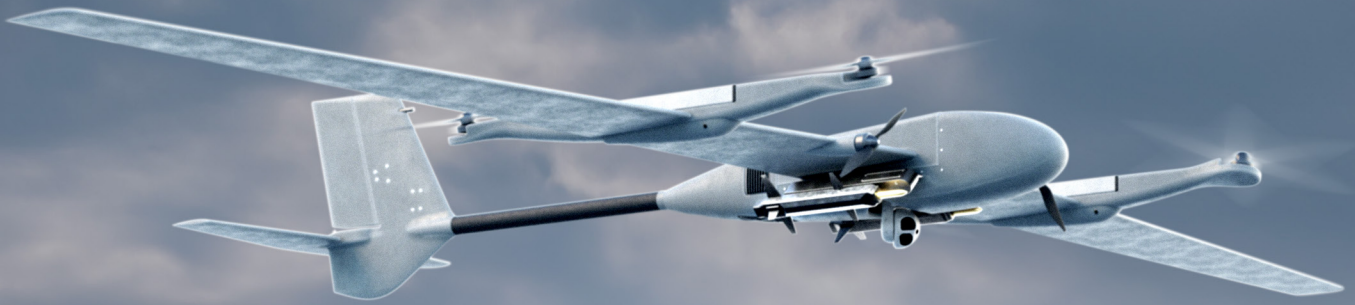
POWER Solar panel & internal battery, Shore/TacVeh power augments to maintain internal operating temps

CONTROL 100 ft remote operation control cable (FOB/COP ops cell bunker/buildings, tactical vehicles, ship CIC)

KEY FEATURES

- » *Compatible with Switchblade® 300 & Blackwing™*
- » *Rapid Reload—~30 seconds per round*
- » *Low observable remote ops*
- » *Tactical vehicle/MRAP*





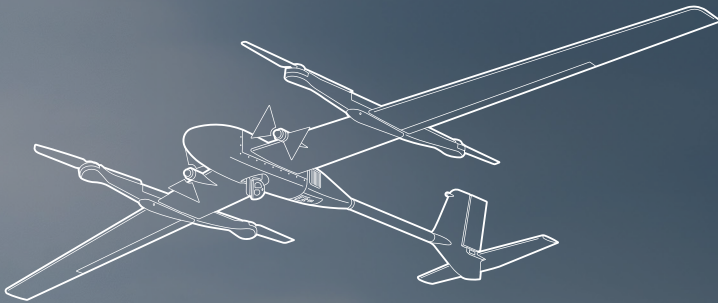
Small UAS

SUAS

Over the last decade, members of AV's growing family of small uncrewed aircraft systems (SUAS) — P550™, Puma™ LE, Puma™ 3 AE, Raven® and VAPOR® Helicopter UAS — have been adopted by more than 55 allied nations.

The reason for their appeal is straightforward. Under battlefield conditions, they have proven themselves ideal for low-altitude intelligence, surveillance and reconnaissance missions. Lightweight, rugged and easy to operate, our SUAS deliver real-time color and/or infrared imagery to ground control and remote viewing stations. With their enhanced communications and interoperability, they are critical for multi-domain operations.

P550™ ALL-ELECTRIC VTOL UAS



DIMENSIONS

Wingspan: 17 ft (5 m)
Length: 9 ft (2.8 m)

WEIGHT

Up to 55 lb (24.9 kg) MGTOW

LINK RANGE



40 km Standard;
Up to 60 km with DDL range
depending on GCS Radio

ENDURANCE



Up to 5 hr

TOTAL PAYLOAD CAPACITY



Up to 15 lb (6.8 kg)

SPEED 15-27 m/s (30-52 kts)

OPERATING ALTITUDE Max. Flight DA 14K ft (4267 m)
Max. Launch DA 10K ft (3000 m)

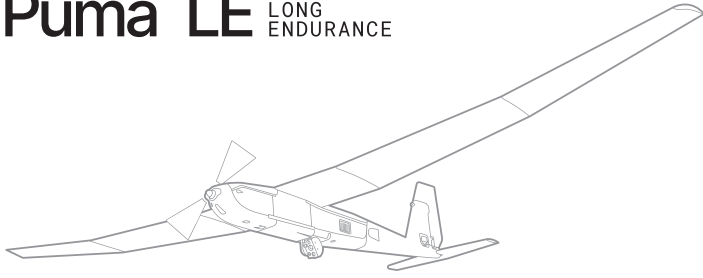
GCS Vigilant Spirit GCS with Quattro STANAG 4586 (Baseline) & Kinesis GCS

LAUNCH & RECOVERY VTOL

KEY FEATURES

- » Advanced mission system enabling secure ATR/ Autonomous missions
- » mDDL-FH // Advanced Day-Night VIO Navigation for A2/ AD Ops
- » Modular architecture supporting 3rd party payloads, radios, and control options

Puma™ LE LONG ENDURANCE



DIMENSIONS

Wingspan: 15 ft (4.6 m)
Length: 7.3 ft (2.2 m)

WEIGHT

23.8 lb (10.8 kg) with Mantis™ i45/i45 N

»» **LINK RANGE**



12.4 mi (20 km) standard
24.8 mi (40 km) with ERA
37.3 mi (60 km) with LRTA

SPEED

Cruise: 29 mph (47 km/h) 25 kts
Dash: 47 mph (76 km/h) 41 kts

OPERATING ALTITUDE

300-3000 ft (91-914 m) AGL, typical
Max. launch 10K ft (3,048 m) DA

GCS

Tomahawk or Legacy GCS

LAUNCH METHOD

Hand-launched, bungee or vehicle launch

RECOVERY METHOD

Autonomous or manual skid landing; land or sea



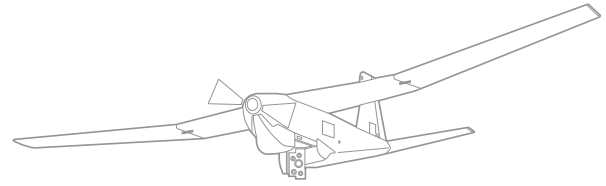
»» **ENDURANCE**

6.5 hr with Mantis i45/ i45 N



»» **TOTAL PAYLOAD CAPACITY**
5.5 lb (2.5 kg)

Puma™ 3AE ALL ENVIRONMENT



DIMENSIONS

Wingspan: 9.2 ft (2.8 m)
Length: 4.6 ft (1.4 m)

WEIGHT

15.6 lb (7.1 kg)

»» **LINK RANGE**



12.4 mi (20 km) standard
24.8 mi (40 km) with ERA
37.3 mi (60 km) with LRTA

»» **ENDURANCE**



2.5 hr with Puma™ Smart Battery*
3 hr with PS2500 Battery*

»» **TOTAL PAYLOAD CAPACITY**



4 lb (1.8 kg); 6.5 lb (2.9 kg) with Heavy Lift Software

*with the Mantis i45

SPEED

Cruise: 30 mph (49 km/hr) 26 kts
Dash: 47 mph (76 km/h) 41 kts

OPERATING ALTITUDE

300-3000 ft (91-914 m) AGL, typical
Max. launch 10K ft (3,048 m) MSL

GCS

Tomahawk or Legacy GCS

LAUNCH METHOD

Hand-launched, optional bungee launch or VTOL kit

RECOVERY METHOD

Autonomous or manual deep-stall; land or sea; VTOL option

KEY FEATURES

- »» Increased payload capacity with optional underwing transit bay for secondary payloads
- »» Single-case mission packout provides two full flights

KEY FEATURES

- »» 6.5 hours of ISR capability & full-motion video in all environments
- »» Support two flights with 2-case mission packout
- »» Dedicated secondary payload bay with power supply & Ethernet

INTEROPERABLE LRU SHARING ACROSS PUMA™ PRODUCT LINE

Puma™ 3 AE and Puma™ LE share many of the same Line Replaceable Units (LRUs), retaining similar operation, transport and logistics support within the Puma™ family.



i45/i45 N



Motor/Props



Avionics



GPS/INS



DDL™ Radio



GCS



Servo



Batteries

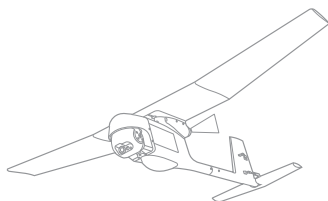


UBC



Laptop

Raven® B RQ-11B



DIMENSIONS

Wingspan: 4.5 ft (1.4 m)
Length: 3 ft (0.9 m)

WEIGHT

4.8 lb (2.2 kg)



»» **LINK RANGE**

6.2 mi (10 km)



»» **ENDURANCE**

75+ min

SPEED

Cruise: 32 km/h (17 kts), Dash: 81 km/h (44 kts)

OPERATING ALTITUDE

100-500 ft (30-152 m) AGL, typical
Max. launch 14K ft (4,267 m) MSL

GCS

Tomahawk GCS

LAUNCH METHOD

Hand-launched

RECOVERY METHOD

Autonomous or manual deep-stall

Puma™ KITS AND ACCESSORIES

COMPATIBLE WITH PUMA PRODUCT LINE

Puma™ Bungee BUNGEE LAUNCH SYSTEM

- » For environmental scenarios where hand launch is not preferred
- » Setup & operational in <10 min
- » Multiple ground fastener options securely installed in a variety of soil types or mounted to low, immovable objects

COMPATIBLE WITH PUMA 2 AE AND PUMA 3 AE

Puma™ VTOL Kit

- » Automated one-button launch & recovery in confined environments
- » Fixed-wing to VTOL in minutes
- » Available as add-on or retrofit kit

COMPATIBLE WITH PUMA 3 AE ONLY

Puma™ UTB UNIVERSAL TRANSIT BAY

- » Optional under-wing transit bay for additional payload capacity
- » Easy integration of third-party payloads
- » Three heights available: 1.75 in, 2.25 in & 3 in

Puma™ VNS VISUAL NAVIGATION SYSTEM

- » Seamless mission continuity through GPS-denied environments
- » Low-SWAP retrofit kit on existing & new Puma™ AE
- » Enables integration of future autonomy capabilities

COMPATIBLE WITH PUMA LE ONLY

Puma™ LE LASER DESIGNATOR CAMERA SUITE

- » **Integrated Laser Designator** – real-time target designation for guided munitions
- » **All-in-One ISR & Targeting** – Maintain Puma LE's long endurance and multi-mission flexibility with added targeting capability.
- » **Accurate Target Designation** – precise geo-location for fires integration

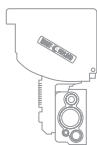
Puma™ LE UNIVERSAL GIMBAL KIT

- » **Field-Replaceable Payloads** – swap sensors in minutes without depot support
- » **Multi-Payload Compatibility** – EO/IR, laser designators, specialty sensors
- » **Rapid Reconfiguration** – adapt to ISR, targeting, or comms relay missions on demand

*Puma VTOL kit and Puma VNS cannot be installed and operated at the same time.

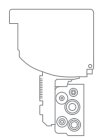
Mantis™ IMAGING PAYLOAD SENSORS

COMPATIBLE WITH PUMA™ PRODUCT LINE



Mantis™ i45N

- » Maximum visibility during night & low-light ISR
- » Wide & narrow LWIR camera imagers
- » 5 MP monochrome Low Light camera
- » Enhanced laser illuminator



Mantis™ i45

- » Superior daylight & low-light capabilities
- » Dual 15 MP high-res EO cameras
- » Low Light, LWIR cameras
- » Laser illuminator

COMPATIBLE WITH RAVEN®



Mantis™ i23D

- » High-performance daytime imaging
- » Dual 18 MP high-res EO sensors
- » 25x digital zoom



Mantis™ i23

- » Daylight & thermal imaging system
- » 5 MP EO camera imager
- » Laser illuminator

VAPOR® CLE ALL-ELECTRIC HELICOPTER UAS



DIMENSIONS

Wingspan: 9.2 ft (2.8 m)

Length: 4.6 ft (1.4 m)

GTOW WEIGHT*

55 lb (24.9 kg) for commercial use 68 lb (30.8 kg) for defense missions with less endurance



RANGE

Up to 19.8 mi (32 km)



ENDURANCE

Cruise: 120 min



USABLE PAYLOAD*

Up to 10 lb (4.5 kg) @ 55 lb

Up to 24 lb (10.9 kg) @ 68 lb

GROUND

SPEED LIMIT 33 mph (15 m/s)

OPERATING ALTITUDE* 0-12,000 ft (3,657 m) MSL (density)

MAX WIND PEAK* Sustained: 34.5 mph (30 kts)

DATA LINKS 900 MHz, 2.4 GHz or 5.89 GHz (video), Persistent Systems MPU5 (Standard), options Silvus, DTC

*FAA restricts the max Gross Take-off Weight (GTOW) of drones operating in the NAS to 55 lb unless you have special authorization

KEY FEATURES

- » **Unmatched Endurance:** Up to 120 minutes endurance
- » **Heavy-Lift Versatility:** Up to 24 lbs (10.9 kg) ISR, comms, lethal munitions
- » **All-weather Environment:** Extreme cold/heat, maritime hardened
- » **Compact Packout System:** Streamlined design for easy portability

EXAMPLES OF POSSIBLE PAYLOADS



EO/IR Sensor



SIGINT



Drop Mechanism**



Lidar



Hyperspectral



PPK Mapping



Multi-Payload

**With HD-25 - up to a 15-18 lbs droppable payload

An aerial view of a ship's deck, showing a large body of water in the background. The deck is dark with white markings, including a large 'H' and yellow arrows. A metal grate structure is visible on the deck. The sky is clear and blue.

Medium UAS

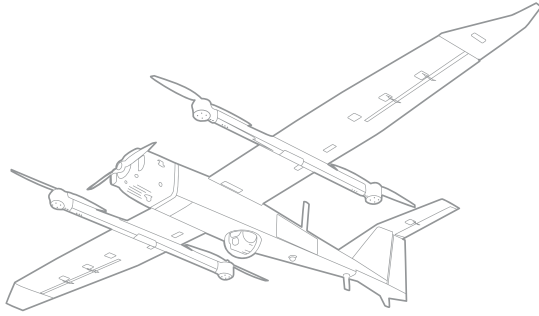
MUAS

With a 185-kilometer operating range, AV's fixed-wing medium uncrewed aircraft systems (MUAS)—JUMP® 20-X, JUMP® 20 and T-20™—are excellent choices for exacting reconnaissance, surveillance and target acquisition applications, due to their ability to carry some of the most powerful and versatile imaging sensors available.

JUMP 20-X is an advanced, Group 3 VTOL UAS designed for unmatched flexibility and precision to meet the demands of evolving missions. Featuring a multi-fuel, multi-payload design, it excels across all domains. Its modular, open-system approach (MOSA) supports payload-agnostic, radio-agnostic, and STANAG-compliant communications ensuring seamless integration and adaptability.



JUMP® 20-X HEAVY-FUEL VTOL FIXED-WING



DIMENSIONS

Wingspan: 18.8 ft (5.7 m)
Length: 9.5 ft (2.9 m)

WEIGHT

215 lb MGTOW* (97.5 kg)
Fuel & Payload



» **LINK RANGE**
115 mi (185 km); and
BLOS capability



» **ENDURANCE**
13+ hr



» **USABLE PAYLOAD CAPACITY**
Up to 30 lb (13.6 kg)



» **POWER SUPPLY**
230cc, heavy fuel engine,
2-stroke JP-5, JP-8, Jet A, or
Gasoline Battery Powered
VTOL Jump

OPERATING ALTITUDE

17,000 ft DA

GCS

Common GCS with
T-20, Jump 20

LAUNCH METHOD

No launch system
or runway required;
vertical take-off &
landing (VTOL)

RECOVERY METHOD

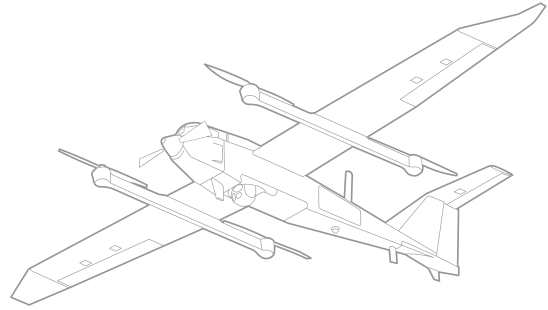
VTOL landing

*MGTOW - Maximum Gross Take-off Weight

KEY FEATURES

- » Multi-fuel, multi-INT/multi-domain in a single aircraft
- » Engineered for extreme maritime conditions
- » Fully autonomous precision landing
- » Modularity supporting 3rd party payloads, radios & control options
- » Beyond-line-of-site (BLOS)—multiple SATCOM options

JUMP® 20 VTOL FIXED-WING



DIMENSIONS

Wingspan: 18.8 ft (5.7 m)
Length: 9.5 ft (2.9 m)

WEIGHT

215 lb (97.5 kg) MGTOW*
Fuel & Payload



» **LINK RANGE**
115 mi (185 km)



» **ENDURANCE**
13+ hr



» **USABLE PAYLOAD CAPACITY**
Up to 30 lb (13.6 kg)



» **POWER SUPPLY**
MOGAS, 190 cc EFI Engine
Battery Powered VTOL Jump

OPERATING ALTITUDE

17,000 ft DA

GCS

Common GCS with
T-20, JUMP 20-X

LAUNCH METHOD

No launch system
or runway required;
vertical take-off &
landing (VTOL)

RECOVERY METHOD

VTOL landing

*MGTOW - Maximum Gross Take-off Weight

KEY FEATURES

- » Multi-INT/multi-domain in a single integrated aircraft
- » Best-in-class range & endurance, delivering superior performance
- » Fully Integrated Payload Options—synthetic aperture radar, mapping capabilities, laser designation, anti-jamming, COMINT/SIGINT
- » Compatible with ACE™ (Autonomous Control Engine) enabling fully-autonomous launch & landing from a moving vehicle or vessel

MODULAR VERSATILE MULTI-PAYLOADS



EO Sensor



IR Sensor



Optical



Sensor Fusion



SIGINT



EW Attack



Munitions



Machine Learning



Data Links



Anti-Jam

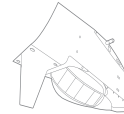


Radar



RF Scan

SENSOR OPTIONS



HOODTECH
09E0960/09E0IR3

EO, MWIR,
SPOTTER



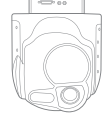
HOODTECH
11E0IR5

EO, MWIR,
LD



HOODTECH
06E0IR

EO, MWIR/SWIR,
SPOTTER

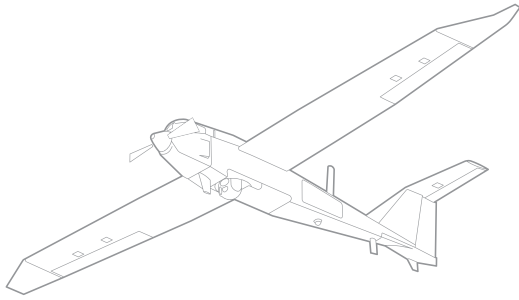


TRILLIUM
HD80/95

EO, MWIR,
SPOTTER



T-20™ RUNWAY INDEPENDENT



DIMENSIONS

Wingspan: 18.8 ft (5.7 m)
Length: 9.5 ft (2.9 m)

WEIGHT

225 lb (102 kg) MGTOW*
Fuel & Payload



» LINK RANGE
115 mi (185 km)



» ENDURANCE
24+ hr



» USABLE PAYLOAD CAPACITY
Up to 50 lb (22.7 kg)



» POWER SUPPLY
MOGAS, 190 cc EFI Engine

OPERATING ALTITUDE
20,000 ft DA

GCS
Common GCS with JUMP 20, JUMP 20-X

LAUNCH METHOD
Catapult-launched

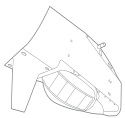
RECOVERY METHOD
Autonomous or manual skid landing

*MGTOW - Maximum Gross Take-off Weight

KEY FEATURES

- » Runway Independent—small operational footprint with PLS (catapult)
- » High-Performance Optics—long-range day/night imaging, onboard tracking & stabilization
- » Class-leading endurance & payload flexibility in a Group 3 UAS
- » Group 4 capabilities in a Group 3 footprint

SENSOR OPTIONS



HOODTECH
09E0960/09E01R3

EO, MWIR,
SPOTTER



HOODTECH
11E01R5

EO, MWIR,
LD



HOODTECH
06E01R

EO, MWIR/SWIR,
SPOTTER



TRILLIUM
HD80/95

EO, MWIR,
SPOTTER



ISR SERVICES

AV's ISR services ensures uninterrupted operations and mission success through effective mission planning, on-site operational support, maintenance, repairs, and timely supply chain management. Our highly trained staff of Field Service Representatives (FSR) are ready to quickly mobilize to support customer mission requirements in any theater of operation.

- » FULLY EQUIPPED & STAFFED TURNKEY SOLUTIONS for COCO & GOCO operations
- » OEM-SME remote pilot certified operators, instructors & maintainers
- » DESIGN & DEVELOPMENT of mission-tailored TTPs & SOPs
- » DEVELOPMENT of on-site sustainment operations & delivery
- » TOTAL LOGISTICAL & OPERATIONAL SUPPORT mission planning, coordination & monitoring
- » MAINTENANCE & REPAIR SERVICES on-site to ensure mission sustainment & success



Layered C-UAS Defense: RF Detect and Defeat in any Environment



RADIO FREQUENCY COUNTER-UAS

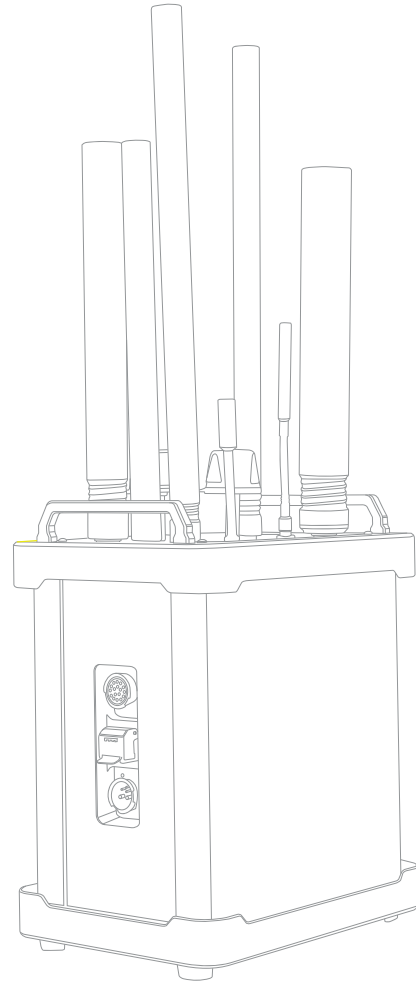
AV's layered defense counter-unmanned aircraft system (cUAS) strategy leverages advanced RF-based technologies to autonomously detect, track, and defeat drone threats across all phases of engagement. Central to this approach is the integration of passive RF sensing, active RF detection, and precision RF effectors, enabling scalable, modular, and adaptable defense across diverse operational environments. AV's RF cUAS solutions including Titan and multiple integrated solutions provide early warning and threat classification through wideband signal intelligence, followed by selective disruption using targeted RF exploitation. These systems are designed for low collateral impact and can operate autonomously or integrate seamlessly into broader multi-domain defense architectures. The RF layer acts as both a stand-alone shield and a core enabler within AV's layered cUAS defense platforms..

Titan™ 4 RF COUNTER-UNMANNED AERIAL SYSTEM

Titan 4 is AV's flagship solution for Autonomous RF Counter-Unmanned Aerial System Detect & Defeat. Titan can be rapidly deployed in challenging environments from rural to urban, and is adaptable to mobile, dismounted, and fixed missions. Titan 4 features a single chassis, >550W of Defeat Power with headless operation. With automated point-and-click functionality, intelligent AI/ML-driven analysis, and advanced C2 interoperability, Titan provides precise countermeasure control while minimizing disruption to blue force communications.

KEY FEATURES

- » **RAPIDLY DEPLOYABLE, MULTI-MISSION SOLUTION** - Titan can be rapidly deployed in challenging environments from rural to urban, and is adaptable to mobile, dismounted, and fixed missions.
- » **FULL-TIME PROTECTION | LOW TCO** - Titan classifies and mitigates multiple threats across multiple bands in the harshest environmental conditions with no calibration, recurring maintenance, or software licensing required for low total cost of ownership.
- » **EXTENSIBLE & ADAPTABLE TO FUTURE THREATS** - Titan includes an expansion port for incorporation of emergent threats & effector packages, and is readily integrated with other C2 platforms.



TECHNICAL SPECIFICATIONS

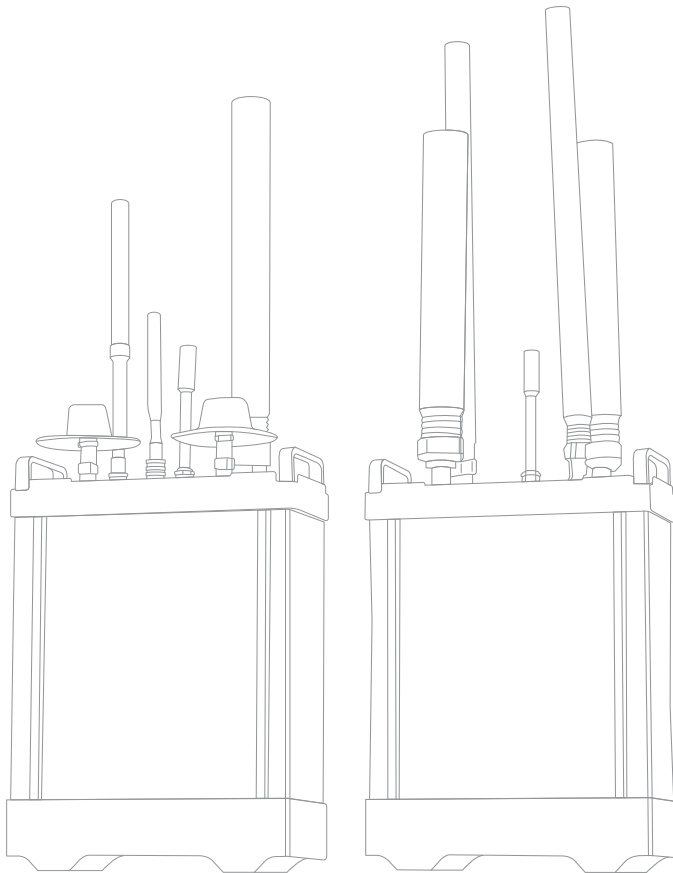
COVERAGE	433 / 868 / 915 MHz 1.2 / 2.4 / 5.2 / 5.8 GHz, 2 Configurable 400 MHz-6 GHz RX Channels
DETECTION RANGE	>4 km horizontal radius & drone ID / telemetry demodulation (when available)
DEFEAT RANGE	>3 km horizontal radius
RF POWER OUTPUT	> 550 Watts
GNSS DENIAL COVERAGE	Selectable E1/L1, E5/L5, L2, & L6 Bands, variable RF output
DEPLOYMENT TIME	<5 min (packing case to operational capability)
TEMPERATURE RANGE	-20°C to 50°C

Titan™ COUNTER-UNMANNED AERIAL SYSTEM

The Titan™ is an autonomous, self-contained C-UAS identification and defense platform. With advanced C2 capabilities, automated point-and-click functionality, and AI/ML-driven signals analysis, Titan provides precise control of escalating countermeasures while minimizing disruption to blue force communications.

KEY FEATURES

- » **RAPIDLY DEPLOYABLE, MULTI-MISSION SOLUTION** - Titan can be rapidly deployed in challenging environments from rural to urban, and is adaptable to mobile, dismantled, and fixed missions.
- » **FULL-TIME PROTECTION, LOW LIFETIME COST** - Titan classifies and mitigates multiple threats across five RF bands under virtually any environmental conditions, requiring minimal maintenance and zero calibration for a low total cost of ownership.
- » **INTEGRATION & CROSS-DOMAIN CAPABILITY** - Titan readily integrates with other C2 platforms, supporting secure bidirectional data leveraging our API/ICD.



TECHNICAL SPECIFICATIONS

SF UNIT COVERAGE	2.4 GHz / 5.8 GHz / Wi-Fi
EF UNIT COVERAGE	433 / 868 / 915 MHz, 1.2 GHz & GNSS
DETECTION RANGE	> 3 km horizontal radius
DEFEAT RANGE	> 2 km horizontal radius
RF POWER OUTPUT	433/868/915 MHz & 1.2 GHz: 100W, 2.4: 90W, 5.8 GHz: 45W
GNSS DENIAL COVERAGE	E1/L1, E5/L5, L2, and L6 Bands, variable transmit range
DEPLOYMENT TIME	<10 min (Case to operational capability)
TEMPERATURE RANGE	-20°C to 50°C

Titan - SV™

FIXED-SITE RELEVANT DETECTION/TRACKING OF SUAS AND PORTABLE, 100% PASSIVE RF SENSING TECHNOLOGY

Titan-SV delivers comprehensive 360° surveillance, efficiently localizing malicious small Uncrewed Aircraft Systems (sUAS). Offered in both fixed-site (DIVR MKII) and portable (MPV3) configurations, keeping operators and installations safe via remote and automated alerting and tracking of sUAS..

Titan - SV™ MPV3

The Titan-SV™ MPV3 offers 100% Passive RF Sensing Technology for human- portable, vehicle mounted or static mounted operations. Titan SV MPV3 targets highly portable long-range detection and identification of 30+ discrete UAS signatures. We also offer Network-Based Sensor Monitoring with a Fully Automated UI that provides visual/audible alerting and tracking of sUAS.

TECHNICAL SPECIFICATIONS

WIDE VOLTAGE SUPPORT	10VDC-30VDC
DIMENSIONS	6.5" x 8" x 3.125"
WEIGHT	4.7 lb (Sensor Only)
POWER/BATTERY	(Thales 148, BB2590U), 110AC Shore Power, 12VDC Vehicle

KEY FEATURES

- » *Next-Generation of our proven 100% Passive RF Sensor technology*
- » *Highly Portable long-range detection and identification of 30+ discrete UAS signatures*
- » *Single configuration for man portable, vehicle mounted or static mounted operations*
- » *Extensive RF Signature Library with robust support for precision telemetry extraction*
- » *Operator Interface includes audible UAS detection alerts via built in audio-out, visual detection alerts via LED status indicator, and fully featured web-based UI for remote monitoring using standard browser technology*
- » *Rugged IP-rated protection for Power, Network, Audio, and USB I/O*



Titan - SV™ DIVR MKII

The Titan-SV™ DIVR MKII offers Fixed-Site / Vehicle Mounted Detection/Tracking of sUAS. The system enables long-range 360° detection and tracking of sUAS, with precision 3D tracking of many sUAS platforms.

TECHNICAL SPECIFICATIONS

DIMENSIONS	Primary Sensor 12" X 15" X 4.5" (WxDxH), RADOME ~16"
WEIGHT	~20 lbs
POWER	DCV 10V-35V, 160W

KEY FEATURES

- » *Long-range 360° detection and tracking of sUAS*
- » *Precision 3D tracking of many sUAS platforms*
- » *45° sector tracking of non-precision sUAS platforms*
- » *Multi-resource hardware architecture for maximum scanning and detection performance*
- » *Expansive software-defined library that includes detection capabilities of commercial (consumer/prosumer), DIY, and tactical sUAS transmitters*
- » *High probability of detection with low false alarm rates*
- » *Intuitive web-based User Interface featuring fully automated detection, alerting, and tracking functions*



Titan™ MS MULTI-SENSOR FIXED SITE PROTECTION

Used for fixed site protection, Titan™ MS is an AI-powered multi-sensor fusion solution that detects, identifies, tracks, defeats, and reports on unmanned system threats. Titan MS is a multi-mission, multithread solution suitable for air, sea, and land threats. It fuses AI and ML algorithms from industry-leading sensors to address RF-controlled and autonomous drone threats.



SENSORS

- » **RF:** Simultaneous Vertical & Horizontal Polarization, 300MHz - 6GHz
- » **RADAR:** X-Band w/ fixed, alternating, and continuous scan modes
- » **Electrical-Optical (EO)/Infrared (IR):** Ultraviolet 0.25 through Visible-Infrared

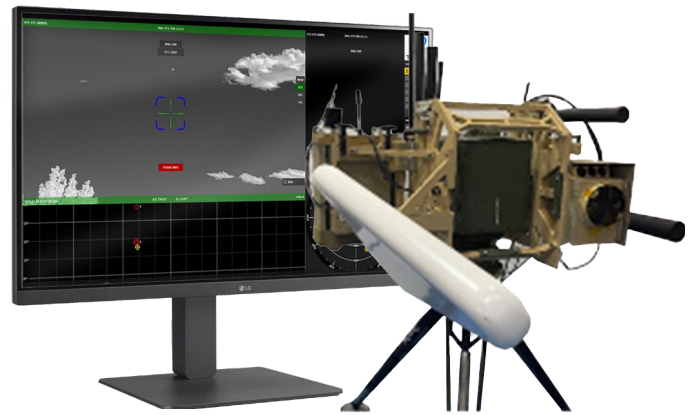
KEY FEATURES

- » **360° SITUATIONAL AWARENESS** - Used for fixed site protection, Titan MS delivers a superior command and control interface that provides security from all angles of the protected area
- » **FULL-TIME PROTECTION, LOW LIFETIME COST** - Titan MS classifies and mitigates multiple threats across five RF bands, radar, and optics, under virtually any environmental conditions, requiring minimal maintenance and zero calibration for a low total cost of ownership.
- » **INTEGRATION & CROSS-DOMAIN CAPABILITY** - Titan MS readily integrates with other C2 platforms, supporting secure bidirectional data leveraging our API/ICD.

TECHNICAL SPECIFICATIONS

SF UNIT COVERAGE	2.4 GHz / 5.8 GHz / Wi-Fi
EF UNIT COVERAGE	433 / 868 / 915 MHz, 1.2 GHz & GNSS Bands E1/L1, E5/L5, L2, E6
DETECTION RANGE	3 km radius, horizontal (RF Sensor)
DEFEAT RANGE	2 km radius, horizontal (RF Sensor)
RF POWER OUTPUT	433/868/915 MHz & 1.2 GHz: 60W, 2.4/5.8 GHz: 75W
TEMPERATURE RANGE	-20°C to 50°C
INGRESS PROTECTION	IP66 and IEC 60529

Titan™ EO/IR PORTABLE, MULTI-SENSOR CUAS PLATFORM



The Titan™ EO/IR is an AI-powered sensor fusion solution that detects, identifies, tracks, and defeats UAS threats. With an advanced sensor array, multi-mission adaptability, AI/ML-driven signals analysis, and point-and-click operation, Titan EO/IR provides true cross-domain sensor fusion in an accessible, low TCO platform.

KEY FEATURES

- » **RAPIDLY DEPLOYABLE SOLUTION** - Single-pane-of-glass sensor fusion provides full UAS situational awareness through a single UI.
- » **FULL-TIME PROTECTION | LOW LIFETIME COST** - Titan EO/IR leverages the repeatable performance of the Titan CUAS platform in an accessible, low-maintenance kit.
- » **EXTENSIBLE & ADAPTABLE TO FUTURE NEEDS** - With advanced C2 interoperability, Auto-Engage, and AI/ML signals analysis, Titan EO/IR provides long range detection & precise control of escalating countermeasures.

TECHNICAL SPECIFICATIONS

SENSOR COMPLEMENT	MWIR Sensor: 1.7° to 20° FOV, Zoomable RF: Simultaneous Vertical & Horizontal Polarization, 300MHz - 6GHz
IR COVERAGE/AGILITY	+/- 170°AZ, 70° to -20°EL, 50 °/s, 50°/s2
RF COVERAGE	433 / 868 / 915 MHz 1.2 / 2.4 / 5.2 / 5.8 GHz Wi-Fi / Multi-Satellite GNSS
IR TRACKING RANGE	>3.5 km
RF DETECTION RANGE	>5 km horizontal radius
RF DEFEAT RANGE	>3.5 km horizontal radius
RF POWER OUTPUT	530 Watts
GNSS DENIAL COVERAGE	Selectable E1/L1, E5/L5, L2, & L6 Bands, variable transmit range
TEMPERATURE RANGE	-20°C to 50°C

Titan - SV™ LOB

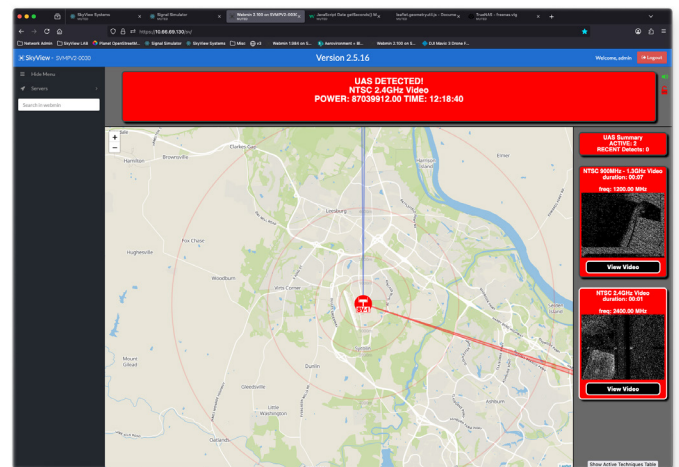
Titan-SV™ LOB offers both fixed site and vehicle mounted, mission relevant detection and tracking of small unmanned aircraft systems (sUAS), with line of bearing (LOB). As part of the Titan C-UAS™ portfolio of products, Titan-SV LOB excels at long-range 360° detection of commercial (consumer/prosumer), DIY, and tactical sUAS transmitters, incorporating proven interoperability with commercial and government multi-sensor c-UAS platforms.

KEY FEATURES

- » Precision 3D tracking of many sUAS platforms
- » 1° Azimuth and Elevation tracking of non-precision sUAS platforms
- » Multi-resource hardware architecture for maximum scanning and detection performance
- » Expansive software-defined library that includes detection capabilities of commercial (consumer/prosumer), DIY, and tactical sUAS transmitters
- » High probability of detection with low false alarm rates
- » Internally integrated position and heading sensors to expedite fielding and vehicle operations

TECHNICAL SPECIFICATIONS

DIMENSIONS	Primary Sensor 17.7" x 17.7" x 15.6" (13.1" height over mast)
WEIGHT	~37 lbs
POWER	DCV 10V-35V, 160W



TITAN-SV LOB INTERFACE



Integrated Air and Missile Defenses

MISSILE DEFENSES

AV's layered defense counter-unmanned aircraft system (CUAS) offerings span the spectrum from sophisticated, scalable command and control platforms for integration, cost effective gunnery training systems, and next generation counter UAS (CUAS) missiles. VigilantHalo is a software-driven integration platform for real-time Command and Control (C2). Freedom Eagle, or FE-1, is a next-generation C-UAS kinetic missile that rapidly and affordably enhances warfighter lethality, survivability, and combat effectiveness. We also offer proven solutions for Virtual Reality-based weapons training devices that support portable or fixed training sites for weapons systems training.



Freedom Eagle - 1 NEXT GENERATION C-UAS MISSILE

AV's Freedom Eagle-1, or FE-1, is a next-generation C-UAS kinetic missile that rapidly and affordably enhances warfighter lethality, survivability, and combat effectiveness, providing an agile and disruptive new technology to the munition industrial base and expanding national security air defense capabilities.



KEY FEATURES

- » **POWERFUL PROTECTION** - Enhanced maneuverability and increased lethality and range against Group 3 UAS and other larger air threats.
- » **EASE OF INTEGRATION** - Seamlessly integrates with existing infrastructure and command and control (C2) networks and radar agnostic for flexible Concept of Operations (CONOPS), enabling a rapid deployment timeline.
- » **SWAP SUPERIORITY** - Significantly reduce size, weight, and power (SWaP) demands as compared with other current air defense weapons systems.
- » **MISSION READY** - Modular architecture and software-defined front end can be integrated with other rocket motors for even greater range and maneuverability against sub-sonic and supersonic threats.



AV_Halo™ COMMAND

MISSION: VIGILANTHALO

VigilantHalo is a Modular Open Systems Approach (MOSA) compliant, software driven Command, Control, Communication, Computers, Cyber Intelligence, Surveillance, and Reconnaissance (C5ISR) system. AV_Halo™ COMMAND is network optimized for full air, surface, sub surface, and space awareness with configurable full-scale visualization and Artificial Intelligence (AI) decision support and weapons target pairing tools for existing Battle Management Command and Control (BMC2) networks.



KEY FEATURES

- » **AGNOSTIC DEPLOYMENT** - Fundamentally configured for three deployment options depending on the user's operating environment and needs, VigilantHalo can be deployed to the cloud, to a fixed site, or to a mobile platform - laptop or vehicle.
- » **RADAR INTEGRATION AND MULTI-SENSOR FUSION** - As a sensor-agnostic software and hardware automation platform, VigilantHalo permits efficient integration with multiple external radar systems simultaneously. The custom- built state-of-the-art Sensor Data Processor (SDP) smooths, rejects clutter, and preforms multi-sensor

fusion and tracking of surveillance data providing a clean, precise four dimensional position of all aircraft (manned or uncrewed) within the surveillance coverage volume.

- » **C-UAS INTEGRATION** - VigilantHalo is easily configured for various mission including Counter UAS (C-UAS) via AV's suit of products including the non-kinetic effector LOCUST Laser Weapon System (LWS), Titan™ RF defeat product, and SkyView passive RF detection and tracking system.



FIXED SITE

VigilantHalo easily integrated into fixed-site facilities, such as base security commands and air traffic control rooms.



CLOUD & MOBILE PLATFORMS

VigilantHalo can be deployed anywhere to any device through its secure cloud architecture. It provides operators with on-the-go airspace command and control from any mobile platform, including laptops, tablets, or command vehicles.

Virtual Systems Trainer (VST)

Virtual Systems Trainer (VST) is the first and only fielded Virtual Reality-based weapons training device that supports portable or fixed training sites for weapons systems training. VST provides Stinger, Javelin and Iгла Team (Team Leader and Gunner) training within a 360-degree immersive, realistic battlefield environment. The VST instructor station provides selection of instructor-defined training vignettes/scenarios that include varying terrain such as desert, forest or urban areas, and high-fidelity moving models. VST includes a detailed after-action review (AAR)/scoring presentation of Gunner actions, for example, correct identification of friendly and threat vehicles, proper launch/engagement sequence, operator responses to emergency/fault conditions and correct aim point.



FIELD HANDLING TRAINER

_FHT-STINGER & FHT-IGLA

- » Used to practice basic manual weapon handling, operation, sighting, and ranging skills
- » Visually track actual aircraft or radio-controlled targets
- » Allows insertion/removal of Battery Coolant Unit (BCU)
- » Same size, weight, and external appearance as the actual weapon-round
- » Controls and mechanical operation are the same as the weapon-round
- » FHT IMI computer based weapons familiarity training to supplement FHT for comprehensive stand-alone training without the need for instructor

VIRTUAL SYSTEMS TRAINER

_STINGER-LITE

VST Stinger-Lite is a leaner, screen-based version of AV's proven VST product. VST Stinger-Lite will use the same software suite as the VST, but is purpose-built for training in a more austere environment.

- » VST Stinger-Lite replicates the form and function of the FIM-92-A-MANPADS-sharing the same dimensions, weight, and control/switches
- » Gunners train using standard FIM-92 folding sight assembly and engage targets displayed on a lightweight HD screen mounted to front of unit
- » Engagement sequence accurately mirrors live system from target acquisition to missile release
- » VST Stinger-Lite MANPADS is tethered to an instructor laptop-allowing the instructor to control training scenario, providing power to the MANPADS, and displaying a realistic full-motion video (FMV) on the mounted screen





Electronic Warfare(EW) Capabilities and Products

A close-up, low-angle shot of a man with a full beard and blue-tinted sunglasses. He is wearing a dark green t-shirt and a black watch on his left wrist. He is holding a black cable with both hands, looking upwards and to the left. The background is a clear blue sky with a white metal structure on the left side.

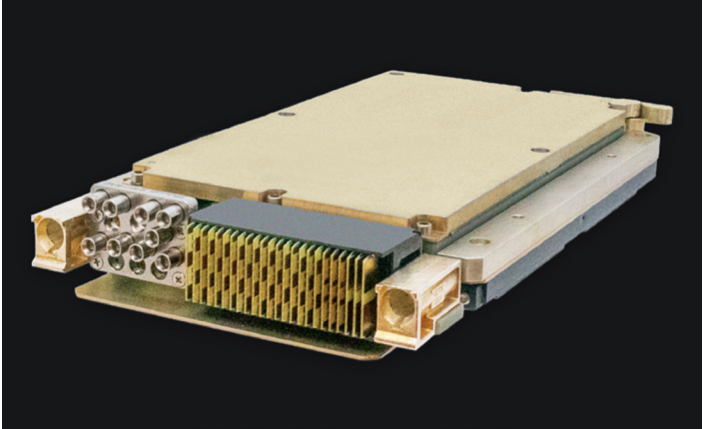
ANGLER, WINDJAMMER, SHARKCARGE FAMILIES

AV develops tactical solutions so our customers can stay ahead of global threats and offer actionable intelligence to warfighters operating at the mission's edge. We support industry-leading open architecture technology, mission planning, and awareness in support of Electronic Warfare. We specialize in analyzing Wi-Fi, Bluetooth, Satellite, and WiSun, signals of interest. We are feature rich with over 50 patented techniques spanning everything from survey, geolocation, targeting, and identification and more. In today's evolving Battlesphere, electronic warfare (EW) is no longer optional. It is mission-critical. AV's EW innovations redefine how modern conflicts are won with precision, speed, and superiority. The future of warfare isn't just kinetic, it's electronic.

Angler SOFTWARE DEFINED RADIOS

Angler features a SOSA compliant chassis that adheres to the 3U VPX CMOSS/SOSA slot profile, and has a tremendous capacity to receive, process, and transmit radio frequencies (RF). Angler supports multiple signals of interest and third-party waveforms.

The Angler baseboard processing enables third party applications across the SharkCage portfolio and third-party solutions at the tactical edge. Angler can easily be integrated into Mod Payload compliant or non-compliant platforms.



KEY FEATURES

- » *One module solution for multiple waveforms: Windjammer, LANShark, Bluefin, 3rd Party Waveforms (SDK)*
- » *Multiple Onboard Processors*
- » *Xilinx RFSoc*
- » *NXP LS1046A*
- » *SOSA 3U VPX Module*
- » *14-way RF Slot Profile*
- » *VICTORY/MORA Compliant*
- » *Dynamically loadable waveforms*
- » *Board support package available*

SPECIFICATIONS (GENERAL)

BASEBOARD QUAD CORE NXPBASEBOARD NXP	
XILINX RFSoc	
VITA 46.11/SOSA IPMC SUPPORT (ROADMAP)	
10 MHz OR 100 MHz REFERENCE INPUT	
DATA FORMAT	MORA Compliant, VITA-49A Packets
INTEGRATED GPS RECEIVER	L1, 56 Channels

Windjammer 2 RUGGED MULTI RADIO SYSTEM

The Windjammer 2 Tactical System is a compact, ruggedized multi-radio system that provides detection, identification, geo-location, and exploitation of Mobile Satellite Services (MSS) devices within the Thuraya® and Inmarsat® Networks.

The Windjammer 2 represents the next-generation collection, targeting, and exploitation capability that is effective against any target that relies on mobile satellite systems. Our addition of BGAN capability expands the target set to include maritime vessels, commercial aircraft, long-haul trucking, and personal users in remote or disconnected areas. Windjammer can easily be integrated into Mod Payload compliant or non-compliant platforms.

KEY FEATURES

- » *Multi-network capability*
- » *Simultaneous multi-operation capability*
- » *Software-defined L-Band radio transceivers*
- » *Airborne antenna kit available for roll on/roll off airborne solution*
- » *Integrated, custom-designed 5-watt High Power Amplifier*
- » *Easy to operate Mission Manager software application with geo-rectified imagery*
- » *Integrated GPS Receiver*
- » *Low-profile antenna configuration*
- » *Channel commandeering technique available as an SRT license for Thuraya®*
- » *Modular and scalable design*



SPECIFICATIONS (LAPTOP CONTROLLER®)

SIZE	14.8 x 10.1 x 1.29 in. (37.6 x 25.7 x 3.28 cm)
WEIGHT	6.5 lb (2.3 kg)
POWER	100 to 240 VAC / 10 to 30 VDC, 180 W

SPECIFICATIONS (ENVIRONMENTAL)

SIZE	12.5 x 9 x 4.1 in. (31.8 x 22.9 x 10.4 cm)
WEIGHT	10.4 lb (4.7 kg)
POWER	100 to 240 VAC / 10 to 36 VDC, 80W
OPERATING VIBRATION	3.5 g @ 10 Hz to 500 Hz
OPERATING SHOCK	20 g @ 2 ms half-sine pulse

SharkCage TACTICAL CHASSIS

Built to survive any environment and ideal for man-packable or mounted applications, our Expeditionary C5ISR/EW chassis are passively cooled, tactical VPX chassis with an embedded chassis management board (CMB), representing our next-generation tactical chassis solution. Environmentally sealed to withstand the elements associated with land, air, and sea operations as well as the extreme temperature changes associated with airborne POD missions, the chassis are designed to house a wide variety of C5ISR/EW Modular Open Suite of Standards (CMOSS) and SOSA-compliant 3U VPX cards.

Shifting environments? No problem. Cooling “fins” let you tailor your chassis to accomplish specific mission needs and configure slots with other signals of interest for a multi-protocol solution. SharkCage is available in 2, 3 and 5-slot configurations.

KEY FEATURES

- » 18 LANShark® 802.11 a/b/g/n radios (2.4 and 5 GHz)
- » Rugged, compact enclosure
- » Robust power distribution
- » 56 channel GPS receiver
- » Custom RF distribution system and 1-watt High Power Amplifier (HPA)
- » Geo-rectified imagery
- » Custom designed promiscuous driver for transmit and receive Quad Core I7 at 2.4 GHz
- » Gigabit Ethernet interface; 10/100/1000BASE-T
- » Scalable between high-capacity “all in view” operation down to single channel autonomous operation
- » 256 GB SSD
- » Full 80 MHz all-in-view Bluetooth Spectrum Capture



SPECIFICATIONS (MECHANICAL)

SIZE	9.4 x 6.4 x 3.3 in. (23.9 x 15.24 x 8.4 cm)
WEIGHT	8.6 lb (3.9 kg)
POWER (INPUT VOLTAGE)	100 to 240 VAC or 10 to 36 VDC at ~ 48 W

SPECIFICATIONS (ENVIRONMENTAL)

OPERATING TEMPERATURE	-40 to +122°F (-40 to +50°C)
HUMIDITY	95%, non- condensing
OPERATING VIBRATION	0.02 g2/Hz at 10 to 500 Hz
OPERATING SHOCK	20 g @ 2 ms half-sine pulse





Space Technologies

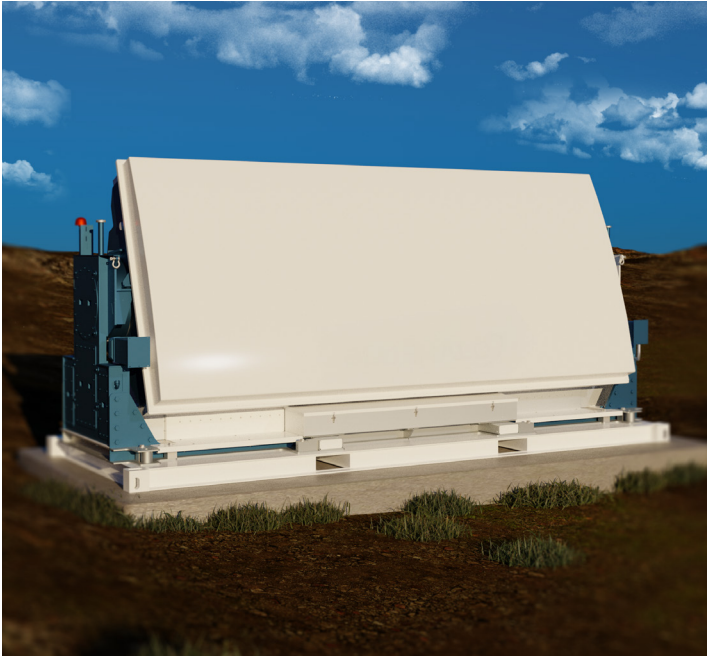


SPACE OPERATIONS & SATELLITE ELECTRONICS

To maintain our Nation's strategic advantage in the increasingly competitive arena of space, it is essential to invest in advanced space technologies. AV is playing a pivotal role in this transformation with groundbreaking innovations such as BADGER, WASP, and cutting-edge laser communications. These technologies, along with AV's space-qualified sensors and electronics, enhance our capabilities to secure, communicate, and operate effectively in and across multiple orbits.

BADGER and WASP provide robust solutions for command and control ensuring situational awareness through reliable communications. Meanwhile, AV's laser communication systems offer unprecedented speed and security. By leading the development of such advanced technologies, AV is ensuring that the United States remains at the forefront of space exploration and defense, safeguarding our national interests and maintaining our strategic edge.

Badger



TECHNICAL SPECIFICATIONS

SIMULTANEOUS TX / RX	4/12
CHANNEL BANDWIDTH	25 MHz
OUTPUTS	Analog & Digital
OPERATING TEMPERATURE RANGE	-40° C to +50° C
INSTALLATION	Deployable 20-Foot ISO Container

AV's Broad Area Deployable Ground Terminal Enabling Resilient Communication system, or BADGER, provides a modular and deployable large form factor ground-based phased array solution supporting complex SATCOM, telemetry, and electronic warfare missions.

BADGER's digital interfaces combined with its multi-band, multi-beam, and multi-kinematic operations enable support of multiple mission areas simultaneously—a game-changing advantage for today's warfighter. The rugged, self-contained design ensures operations in austere environments, supporting “communications-on-the-move” operations as needed.



» ORBITAL REGIMES
GEO/MEO/LEO



» OPERATIONAL FREQUENCIES
ATAK & MANET Radio



» SCAN ANGLE
+/- 60 degrees

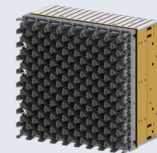
KEY FEATURES

- » *Rapid target acquisition and tracking with Broad Area Automated Acquisition (BA3) and Integrated Complex Mono-pulse Tracking (ICMT) systems*
- » *Antenna nulling, array healing, beam shaping or spoiling, and more*
- » *Multiple simultaneous mission capacity through Frequency Agile Operations (FAO) and software defined beam states and targets*
- » *L/S/C-Band phased array with a 2-kilowatt equivalent spatial distributed high-power amplifier (HPA)*

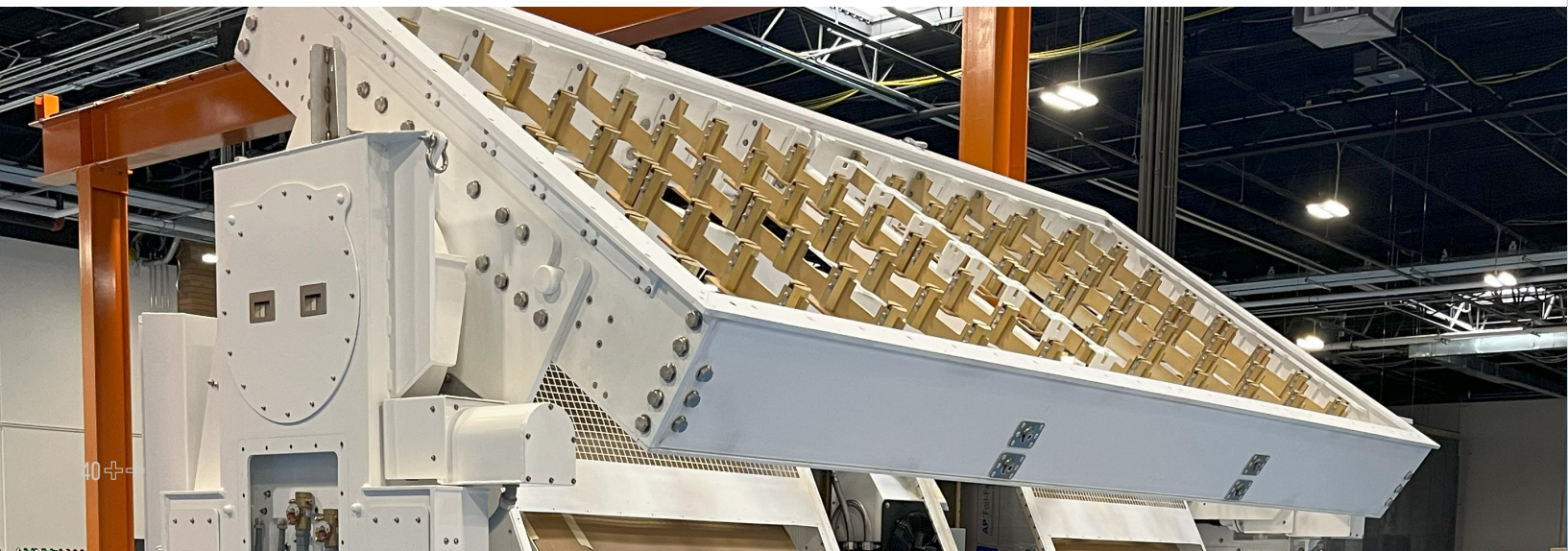
The aggregation of multiple BADGER systems into a single phased array increases G/T and EIRP values, making it an ideal solution for multi-GEO contacts. BADGER supports a LEO configuration, enabling more than 150 simultaneous contacts within a single array.

MULTI-BAND SOFTWARE DEFINED ANTENNA (MSDA) TECHNOLOGY

AV's core digital beamformer technology is the MSDA tile which enables several AV phased array core products. The MSDA tile supports transmit and receive operations with 25 MHz of instantaneous bandwidth per beam.



MSDA TILE: AV'S
CORE BEAMFORMING
TECHNOLOGY



WASP

WIDE AREA
SCANNING PARABOLIC



TECHNICAL SPECIFICATIONS

SIMULTANEOUS TX / RX	4/12
CHANNEL BANDWIDTH	25 MHz
OUTPUTS	Analog & Digital
OPERATING TEMPERATURE RANGE	-40° C to +50° C

AV's Wide Area Scanning Parabolic (WASP) employs multiple, independently steerable, simultaneous beams at diverse center frequencies and bandwidths including advanced capabilities like antenna nulling, array healing, and beam shaping or spoiling. This solution supports seamless interface with both new and existing antenna reflectors and provides increased slew rate / beam steering capabilities reducing overall wear and tear on parabolic drive systems.



» ORBITAL REGIMES
GEO/MEO/LEO



» OPERATIONAL FREQUENCIES
1.7-12 GHz



» SCAN ANGLE
+/- 20 degrees

KEY FEATURES

The WASP's digitally beamformed Phased Array Feed (DPAF) technology enables multi-band, multi-beam, and multi-kinematic operations through:

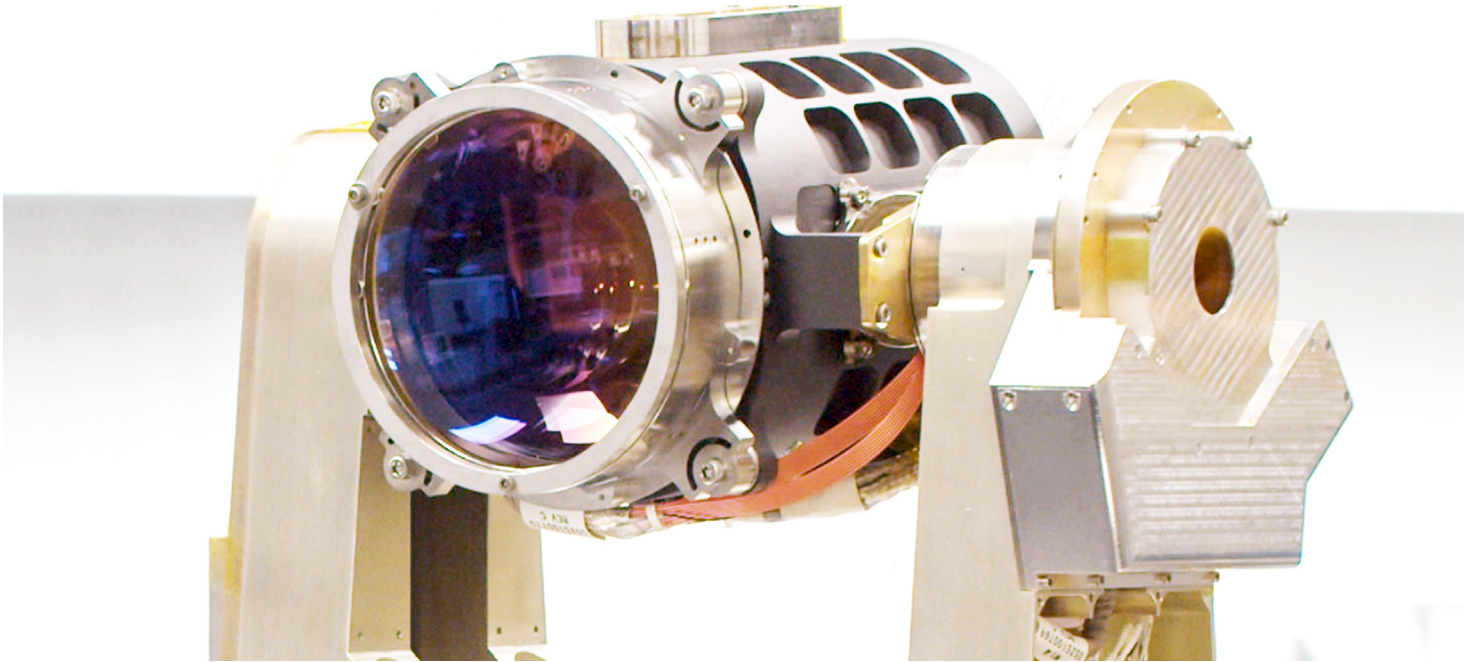
- » **Multiple Beam Synthesis (MBS)** provides a means of tracking multiple simultaneous targets from a single reflector.
- » **Novel Beam Broadening (NBB)** techniques that applies a proprietary taper to the phased array feed to match the performance of the feed to the reflector - at any frequency
- » **Wide Area Scanning (WAS)** ensures targets are acquired consistently and efficiently using little prior knowledge.
- » **Fine Loop Pointing (FLP)** enables high agility tracking in austere environments on traditional parabolic reflector - re-use / repurpose existing assets.
- » **Delivers proven game changing capabilities** in mission areas such as SATCOM, Telemetry, Electronic Warfare, RADAR, and ISR.

Through a unique implementation, the system provides 40 dB of isolation between transmit and receive enabling simultaneous, full duplex transmit and receive operations. The MSDA architecture is extensible across multiple mission areas, enabling communications between multiple spatial, spectral, and temporal diverse targets.



LaserComm

LASER COMMUNICATIONS
TERMINALS



With 40+ years of optical communications experience, AV is the industry leader in optical jitter control and precision pointing. Our laser communication terminals incorporate our experience in precision optical and acquisition and tracking systems to maintain line-of-sight for long-haul optical communications.

AV's flexible optical designs incorporate precise measurement and mitigation of external and internal vibrational forces that precision optical systems experience in the field. Our active monitoring and control solutions have been applied in various fielded and delivered solutions, including high-energy lasers, laser communications, and optical imaging systems.

ON-ORBIT LEGACY

AV has provided systems and components for many laser communication missions, including NASA's Laser Communication Relay Demonstration (LCRD) and Lunar Laser Communication Demonstration (LLCD) and commercial foreign partners. These high-precision gimbals have successfully flown on orbit as part of the Massachusetts Institute of Technology Lincoln Laboratory (MIT-LL) ILLUMA-T mission and are supporting Artemis II, the first manned Orion mission.

ADVANCING INNOVATION

During a 2025 demonstration of its gimballed long-haul laser communication system, AV successfully completed pointing, acquisition, and tracking (PAT) sequences between two terminals at an emulated distance greater than 200,000 km amidst simulated challenges experienced in space environments, including jitter, extreme temperatures and lack of atmosphere.

The demonstration's success highlights new capabilities for transferring high-bandwidth data in space enabling the secure exchange of more data at a faster rate across further distances, including LEO, MEO, GEO orbits and beyond. With the successful prototype demonstration in an operational environment, AV has matured its optical communication terminals to Technology Readiness Level (TRL) 6.

OPTICAL COMMUNICATIONS TERMINALS (OCTS)

AV offers gimbaled OCTs with advanced line-of-sight stabilization and pointing and tracking technologies, along with an interoperable backend optics assembly to support a variety of optical modem technologies.

These terminals can support various communication waveforms to include coherent and direct detection schemes. The interoperability of our solution allows for compatibility with optical modems that utilize phase shift keying (QPSK, DPSK, and BM-DPSK) as well as other modulation schemes, including on-off keying (OOK and BMOOK), pulse position modulation (PPM), and quadrature amplitude modulation (QAM). The polarization agnostic nature of our solution allows for compatibility with both the Consultative Committee for Space Data Systems (CCSDS) and the evolving Space Development Agency (SDA) and SIS-002 standards.

AV's end-to-end suite of optical communications terminals and ground stations provides a configurable fiber-in/fiber-out solution for a vast array of mission profiles, such as mission class, data rate, range, orbit, and communications standard.



»» RANGE
GEO to GEO+



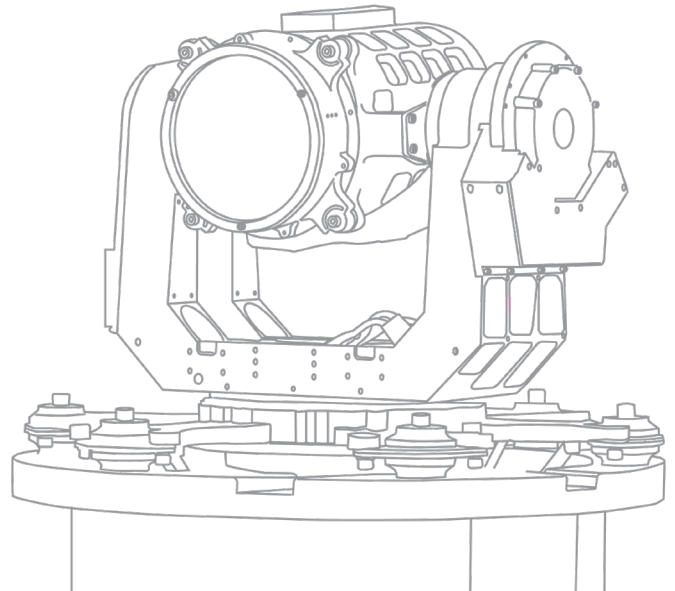
»» VOLUME
54 cm dia x 47 cm high (Optical Head)
23 cm x 22 cm x 31 cm (Electronics)



»» FINE TRACK LEVEL
1.5 μ rad

TECHNICAL SPECIFICATIONS

SYSTEM POWER	29 W Standby, 61 W Steady State
MASS	Optical Head - 18 kg Electronics - 15 kg
WAVELENGTH CAPABILITY	C-Band
BEACON	Data Beacon
TRANSMIT POLARIZATION	Switchable right & left-handed polarized states or dual polarization
RECEIVE POLARIZATION	Accepts all polarization states
WAVEFORM STANDARDS	CCSDS (with in band beacon)/SDA/Other
INTEROPERABLE	Yes
APERTURE SIZE	Base 10 cm (scalable to 12-15 cm)
OPTICAL POWER LEVEL	Up to 10 W transmit
INTENDED ORBIT	MEO/GEO+
FIELD OF REGARD (FOR)	Hemispherical



C&DH

COMMAND AND
DATA-HANDLING

Our C&DH products include Remote Interface Units (RIU) for MIL-STD remote spacecraft command and telemetry, Transmission Data Formatters which allow for common use of a single communication system supporting key missions like SDA, and Command & Telemetry Units (CTU) which provide command validation, execution, and telemetry collection for complex missions.

REMOTE INTERFACE UNIT (RIU)

AV's Remote Interface Unit (RIU) is a key component in distributed spacecraft data systems. The RIU is a MIL-STD-1553 controlled remote command and telemetry system.

KEY FEATURES

- » *Command Decoding and Distribution (Serial and Discrete)*
- » *Telemetry and Status Acquisition (Serial, Discrete, and Analog)*
- » *Thermal Control*
- » *Attitude Determination and Control*
- » *Power Distribution and Control*

COMMAND AND TELEMETRY UNIT (CTU)

The Command and Telemetry Control Unit (CTU) provides command validation, execution, and telemetry collection for complex missions. The CTU is customizable to our customer's needs and requirements.

KEY FEATURES

- » *Grade-1 Parts Program*
- » *Certified 15-year Mission Life*
- » *Redundant Fault Tolerant Design*
- » *High I/O Quantity Configuration*
- » *Status Telemetry Acquisition and Formatting*
- » *MIL-STD-1553 Data Bus Controller (Optional Space Wire Interface)*
- » *Radiation Hardened and Data Storage*



MISSION CONTROL PROCESSOR (MCP)

AV's Spacecraft Control Processor (SCP) contains all the features for complete control of the spacecraft, including attitude control, thermal control, power control, and data management.

KEY FEATURES

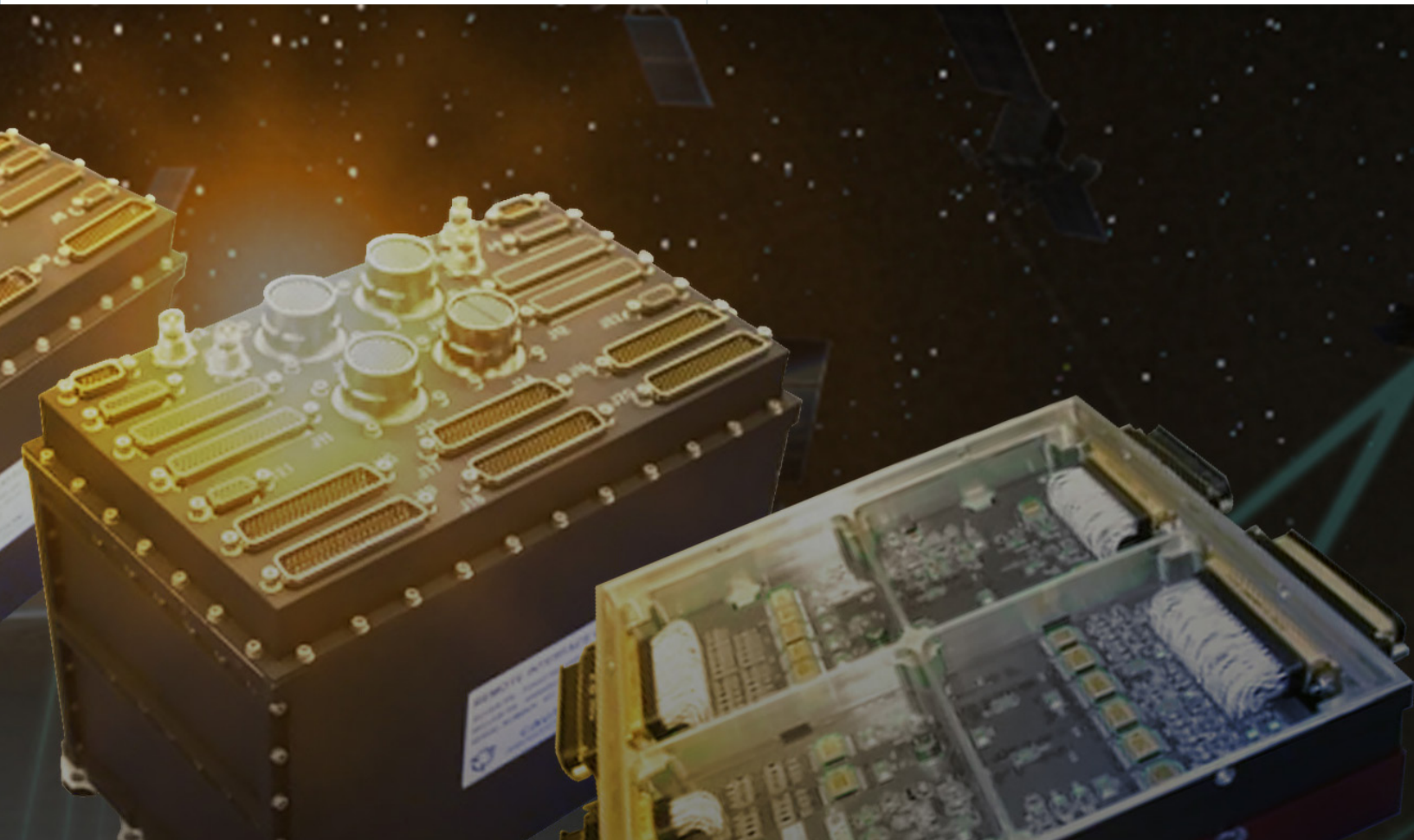
- » *Grade-1 Parts Program*
- » *Certified 15-year Mission Life*
- » *Redundant and Fault Tolerant*
- » *MIL-STD-1553 Data Bus Master (Optional Space Wire Interface)*
- » *Ethernet*
- » *Radiation Hardened*
- » *Precision Mission Clock*
- » *ADCS Interfaces*

TRANSMISSION DATA FORMATTER

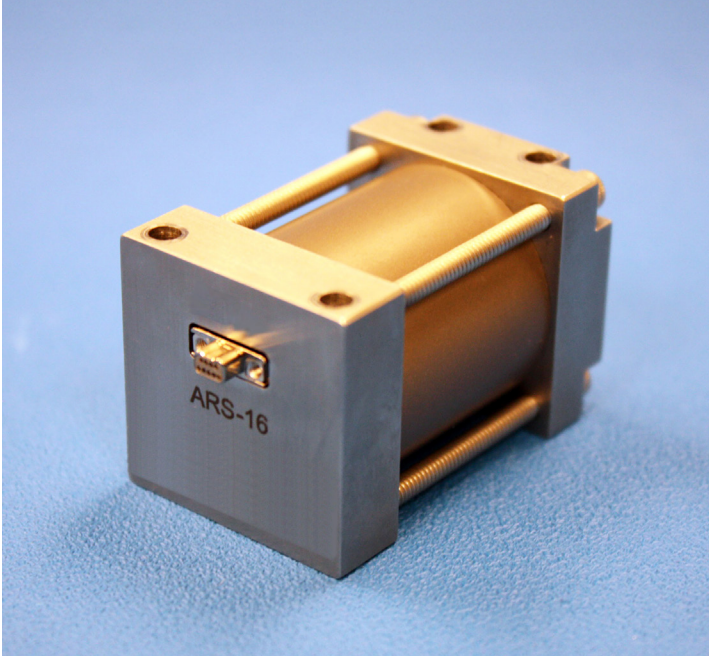
Our Transmission Data Formatter is a subsystem that encodes and interleaves multiple data streams, allowing common use of a single communication system. Key mission areas include Space Domain Awareness (SDA), multi-sensor weather missions, and data collection.

KEY FEATURES

- » *Grade-1 Parts Program*
- » *LEO, MEO, GEO Application Areas*
- » *Internally Redundant and Fault Tolerant*
- » *Deployed On-orbit (SBSS)*



ARS-16 ANGULAR RATE SENSOR + DYNAPAK-16



The ARS-16 is AV's most sensitive angular rate sensor, designed to work in a variety of high-performance applications, such as line-of-sight stabilization and precision motion control systems-measuring angular motions as low as 40 nanoradians over a wide frequency range. With low sensitivity to linear acceleration inputs, it is ideal for use in highly dynamic space-, airborne-, and ground-based platforms.

KEY FEATURES

AV's patented magnetohydrodynamic angular motion sensors utilize the finest materials and workmanship combined in durable packages that feature:

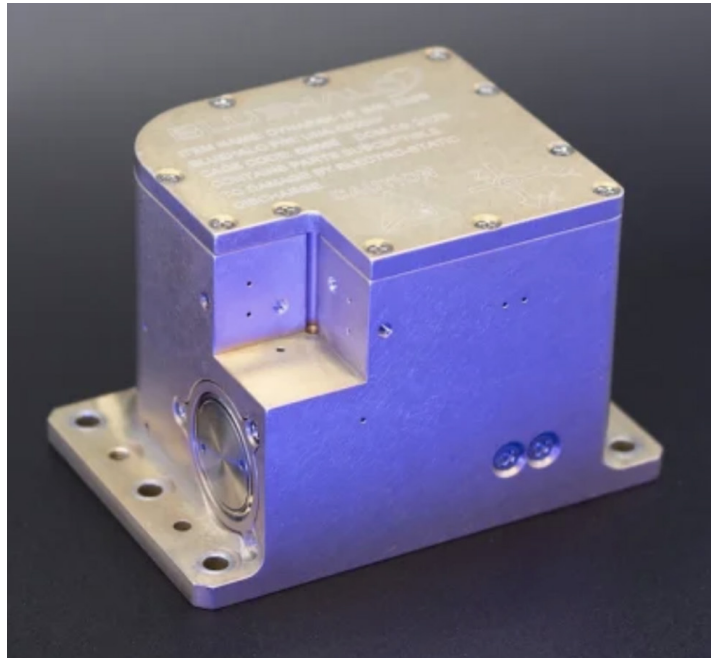
- » *Dynamic Range >120 dB*
- » *Wide Frequency Range <2 Hz to +1,000 Hz*
- » *Low Power Consumption*
- » *Low Cross-Axis Angular Sensitivity*
- » *Low Linear Acceleration Sensitivity*
- » *Integral Electronics/Low Noise*

TECHNICAL SPECIFICATIONS

ARS-16 RANGE	+/- 0.1 radians/sec
ARS-16 SCALE FACTOR	100 Volts/(rad/sec)
BANDWIDTH, -3 DB IN TESTING	<2 to +1,000 Hz
CROSS-AXIS ANGULAR ERROR	<2%
NOISE EQUIVALENT RATE	<5 x 10 ⁻⁶ radians/sec rms
NOISE EQUIVALENT ANGEL	<40 x 10 ⁻⁹ radians rms
TEMPERATURE COEFFICIENT	<0.3% Scale Factor/oC
POWER DISSIPATION	<0.2 Watts
OUTPUT IMPEDANCE	<100 Ohms
GROUNDING	Case isolated from signal common by 1MΩ minimum

Notes:

1. Based on a +/-10V output voltage swing.
2. Measured at 10 Hz, custom scale factors available.
3. Linear Acceleration Sensitivity is flat in angular displacement over sensor bandwidth.
4. Over 1-1000 Hz.
5. Percent change in Scale Factor per °C at 10 Hz.
6. Signal common may be connected to case if required.
7. Specifications are subject to change without notice.



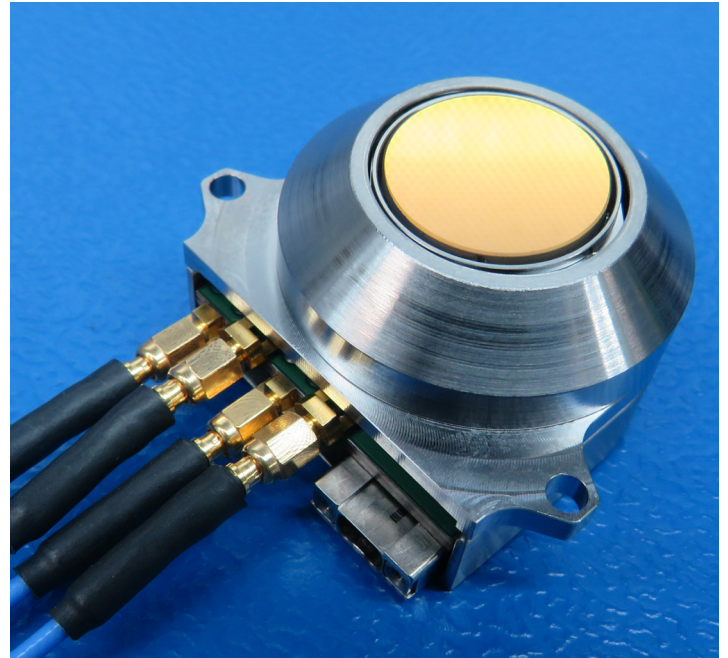
The Dynapak-16 is a space-qualified sensing package designed to measure jitter from platforms, optical payloads and systems, and for accurate line-of-sight imaging platform stabilization.

FSM FAST STEERING MIRRORS

AV's FSMs deliver low-jitter pointing accuracy for imaging, laser communications, and directed energy systems. AV has lab-grade FSM controllers at low cost and short lead time. Fully customizable and space-qualified FSM controllers are also available.

KEY FEATURES

- » *High acceleration*
- » *High bandwidth*
- » *Extremely low jitter*
- » *Multiple options for mirror material:*
 - » *Silicon carbide*
 - » *Single-crystal silicon*
 - » *Aluminum*
 - » *Beryllium*
 - » *Custom*



HIGH QUALITY, HIGH PERFORMANCE FSM TECHNOLOGY FOR:

SPACE

- » *Laser Communication*
- » *Optical Imaging*
- » *Scanning Systems*

AIR/LAND/SEA:

- » *High Energy Laser Directed Energy Weapons*



TECHNICAL SPECIFICATIONS

[OPTICAL]	SMALL	MEDIUM	LARGE / CUSTOM	
MIRROR SIZE	15 mm	32 mm	55 mm	Custom circular and elliptical mirrors available up to 300 mm
OPTICAL QUALITY	32 nm RMS	20 nm RMS	32 nm RMS	Custom options available as good as 10 nm RMS
REFLECTIVITY	Variety of coatings available including protected metal, dielectric, etc.			
[PERFORMANCE]				
ANGULAR RANGE	+/- 17.5 mrad	+/- 17.5 mrad	+/- 5 mrad	Up to +/- 3 degrees with lower bandwidth and acceleration
ACCELERATION	>5000 rad/s ²	>3000 rad/s ²	>2000 rad/s ²	
BANDWIDTH(CLOSED LOOP -3DB)	>1 kHz	>800 Hz	>750 Hz	Custom solutions available with bandwidth up to 5 kHz
JITTER (1 HZ TO 1 KHZ)	<1 μrad RMS	<1 μrad RMS	<1 μrad RMS	Custom solutions with jitter <100nrad for larger size mirrors
ACCURACY	Can be calibrated to 5 μrad/mrad accuracy			
[ENVIRONMENTAL]				
OPERATING TEMPERATURE	-20 to +50oC	-20 to +50oC	-20 to +50oC	
SURVIVAL TEMPERATURE	-30 to +60oC	-30 to +60oC	-30 to +60oC	Contact AV to discuss environmental conditions
VIBRATION (SURVIVAL)	12 grms	12 grms	12 grms	Contact AV to discuss environmental conditions
VIBRATION (OPERATIONAL)	Designed for ground, aircraft, or space applications			

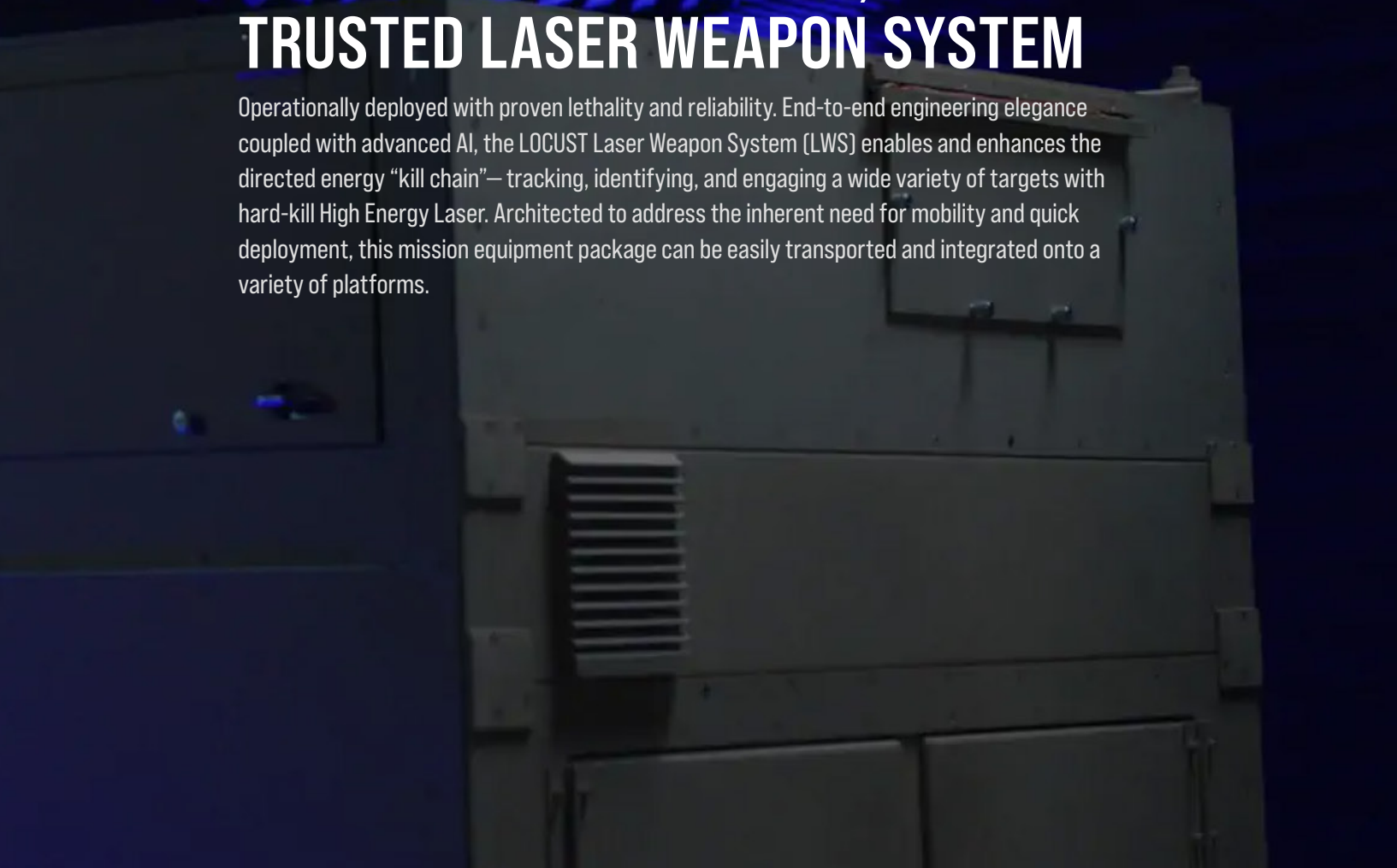
Specifications subject to change without notice.



Directed Energy

OPERATIONALLY PROVEN, OPERATOR TRUSTED LASER WEAPON SYSTEM

Operationally deployed with proven lethality and reliability. End-to-end engineering elegance coupled with advanced AI, the LOCUST Laser Weapon System (LWS) enables and enhances the directed energy “kill chain”— tracking, identifying, and engaging a wide variety of targets with hard-kill High Energy Laser. Architected to address the inherent need for mobility and quick deployment, this mission equipment package can be easily transported and integrated onto a variety of platforms.



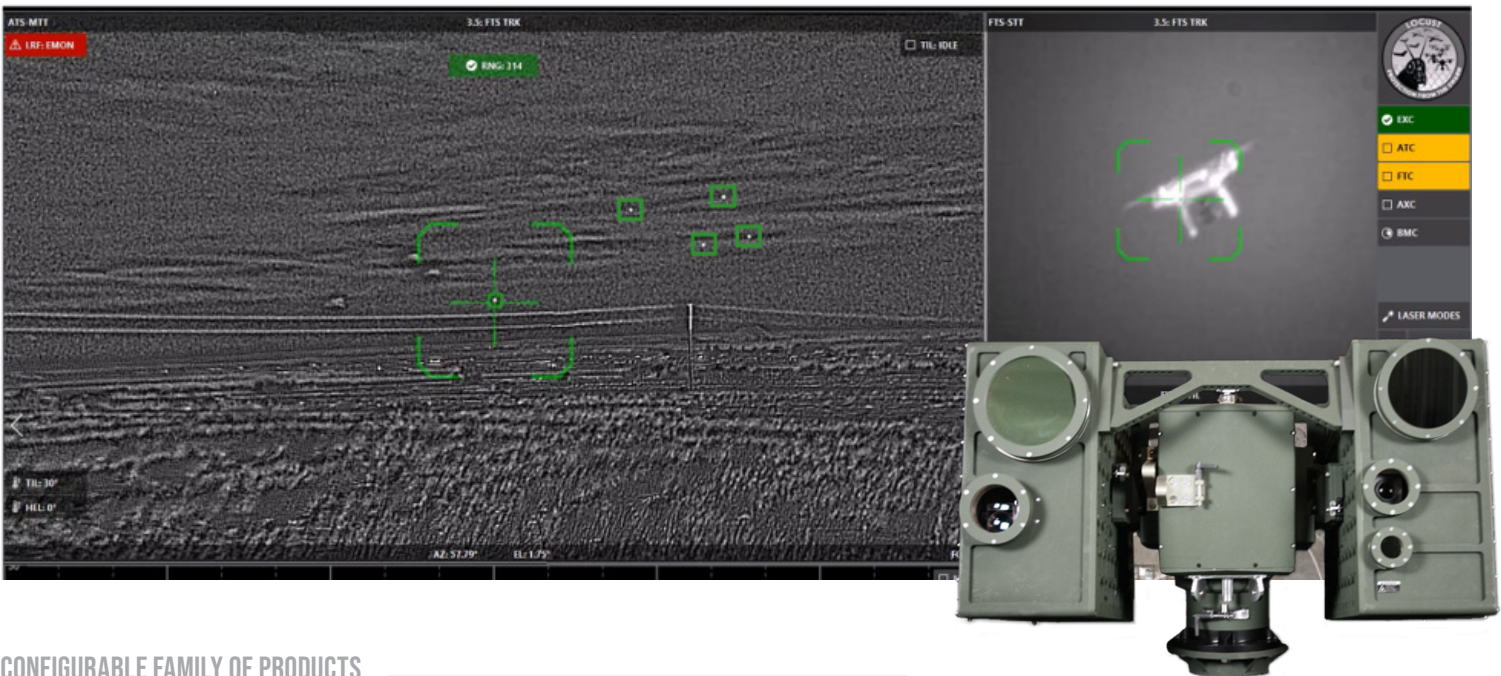
Locust

DIRECTED ENERGY
COUNTER-UAS SYSTEM

LOCUST is operationally deployed with proven lethality and reliability. End-to-end engineering elegance, coupled with advanced AI, LOCUST systems enable and enhance the directed energy “kill chain”—tracking, identifying, and engaging a wide variety of targets with a hard-kill High Energy Laser. Architected to address the inherent need for mobility and quick deployment, our mission equipment package can be easily transported and integrated onto a variety of platforms.

ADVANCED ELECTRO-OPTICAL (EO) TRACKING

LOCUST features an advanced gimbaled electrooptical tracking system designed for tracking various threat sets in cluttered or clear skies. This ISR unit features a fine tracking system (FTS), powerful telescope, laser rangefinder, acquisition tracking system (ATS), and targeting laser. Multiple camera payload options provide a wide field of view, aiding in early target identification and tracking. This system pairs with our High Energy Laser (HEL) and other effectors to neutralize threats.



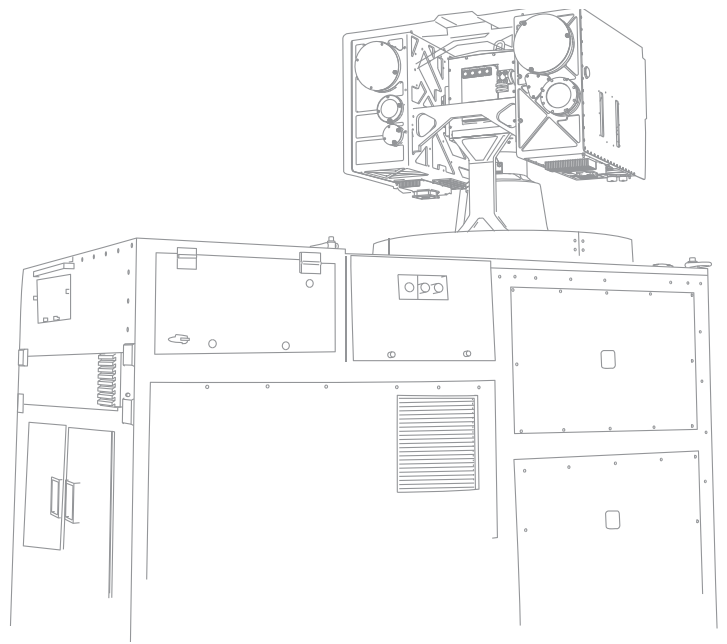
CONFIGURABLE FAMILY OF PRODUCTS

The LOCUST system is highly configurable to individual needs. The modular design of the system allows for users to tailor a solution suited to their needs, including system capabilities such as Laser Weapon power level, battery capacity, integration of external sensors, and thermal management systems. The focus of LOCUST is to maximize its value to our customers' missions at a reasonable price point. We are continually investing and upgrading our capabilities to ensure that our system works reliably in an increasingly complex air defense environment against a wide variety of threats. This ensures that the capability of LOCUST improves over time with every update.

WORLD-CLASS SOFTWARE, AUTOMATION, AND EXPANSIVE AI

The focus of LOCUST Target Acquisition and Tracking System (TATS) is to maximize its value to our customers' missions. That is why we pair state-of-the-art commercially available hardware with best-in-class software, algorithms, and Artificial Intelligence (AI) to maximize performance at a reasonable price point.

We are continually investing and upgrading our software capability to ensure that our system works reliably in an increasingly complex air defense environment against a wide variety of threats. This ensures that the capability of LOCUST TATS improves over time with every update.

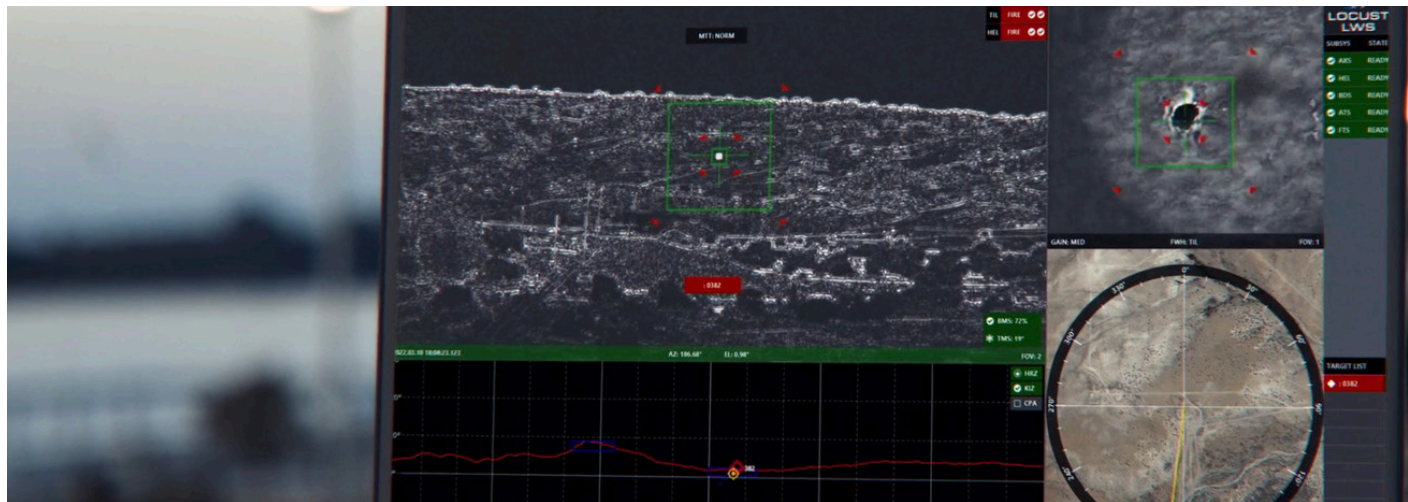


INTEGRATED RADAR & EFFECTOR PLATFORM

The LOCUST LWS features a radar and surveillance module, positioned on an extendable mast secured to a 463L compliant pallet for easy mobility. The tailorable payload can include a versatile quad-band electronic attack (EA) system, a comprehensive 360-degree radar, and a device for pinpointing directions from afar.

TECHNICAL SPECIFICATIONS

RF CUEING SENSOR INTERFACE AND OVERLAYS	"Plug-and-Play" capability with a wide variety of sensor types and RF bands.
MULTI-TARGET IR SEARCH AND TRACK MODES	Automated tracking capabilities that enable agile switching between targets in high density threat environments.
OPERATOR-OPTIMIZED WEAPON INTERFACE	LOCUST minimizes training impacts and improved operator success by leveraging a common gaming controller.
ULTRA-HIGH BANDWIDTH TRACKING	State-of-the-art, real time tracking overlays on high-definition video give operators the highest fidelity data for threat evaluation in complex air defense environments.
INTEGRATION SUPPORT FOR C2 NETWORKS	Accepts all polarization states
FIXED OR MOBILE PLATFORM CONFIGURATION	CCSDS (with in band beacon)/SDA/Other



Emerging Products and Capabilities





ROBO-MET, ELMNT, nxtHEALTH

AV's expert scientists, engineers and mission collaborate with their customers on cutting edge R&D into future challenges, mission-critical support, and technology transfer. These collaborations offer unique insights into complex and emerging problem spaces and enable us to deploy and co-develop solutions that are both forward-thinking and mission-aligned. This integrated approach drives sustained innovation that is informed by customer insights, and has produced some unique commercial products and capabilities.

Robo-Met AUTOMATED MATERIALS CHARACTERIZATION SYSTEMS

Robo-Met.3D[®] is a user-programmable fully automated, serial sectioning system for three-dimensional microstructural investigations. Capable of evaluating materials from carbon pitch foams to high temperature ceramics, the system ensures repeatable and accurate data is collected in an efficient and cost-effective manner. Robo-Met.3D[®] enables you to create more time for data analysis and characterization by eliminating the drudgery of long days sitting at the polishing station and microscope. Robo-Met systems have been integrated with multiple characterization methods such as electron microscopes for deeper analyses. We have also developed and deployed high throughput systems for automated conventional metallographic analysis (Robo-Met.QC[®]).



SYSTEM CAPABILITIES

MAXIMUM MOUNT SIZE	20" (50.8) Diameter
MAXIMUM TOTAL SECTIONING THICKNESS	0.4" (9.5 mm)
POLISHING FORCE	Min: 4.5 lbf (20N)
SECTION THICKNESS	Submicron to tens of μm removal per section
ETCHING	Automated immersion etching
OPTICAL ILLUMINATION	Bright field, standard. Polarized, DIC available

OVERALL SYSTEMS SPECIFICATIONS

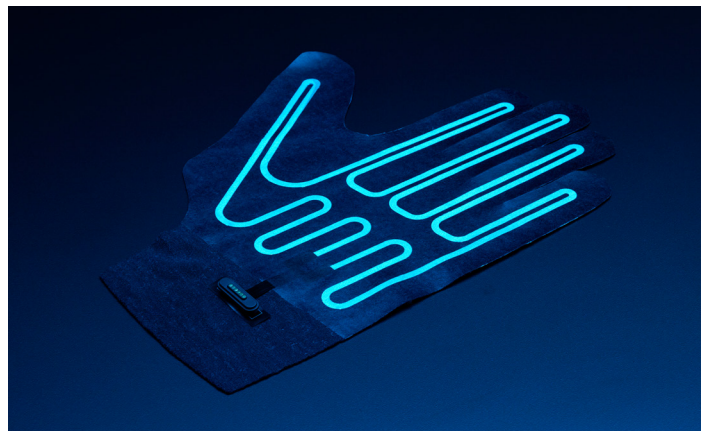
DIMENSIONS	43.8" (1.11m) Width x 65.0" (1.65 m) Depth x 80.5" (2.04 m) Height
WEIGHT	~1950 lbs (885kg)
CONSTRUCTION	4.0" (~100 mm) thick granite slab to eliminate vibration Heavy-Duty leveling casters for mobility
SAFETY FEATURES	Full steel/ Polycarbonate enclosure door safety interlocks Emergency stop button on external control system



ELMNT[®] FLEXIBLE CONDUCTIVE INKS

ELMNT[®] inks are a line of stretchable conductive inks for wearable and flexible electronic applications. ELMNT.ST and ELMNT.SL are high and low viscosity screen printing ink versions of the ELMNT[®] family and both are applicable to a range of mesh count screens (80 to 400 tpi).

ELMNT.BA is the blade coating ink version and has high viscosity for coating or patterning through stencil masks. ELMNT[®] has high conductivity and consistent resistance under strain making it ideal for data transmission, joule heating, and RF applications on textiles.



KEY FEATURES

- » *Low hysteresis*
- » *Stretchable with consistent conductivity*
- » *Room temperature processing*
- » *Compatible with polyurethane (TPU) for wearable electronic processing*
- » *Metallic bulk conductivity similar to aluminum*



SPECIFICATIONS

TEST	ELMNT.ST	ELMNT.SL	ELMNT.BA
VISCOSITY @ 200 S ⁻¹	300cP	2000cP	4100cP
SHEET RESISTANCE, Ω/SQ	0.05	0.05	0.05
CONDUCTIVITY, S/CM	3000	3000	3000
RESISTANCE CHANGE UNDER 100% STRAIN	<1.5	<1.5	<1.5
RESISTIVITY CHANGE WITH 10K CYCLES GROM 0-100% STRAIN	< 5%	< 5%	< 5%



nxtHealth® REHAB.XR VOCATIONALLY RELEVANT COGNITIVE REHABILITATION

Rehab.XR is a portable XR-based platform for assessment and rehabilitation of multi-sensory and cognitive function after mild traumatic brain injury (mTBI) to expedite RTD. The platform assists elite service members by gamifying complex tasks in an operationally relevant context. The immersive XR games assess balance, mobility, eye movement (gaze stabilization, smooth pursuit, saccades, convergence), and cognition (executive function, working and spatial memory, attention). Therapists can modify the visual complexity and cognitive demand of the games to adapt them to address individual service member needs.



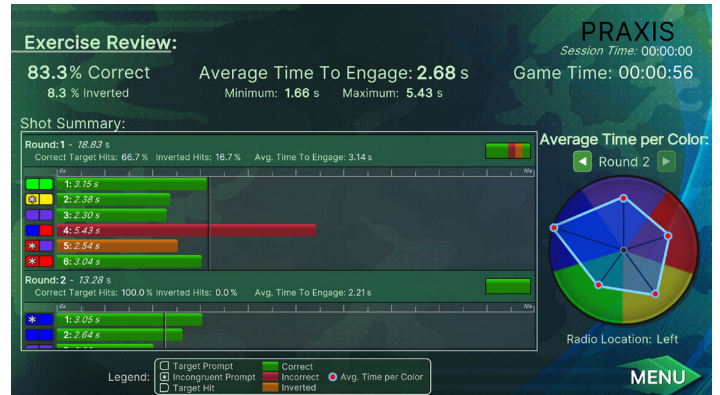
KEY FEATURES

» *Rehab.XR uses a COTS XR headset and a simulated rifle to provide an immersive therapy environment that doesn't require expensive infrastructure and can be set up at the point of need.*

» *Mobility testing with a cognitive dual task is a simple means to assess Return to Duty (RTD). The addition of extended reality (XR) to rehabilitation and testing adds realism to training for combat situations without the risk of harm.*



THERAPIST VIEW



AFTER ACTION REPORT



COTS EQUIPMENT



SYSTEM IN ACTION

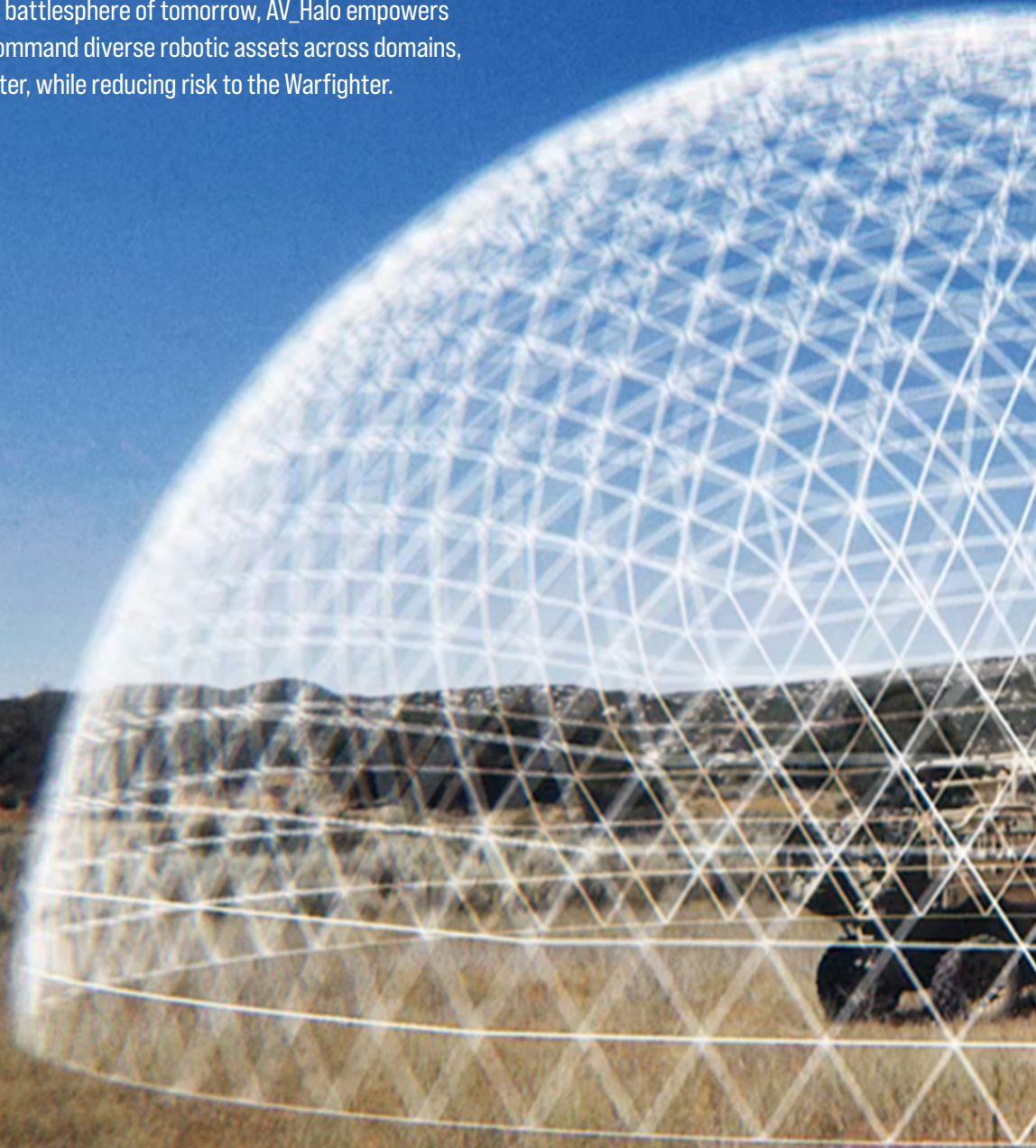
DISCLAIMER: Investigational device - limited by federal law to investigational use.



AV_Halo

COMMAND, CORTEX, PINPOINT, VISION

AV_Halo™ is the human-centered, hardware-agnostic tactical software platform that unifies autonomous systems into a single, intuitive, and open-standards ecosystem. Designed for the battlesphere of tomorrow, AV_Halo empowers warfighters to seamlessly command diverse robotic assets across domains, making better decisions, faster, while reducing risk to the Warfighter.

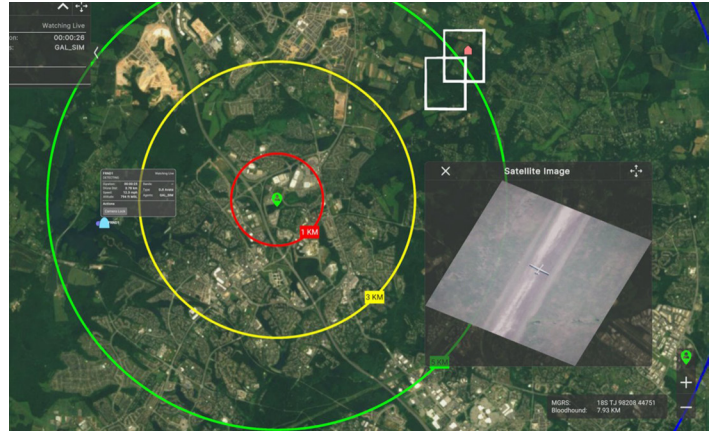




AV_Halo™ OWN THE MISSION. COMMAND THE FUTURE.

AV_Halo™ from AV is a next-generation, AI-forward software platform engineered for interoperability and human-machine teaming. It transforms how militaries deploy autonomous systems replacing siloed, manpower-intensive operations with a unified, scalable, and mission-ready ecosystem.

Operating across air, land, sea, and cyber, AV_Halo™'s modular open architecture enables plug-and-play integration with AV and third-party assets. Built for seamless operation in contested and even denied environments, AV_Halo™ provides dynamic command-and-control (C2), real-time edge intelligence, and mission autonomy that adapts to evolving threats. With AV_Halo™, forces regain affordable mass, accelerate OODA loops, and enhance survivability, all without locking into a proprietary, closed system.



AV_HALO™ COMMAND

» Battle Management with C2 for unmanned vehicles. Situational awareness that drives decision-making with continuous, AI-enhanced sensor feeds, telemetry, and environmental data into a secure, mission-specific operating picture. It enables theater-wide asset coordination, whether fixed, mobile, or distributed.



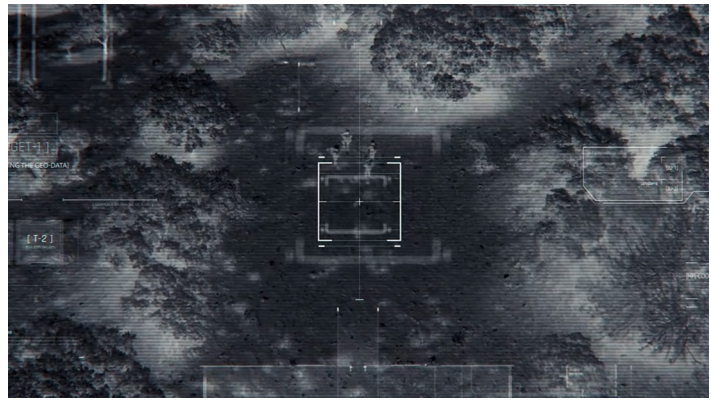
AV_HALO™ VISION

» Onboard Computer Vision for Autonomous Targeting. AV Metis™ Vision enables real-time visual processing and ISR capabilities on-platform, even in GPS-denied or comms-degraded environments. Enhanced with fused tracking from the C2 Core, it delivers persistent autonomous targeting.



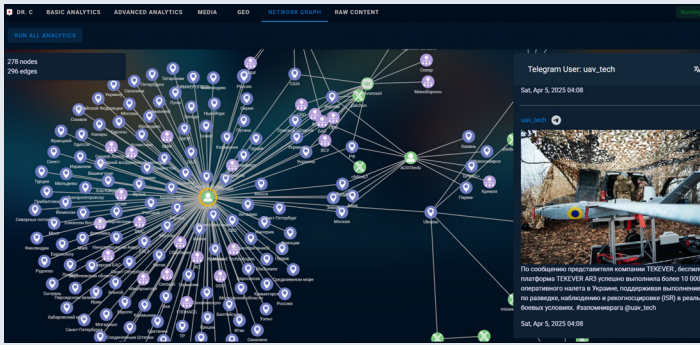
AV_HALO™ PINPOINT

» Directed Energy, Pointing and Tracking technologies with Offensive RF and laser capability payloads that allows new and legacy platforms to operate independently across ISR, loitering, and strike profiles. Tight coupling with the C2 Core enables responsive autonomy driven by real-time threat perception.



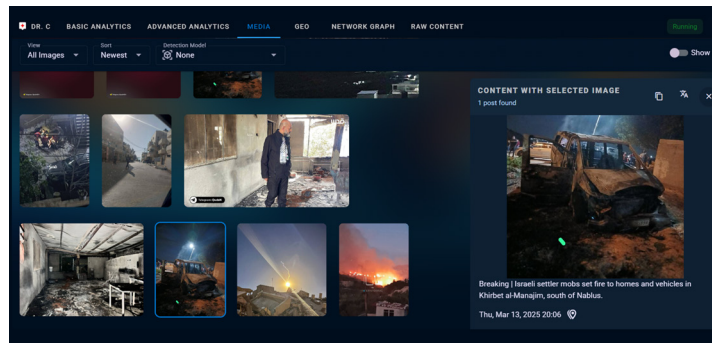
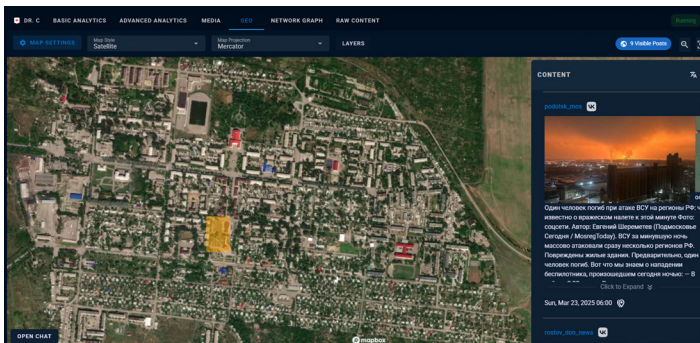


AV_Halo™ Cortex THE BATTLESPHERE'S COGNITIVE ENGINE



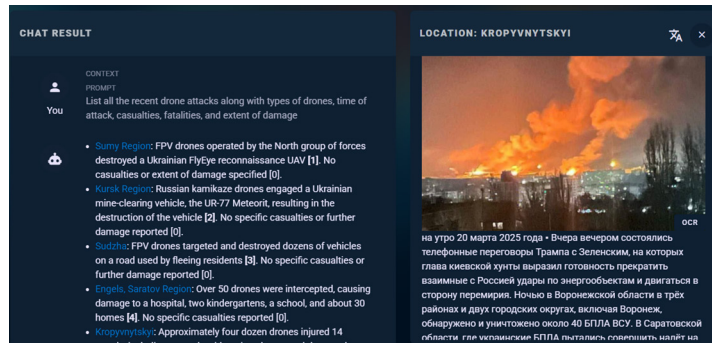
AV_Halo™ Cortex provides AI data mining and layered intelligence capability set that provides image geolocation, predictive analytics, data fusion and intuitive user interfaces for easy data dissemination. Cortex leverages the AV's compute cluster for rapid model development and deployment.

HaloCortex | Scraawl



USE CASE

HaloCortex (Scraawl) is a multi-source, multi-modal platform for collection and exploitation of publicly available information (PAI). Using natural language queries, OSINT analysts can search curated live and historical data and then fuse the data with BlueHalo's world-class text, image, video, network, and geospatial analytics to gain mission insights. Users can also combine results with their own custom datasets and documents to produce comprehensive evidence-based disseminable reports.



_MISSION-RELEVANT PAI SEARCH

Search from hundreds of millions of curated PAI data on theaters of operation, active conflict zones, global and regional power competition to quickly and efficiently build only mission-relevant dataset.

_ADVANCED ANALYTICS

The highly interactive dashboard provides multiple analytic views of the data, e.g., a map display with geo-fencing of posts, automated face and objection detection in images, and a network visualization of influencers, communities, bots, and named entities.

HaloCortex | Telesto



USE CASE

_SATELLITE TASKING & DETECTION AS A SERVICE

In partnership with multiple satellite data providers, Telesto offers automated monitoring services for known facilities and transportation networks, and cost-effective broad area tasking and searching for discovery of unknown structures and sites, and tracking site changes.

_SOURCE-AGNOSTIC

Deep learning-based perceptual harmonization creates a temporal datacube of satellite images drawn from multiple satellite sources. Broad area search and characterization algorithms detect and classify heavy construction activities at global scale. The system distinguishes natural changes from anthropogenic activities for GEOINT analysis.

HaloCortex | GeoPoint



USE CASE

_CUSTOMIZED GEOSPATIAL REPORTING

GeoPoint fuses data from multiple PAI/CAI sources including social media and news outlets. It provides insight into geopolitical events, emerging threats and key actors in identified locations, and offers templated reporting customized for each organization's unique format and mission.

_OPERATIONAL BENEFITS

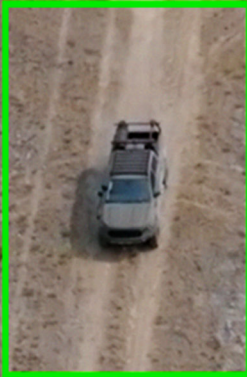
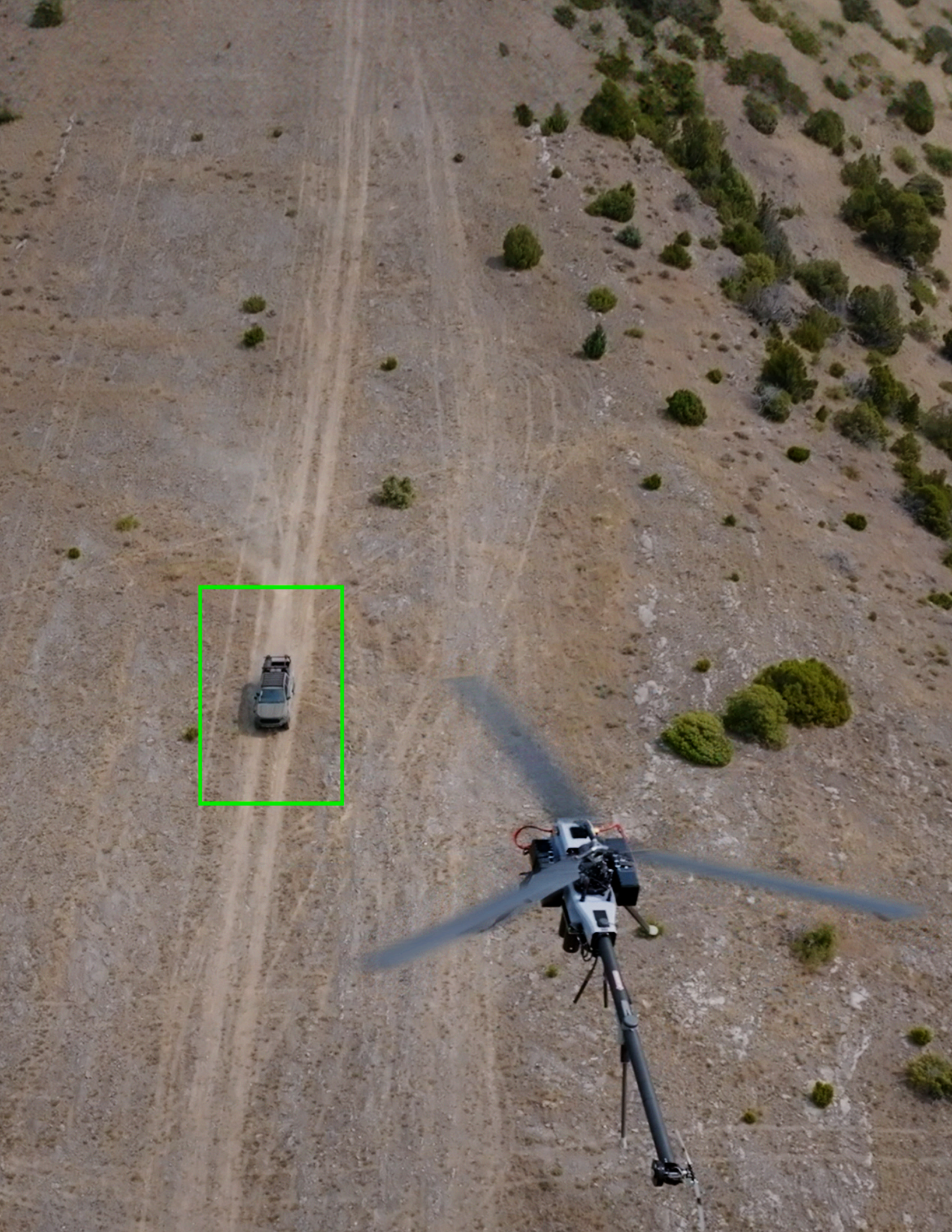
GeoPoint accelerates time to locate imagery from days to minutes, rapidly identifies non-locatable photos with confidence assessment to save analysts' time, and is accessible on multiple networks, or on-prem deployment for secured applications.

Autonomy & Perception

AV's AI-driven autonomy and perception technologies provide warfighters with critical advantages from reduced cognitive load to faster decisions across any domain and platform – accelerating autonomy on every level.

For currently fielded Group 1+ UAVs, the ARK™ (Autonomy Retrofit Kit) is a quick-connect payload that introduces a new suite of AI-enabled mission capabilities and collaborative teaming operations, safely bringing critical intelligence and oversight to warfighters.

Pre-installed with AVACORE™ and SPOTR-Edge™ software, ARK enables rapid development of autonomy behaviors and delivers one of the most powerful computer vision platforms in defense.



ARK™ AUTONOMY RETROFIT KIT

ARK is a quick-connect payload that brings AV's accelerated autonomy to fielded Group 1+ UAV assets and future uncrewed platforms, providing critical advantages to warfighters. Directly compatible with Puma™ 3 AE and Puma™ LE, ARK is designed as an open and modular system that also enables easy integration of AI-driven autonomy and computer vision on a wide range of uncrewed platforms.

The ARK system accelerates autonomy across uncrewed platforms, allowing defense forces to accomplish various tasks without constant operator oversight. ARK enhances mission efficiency while enabling faster responses to dynamic situations.

ENABLING TEAM COLLABORATION

Operators can task single UAVs or teams with autonomous missions, distributing intelligence and oversight to dismounted units using a mesh network and ATAK. ARK also enables networked remote tasking for powerful control of aircraft and sensors between primary operators and command personnel – wherever they are located.



»» COMPATIBILITY
Puma™ 3 AE & Puma™ LE



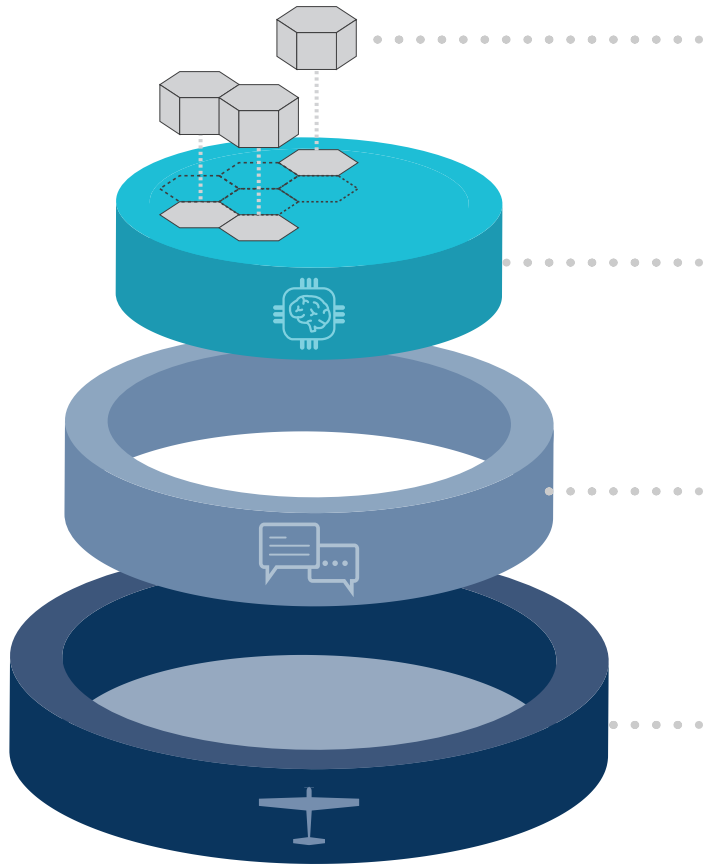
»» INTEGRATION
ATAK & MANET Radio

SINGLE- OR MULTI-AGENT CAPABILITIES

MULTI-REGION SEARCH	Terrain-aware sensor coverage of multiple search regions using onboard AI target detection
AREA SURVEY	Create 3D area map with EO or IR imagery
OVERWATCH	Persistent observation of desired area for target detection
TRACK & FOLLOW	Track and follow targets, including evasive targets
ISTAR WITH STRATEGIC COMMS	Automatically configure UAV radio to comply with geo-tagged EMCON rules while conducting autonomous ISTAR missions
TRIPWIRE	Event or condition-based responses to real-time perception
CROSS-CUE	Accept and/or send target information from/to other assets
COMPOSITE MISSIONS	Combine above capabilities for composite multi-stage missions



AVACORE is AV's autonomy software that implements autonomous missions for uncrewed systems. It provides a framework for rapidly adopting new behaviors and algorithms for these missions.



PLUG-INS

- Plug-in interfaces allow alternative waypoint planning, target detection, team behaviors, and other algorithms
- Discovered at run-time to dynamically enhance behaviors

AVACORE

- Executes complex, adaptable missions for single agent or team autonomy
- Missions are defined by behavior trees that can be loaded at run-time, delivering maximum flexibility for users
- Common message definitions provide the canonical data model for adapting specialized platform hardware to mission

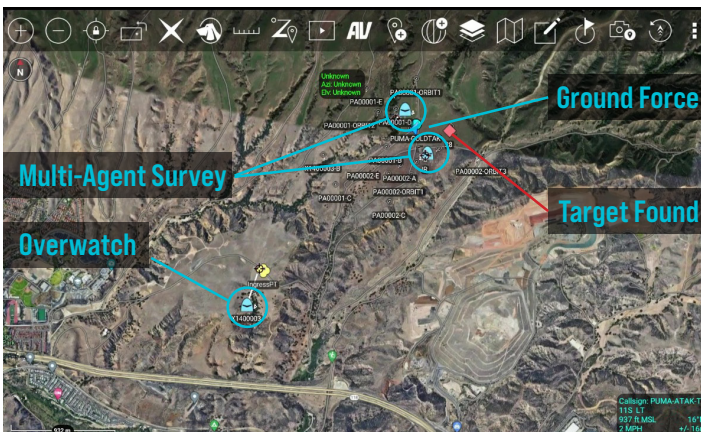
BRIDGE

Software interface adapters for each of the platform devices

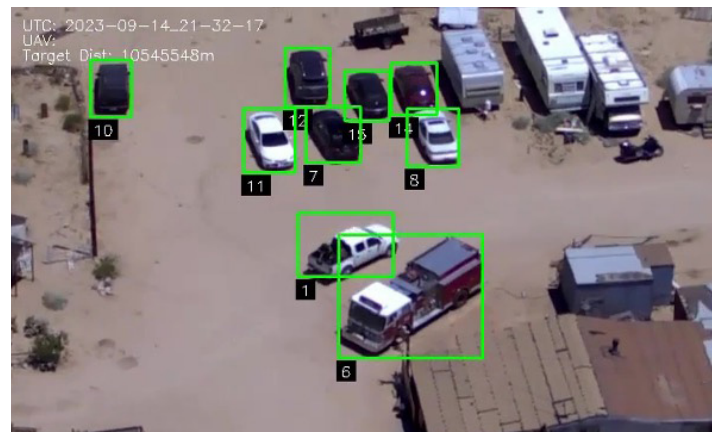
PLATFORM

Uncrewed vehicle platform to be enhanced by AVACORE

- Autopilots
- Sensors
- Emitters/Designators
- Kinetic Payloads
- Radios
- Drop Mechanisms
- User Interfaces



Through AVACORE, ATAK with SPOTR-Edge™ provides multi-agent collaborative autonomy



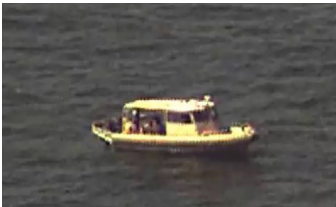
Modular to support mission specific or third-party AI models



SPOTR-Edge™ COMPUTER VISION SOFTWARE

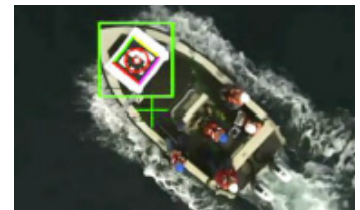
SPOTR-Edge is a suite of computer vision and video analytics capabilities for embedded applications including robotic systems, edge devices, and other low size, weight and power (SWaP) environments. Core functions include object detection, classification, localization / geolocation, tracking, and re-identification – day or night. SPOTR-Edge consumes video and metadata sources in standard formats and outputs real-time data products to the onboard autonomy software and/or other downstream consumers.

Messaging APIs adhere to an interface control document (ICD) and streaming outputs include MISB-compliant KLV [key-length-value] metadata for platform and target track data. The baseline software includes a library of operationally relevant object classes including persons and different types of vehicles and maritime vessels; additional models can be provided to meet mission-specific requirements and use cases. Target models are swappable in the field and online for maximum flexibility, and to allow for upgrades and extensibility.



ACE™ AUTONOMOUS CONTROL ENGINE

ACE (Autonomous Control Engine) is a vision-based navigation solution that enables fully-autonomous UAS operation, including push-button takeoff and landing from confined spaces, moving vehicles, and moving vessels. ACE enables centimeter-level precision landing in dynamic conditions without GPS.



This optical guidance system enables fully autonomous UAS launch and recovery onto a small passive optical marker, without GPS.

KEY FEATURES

- » Suitable for UAS that needs to operate from moving vehicles and vessels on land or at sea
- » GPS-optional operation
- » Standard open interfaces for compatibility with third-party and legacy systems
- » Enables mobile tethered UAS for long duration missions



ACE system tracks a passive visual fiducial called a "tag" during takeoff and landing to achieve centimeter-level accuracy and real-time operation.

ALEC

AUTONOMY LEARNING AND
EXPERIMENTATION CLASS

TRAIN TODAY. LEAD TOMORROW. As a leading innovator in mission autonomy, AV has resources to help your organization train, trial and integrate advanced AI solutions such as ARK™ and AVACORE™ into your fielded Puma™ assets or other UAS.

As a leading innovator in this space, AV has developed resources to help your organization train, trial and integrate advanced AI solutions such as ARK and AVACORE into your uncrewed operations.

Train with our experts at our place or yours. AV offers an educational training and experimentation course designed to empower your organization with practical knowledge and skills required to integrate AI and unlock its unlimited potential.



4-DAYS AT AV

Visit AV! Hosted at our East or West Coast locations, this hands-one experience pairs your team with multiple Pumas enhanced with ARK.

Fly AI-enabled single or multi-agent missions and more. Training developed for up-to 10 participants.

4-DAYS ON-SITE

AV brings the action to you? This immersive course held at your location, features multiple Pumas equipped with ARK.

Run a variety of AI-enabled missions under real-world scenarios relevant to your operation. Train up-to 12 participants.

AVACORE™ SDK

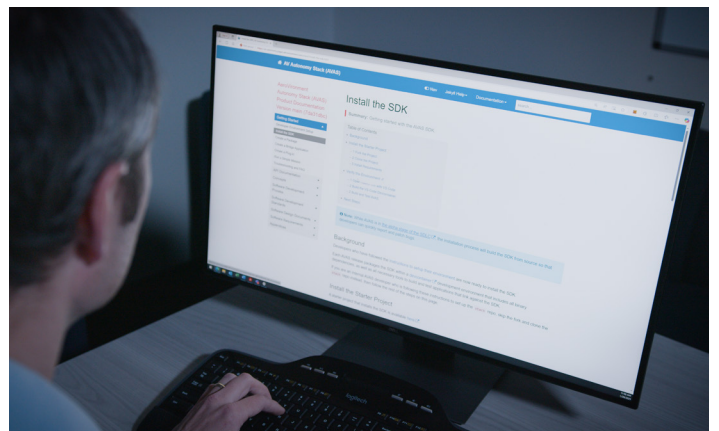
RAPIDLY BUILD
MISSION AUTONOMY

LEVERAGE PRE-BUILT RESOURCES. The AVACORE SDK enables UxS development teams to build custom autonomy tasks and behaviors for robotic systems and teams. It allows for quick deployment of new AI-powered mission capabilities to multiple UxS platforms working the tactical edge. Each SDK release includes a dev container environment with all necessary dependencies and tools, ensuring efficient setup and project initiation.

JUMPSTART DEVELOPMENT. The AVACORE SDK includes a powerful starter project template for development, with instructions for building:

- *Custom packages – Modular software units within the stack*
- *Bridge applications – Interface layer applications*
- *Plug-ins – Custom mission- and platform-specific applications*

TRIAL TODAY. AVACORE SDK is available at no cost to any government lab or AV customer for trial.



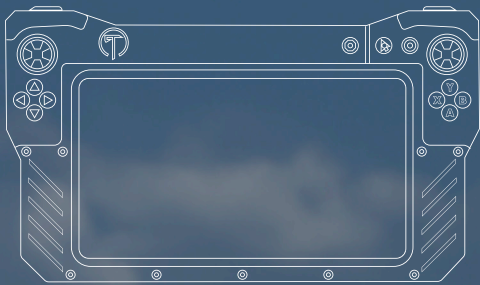


Network Connectivity

AV's small UAS feature a completely refreshed ground control experience through integration with Tomahawk's Grip controller and Kinesis software ecosystem. All AV Group 1 and 2 offerings, including next-gen LMS products, will come standard with the Tomahawk GCS solution. Tomahawk™, an AV product line, provides operators with a new core GCS software architecture and tactical hardware.

The Tomahawk GCS is radio-agnostic and seamlessly integrates with the broadband digital network module, Digital Data Link™, or any IP-based MANET RF data link for enhanced command and control in a network-centric battlefield. Featuring robust data encryption across multiple frequency bands, this IP-based module is designed for maximum flexibility and interoperability between small airborne systems and ground systems with limited power requirements.

Tomahawk™ Grip TA5



The Grip TA5 is Tomahawk's next-generation 8" tactical controller, built to enhance situational awareness and precision strike capabilities. Designed around the Samsung Tab Active 5 Tactical Edition, the Grip TA5 delivers seamless command and control with enhanced processing power, security, and connectivity. Its ergonomic improvements and streamlined tablet installation reduce operator fatigue and setup time, ensuring mission success in dynamic environments.

KEY FEATURES

- » 8 in ruggedized controller optimized for precision strike & multi-domain operations
- » Supports ISR and fire control functions
- » Seamless integration with the Samsung Tab Active5 Tactical Edition
- » Enhanced software security & advanced networking capability
- » Ergonomic design with optimized button placement for ease of use
- » Toolless USB-C access for fast, reliable connectivity
- » Simplified tablet installation for rapid deployment

Tomahawk™ Ground Control Stations



The Tomahawk GCS is an AI-enhanced, open-architecture common control system providing multi-domain, multi-robotic command-and-control capabilities. Tomahawk's Kinesis software and Kinesis SDKs enable rapid development, integration, and deployment of 3rd-party technology to the warfighter at the edge, and unlock an extensive ecosystem of protocols, comms, robotic platforms, and AI to the warfighter.

Tomahawk Hardware

(A) GRIP S20

Grip S20 is a rugged controller designed around the Samsung Galaxy S20 Tactical Edition smartphone. Grip S20 is military-hardened and provides an intuitive UI to simplify UxV control. Available with an optional hinged MOLLE chest mount.

(B) KxM

KxM is a 4-port hub and edge processor providing users with a ruggedized platform to ingest large amounts of data for high-speed, body-worn computation at the tactical edge, reducing cognitive load, and fusing raw intelligence data for real-time decision-making. KxM can host a federated TAK/ATAK server while performing AI-based video classification.

(C) MxM-MINI

MxM-Mini is a Nett Warrior-compliant data link that seamlessly integrates with the leading tactical UxVs. Available with multiple operating frequencies and radio modules including Wi-Fi - choose your uncrewed system, strap the corresponding MxM-Mini to your kit, and deploy the UxV with the knowledge that the link is secure and reliable across the tactical network.



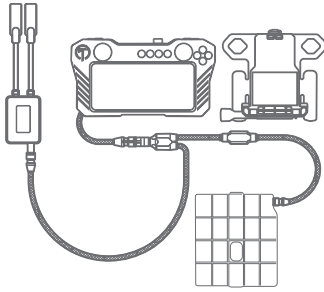
(D) RAID

RAID is a modular, all-in-one tactical GCS designed to provide advanced networking, edge processing, and AI-driven C2 capabilities. With hot-swappable radios and batteries, it supports adaptable, multi-robotic control via the Grip and TA5 controllers. Built with a Modular Open Systems Approach (MOSA), RAID enables seamless integration of future technologies, ensuring a scalable, mission-ready solution. It consolidates the full functionality of the KxM and Kinesis ecosystem into a lightweight, snag-free backpack.

Kinesis Software

At the heart of the Tomahawk GCS is Kinesis, a powerful tactical software solution enabling multi-robotic command-and-control, tactically-optimized mission planning, TAK/ATAK integration to provide video rebroadcasting, COT messaging, and bi-directional syncing of POIs. Kinesis optimizes the vehicle pairing process, enables UxV formations and control, and a map engine that supports multiple sources via layers, DTED, and coordinates in both Lat Long and MGRS.

Tomahawk™ Ultralight GCS



» PORTABILITY
Wearable



» SETUP TIME
5 min



» LINK RANGE
5 km

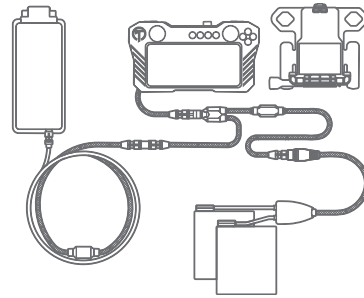


» WEIGHT
System: 4.7 lb [2.1 kg]

USE CASE

Single operator (wearable); ideal for on-the-move and mobile ISR operations; virtual touch screen or tactile joystick of UAS and payloads

Tomahawk™ Tactical GCS



» PORTABILITY
Backpackable



» SETUP TIME
10 min



» LINK RANGE
20 km

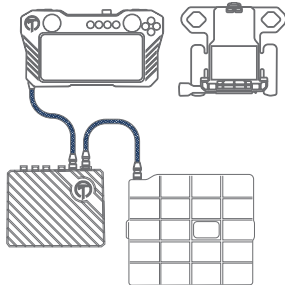


» WEIGHT
System: 8.6 lb [3.9 kg]

USE CASE

Single operator deployment and launch; full control of UAS and payloads through virtual or tactile joysticks; wearable, lightweight, rugged for use in any environment with an operational range up to 20 km

Tomahawk™ Common Control GCS



» PORTABILITY
Wearable



» SETUP TIME
5 min



» LINK RANGE
Determined by Datalink

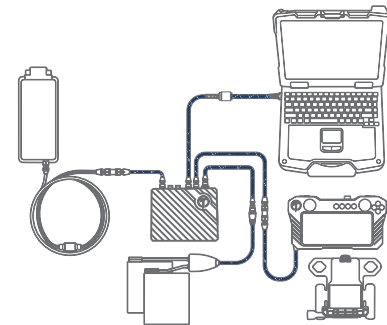


» WEIGHT
System: 5.4 lb [2.4 kg]

USE CASE

Single operator (wearable); provides situational awareness, battlefield coordination and support to large and/or small teams; multi-domain and multi-robotic control

Tomahawk™ Command GCS



» PORTABILITY
Man-packable



» SETUP TIME
15 min



» LINK RANGE
20 km



» WEIGHT
System: 14.3 lb [6.49 kg]

USE CASE


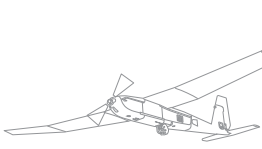
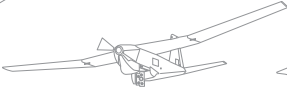

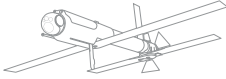

Single or dual operator deployment; all-in-one modular and flexible ground control system and payloads through tactile joysticks; ideal for AI-enhanced command-level operations; semi-fixed positions

Configure to Order

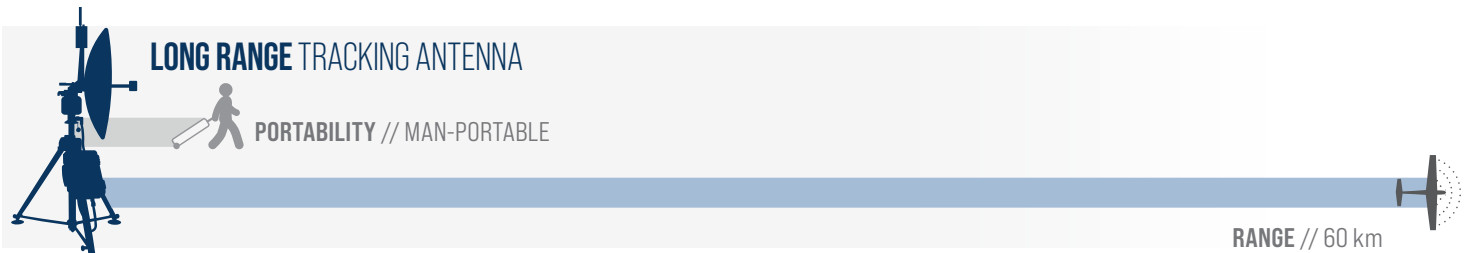
Each Tomahawk GCS configuration supports various operational needs, from wearable ISR solutions to full-scale command deployments. The configure-to-order process allows operators to tailor their GCS setup by selecting compatible controllers, networking modules, radios, and power solutions to meet mission-specific requirements. For streamlined procurement and deployment, customers can work with Tomahawk representatives to configure their ideal GCS package, ensuring seamless integration with existing systems and maximizing operational effectiveness in multi-robotic, multi-domain environments.

DDL™ Network Antennas

AV's Digital Data Link™ (DDL™) is a small, lightweight, broadband digital network module enabling enhanced command and control of SUAS and LMS. DDL is IP-based, allowing maximum flexibility and interoperability between small airborne and ground systems with limited power and bandwidth to maximize the number of systems that can operate in a given area. DDL is compatible with AV's network connectivity solutions and antennas, providing command and control ranges that extend from the wearable, short-range pDDL™ (5 km) to the Long Range Tracking Antenna (60 km).

DDL™ FREQUENCIES	COMPATIBLE UAS
 <p>M1/2/5 OR M3/4/6</p>	 <p>PUMA™ LE</p>  <p>PUMA™ 3 AE</p>  <p>RAVEN®</p>  <p>SWITCHBLADE® 600</p>  <p>SWITCHBLADE® 300 BLOCK 20</p>

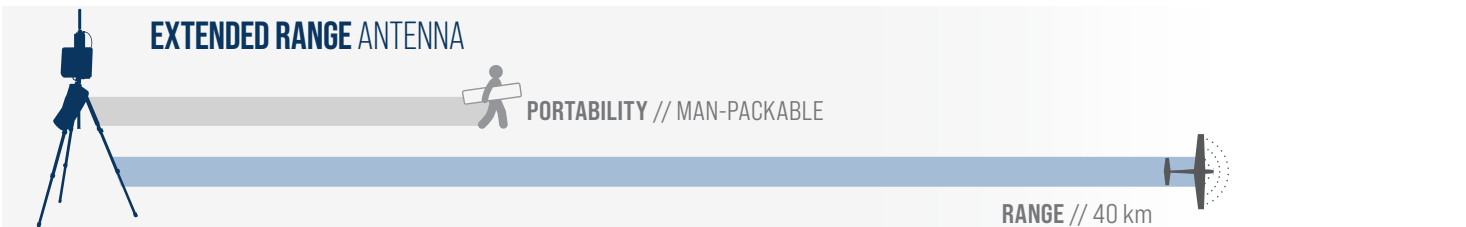
LONG RANGE TRACKING ANTENNA



PORTABILITY // MAN-PORTABLE

RANGE // 60 km

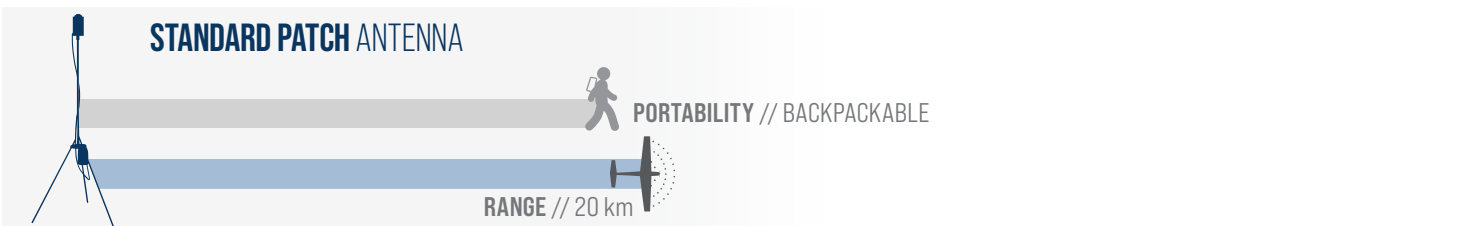
EXTENDED RANGE ANTENNA



PORTABILITY // MAN-PACKABLE

RANGE // 40 km

STANDARD PATCH ANTENNA



PORTABILITY // BACKPACKABLE

RANGE // 20 km

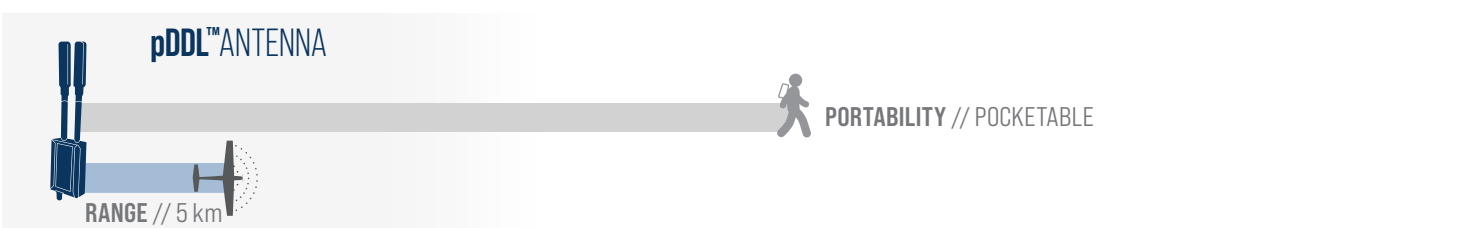
STANDARD OMNI ANTENNA



PORTABILITY // BACKPACKABLE

RANGE // 10 km

pDDL™ ANTENNA



PORTABILITY // POCKETABLE

RANGE // 5 km



pDDL™ Antenna



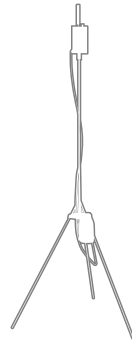
DIMENSIONS

4 in x 2.25 in x 0.75 in
(10.2 cm x 5.7 cm x 1.9 cm)

WEIGHT

7.1 oz (201 g)

Standard Range Antenna



DIMENSIONS

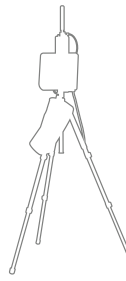
Height: 6.5 ft (2 m)
Base Diameter: 3 ft (0.9 m)

WEIGHT

3 lb (1.3 kg)

ERA™

EXTENDED RANGE ANTENNA



DIMENSIONS

Height: 4.25-7 ft (1.3-2.2 m)
Base Diameter: 3.75-8.2 ft (1.1-2.5 m)

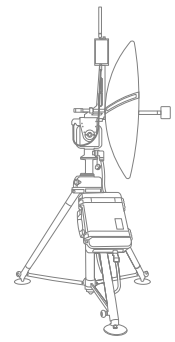
WEIGHT

10.8 lb (4.9 kg)

Note: excludes the GCS RF Head, hub and system battery

LRTA

LONG RANGE TRACKING ANTENNA



DIMENSIONS

Height: M1/2/5: 5.8-9.4 ft (1.8-2.9 m)
M3/4/6: 5.25-8.8 ft (1.6-2.7 m)
Base Diameter: 5.3 ft (1.6 m)

WEIGHT

M1/2/5: 304 lb (138 kg)
M3/4/6: 300 lb (136 kg)

	pDDL	STANDARD RANGE	ERA	LRTA
LINK RANGE	Up to 5 km	Up to 20 km	Up to 40 km	Up to 60 km
OPERATING BANDS	M1/2/5 or M3/4/6	M1/2/5 or M3/4/6	M1/2/5 or M3/4/6	M1/2/5 or M3/4/6
RX SENSITIVITY	-98 dBm @ 2 Mbps -93 dBm @ 6 Mbps	-98 dBm @ 2 Mbps -93 dBm @ 6 Mbps	-98 dBm @ 2 Mbps -93 dBm @ 6 Mbps	-98 dBm @ 2 Mbps -93 dBm @ 6 Mbps
POWER CONSUMPTION	9 W	20 W	20 W (pass through, not additional)	275 W (nom., heater off) 460 W (max., heater on)
OPERATING VOLTAGE	5.5-16 V	5.5-16 V	5.5-16 V	90-250 V ac, 47-65 Hz
DATA RATE	4.5 Mbps	4.5 Mbps	4.5 Mbps	4.5 Mbps
SUPPORTED COMPRESSION	MPEG2 or H264 SD	MPEG2 or H264 SD	MPEG2 or H264 SD	MPEG2 or H264 SD
INTERFACES	USB	Ethernet/RS-232/RS-485	Ethernet/RS-232/RS-485	Ethernet/RS-232/RS-485
ENCRYPTION	AES-128/AES-256	AES-128/AES-256	AES-128/AES-256	AES-128/AES-256

Uncrewed Ground Vehicles

UGV

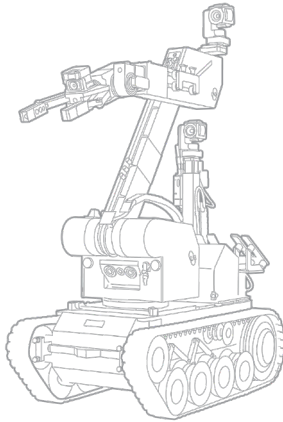
Our family of uncrewed ground vehicles (UGV) share the same purpose as our uncrewed aircraft and loitering munition systems: to keep operators out of harm's way.

Our UGVs have proven themselves in a variety of dangerous ground applications, including the localization and mitigation of threats due to explosive ordnance disposal (EOD), hazardous materials handling (HAZMAT), chemical, biological, radiological and nuclear (CBRN) threat assessments, and special weapons and tactics (SWAT) team operations.

With their advanced, specialized, precision manipulators, autonomous functionality and intuitive operation, our rugged, all-terrain UGVs accommodate a high degree of mission flexibility. That's why they have been adopted in 45 countries for homeland security, emergency response and defense purposes.



tEODor™ Evo



DIMENSIONS

54 in x 27 in x 44 in
(1370 mm x 685 mm x 1130 mm)

WEIGHT

844 lb (383 kg)



» **LIFTING CAPACITY**
220 lb (100 kg)



» **GRIPPER WIDTH**
12 in (300 mm)



» **MANIPULATOR**
6-axis manipulator with linear axis



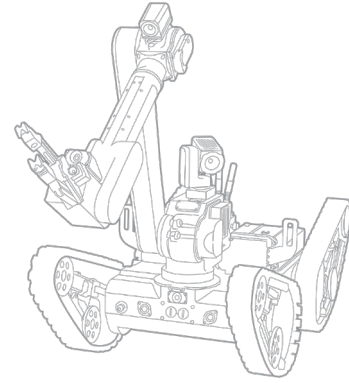
» **CLIMB STAIRS & SLOPES**
45°

TOTAL PAYLOAD CAPACITY	771 lb (350 kg)
SPEED	1.8 mph (3 km/h)
DRIVE MECHANISM	Dual track-independent high-torque motors
FUNCTION-ALITY	Upward Reach with Vertical Gripper: 113 in (2860 mm)
	Upward Reach with Horizontal Gripper: 95 in (2410 mm)
	Forward Reach: 73 in (1860 mm)
	Downward Reach: 50 in (1260 mm)
GCS	Robo Command

KEY FEATURES

- » Laser rangefinder, video input & data interface integrated into gripper
- » Universal interfaces—multiple firing system connection options
- » Expansive payload bay eliminates round-trip load-outs

telemax™ Evo Plus



DIMENSIONS

34 in x 27 in x 29 in
(870 mm x 680 mm x 740 mm)

WEIGHT

249 lb (113 kg)



» **LIFTING CAPACITY**
176 lb (80 kg)



» **GRIPPER WIDTH**
8 in (200 mm)



» **MISSION DURATION**
Up to 12 hr



» **CLIMB STAIRS & SLOPES**
45°

TOTAL PAYLOAD CAPACITY	154 lb (70 kg)
SPEED	3.1 mph (5 km/h)
DRIVE MECHANISM	4-track running gear with individually adjustable flippers
FUNCTION-ALITY	Obstacle Height: 16 in (400 mm)
	Gap Width: 20 in (500 mm)
GCS	Robo Command

KEY FEATURES

- » Heavy lift capable precision 6-axis manipulator
- » Tool Center Point Control provides precise, humanlike movement of the manipulator
- » Double payload bay provides space for additional batteries & sensors
- » Pre-programmed automatic manipulator & flipper motion sequences

MISSION VARIANTS



EOD
Explosive Ordnance Disposal



HAZMAT
Hazardous Materials

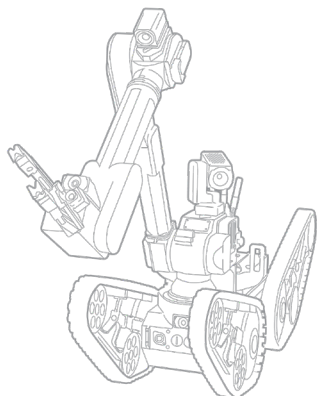


CBRNE
Chemical, Biological, Radiological, Nuclear & Explosives



SWAT
High Risk Law Enforcement Operations

telemax™ Evo Hybrid



DIMENSIONS

32 in x 16 in x 30 in
(815 mm x 400 mm x 770 mm)

WEIGHT

Max. 176 lb (80 kg)



»» LIFTING CAPACITY
82 lb (37 kg)



»» GRIPPER WIDTH
8 in (200 mm)



»» MISSION DURATION
Up to 10 hr



»» CLIMB STAIRS & SLOPES
45°

TOTAL PAYLOAD CAPACITY	68 lb (31 kg)
SPEED	Max. 6.2 mph (10 km/h)
DRIVE MECHANISM	4-track running gear with individually adjustable flippers; optional wheels
FUNCTION-ALITY	Obstacle Height: 20 in (500 mm) Gap Width: 24 in (600 mm)
GCS	Robo Command

KEY FEATURES

- »» Compact design suited for confined spaces, e.g., airplanes, underground trains & buses
- »» Tool Center Point Control provides precise, humanlike movement of the manipulator
- »» Pre-programmed automatic manipulator & flipper motion sequences

INTERCHANGEABLE ACCESSORIES



Optics/Visual Augmentation



UGV Communications



Power Sources



Wheels/Tracks
(Wheels for Hybrid & Pro only)

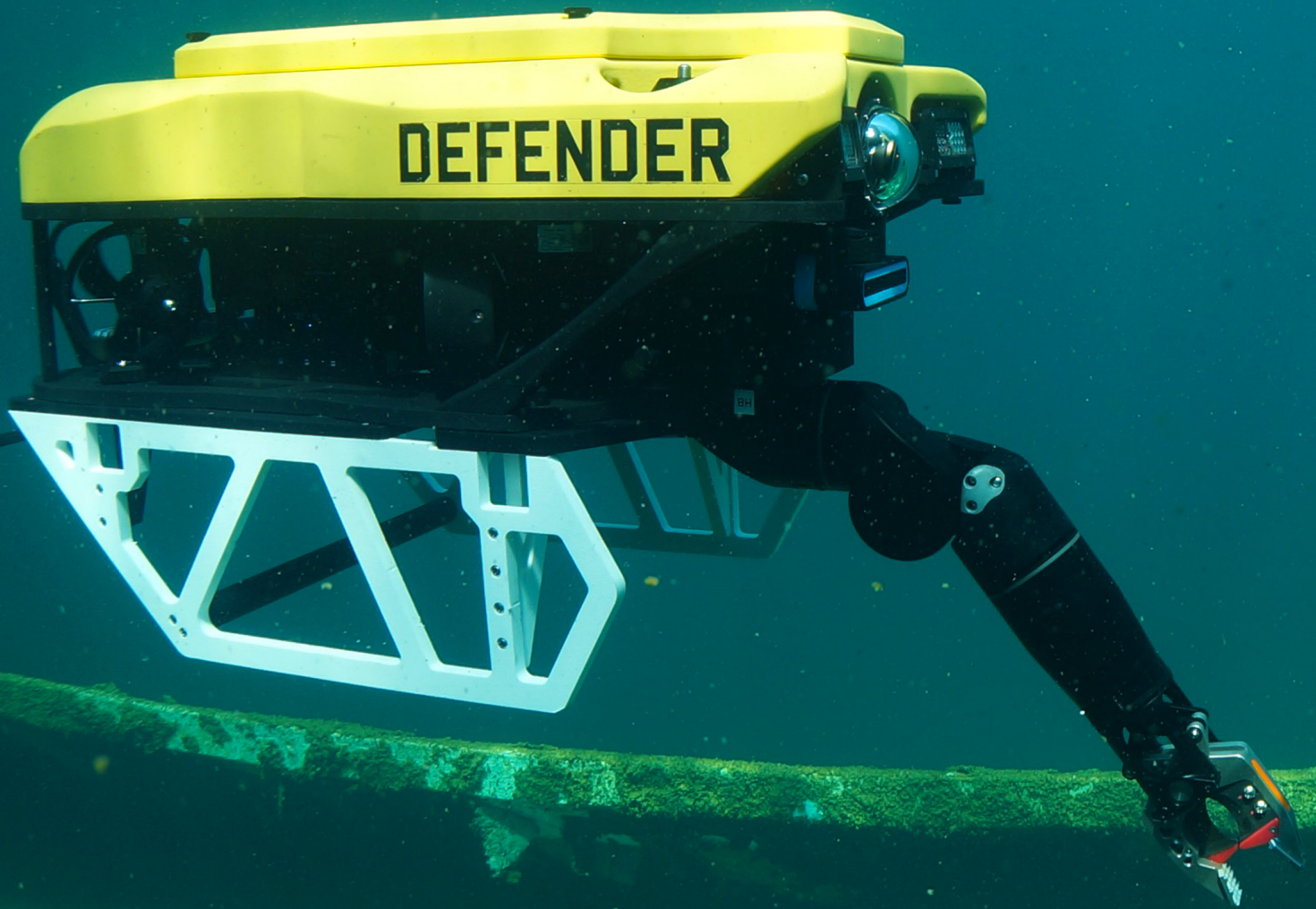


Tooling & Hauling



Render Safe Options

Mission Specialist ROVs





ROVS

The Mission Specialist Remotely Operated Vehicles (ROVs)—including the Defender, Ally, and Pro 5—are built on a flexible, modular architecture that enables rapid payload integration, in-field adaptability, and unmatched power for its compact size. One-person deployable and rated up to 1,000 meters, these ROVs perform inspection and intervention tasks well beyond the limits of traditional inspection class systems.

Trusted in programs such as the U.S. Navy's Maritime Expeditionary Standoff Response (MESR), the Mission Specialist series delivers safety, precision, and effectiveness. With hundreds of systems deployed worldwide, they provide allied naval forces with a scalable, combat-proven advantage in the maritime battlespace.

MISSION
SPECIALIST

Defender

PROVEN, POWERFUL, AND ADAPTABLE

The Mission Specialist Defender is a combat-proven ROV purpose-built for modern naval and expeditionary operations. Selected by the U.S. Navy for its Maritime Expeditionary Standoff Response (MESR) program, Defender delivers the precision and reliability required for missions including explosive ordnance disposal, port security, and subsea infrastructure protection.

Six vectored thrusters provide unmatched maneuverability in strong currents and confined spaces, while its modular design enables rapid integration of sensors, manipulators, and effectors to meet evolving threats. Compact, rugged, and easy to maintain, Defender is one-person deployable and lowers life-cycle costs, giving defense operators a scalable, mission-ready force multiplier.



DEPTH RATING
Up to 1000 m (300 meters standard)



THRUSTERS
4 Horizontal 3 Vertical



MAX SPEED
Forward: 4; Vertical: 0.8m/s; Sway: 1



MAX LIFT
9.97 kg



POWER SOURCE
Topside or battery

DIMENSIONS
71.12 x 39.37 x 23.80 cm

WEIGHT
17.2 kg without ballast



CAPABILITIES

COMBAT-PROVEN RELIABILITY	Selected by the U.S. Navy for the MESR program, trusted for high-stakes defense missions.
UNMATCHED POWER	Six vectored thrusters provide precise control in strong currents, confined spaces, and cluttered environments.
MISSION ADAPTABILITY	Modular design integrates our widest range of advanced sensors, manipulators, and effectors for EOD and intervention tasks.



COMPACT, ECONOMICAL, AND INTEROPERABLE

The Mission Specialist Ally Remotely Operated Vehicle (ROV) is ideal for challenging subsea inspection applications that require a cost-effective approach. Based on Mission Specialist's modular design, Ally offers a solid entry-level solution and serves as a force multiplier for economical fleet expansion and interoperability.

Engineered for portability without sacrificing power, the Ally provides reliable access to complex, high-risk subsea environments for missions such as explosive ordnance disposal (EOD) support, port and harbor security, and infrastructure inspection.

Lightweight and easy to deploy from virtually any platform, the Ally enables rapid response, force protection, and enhanced situational awareness—delivering capability where and when it matters most.



»» DEPTH RATING
Up to 300 m



»» THRUSTERS
2 Horizontal 2 Vertical



»» MAX SPEED
Forward: 4; Vertical: 0.8m/s; Sway: 1



»» MAX LIFT
9.52 kg



»» POWER SOURCE
Topside

DIMENSIONS

64.1 L x 30.5 D cm

WEIGHT

13.6 kg without ballast



CAPABILITIES

COMPACT FOR RAPID DEPLOYMENT

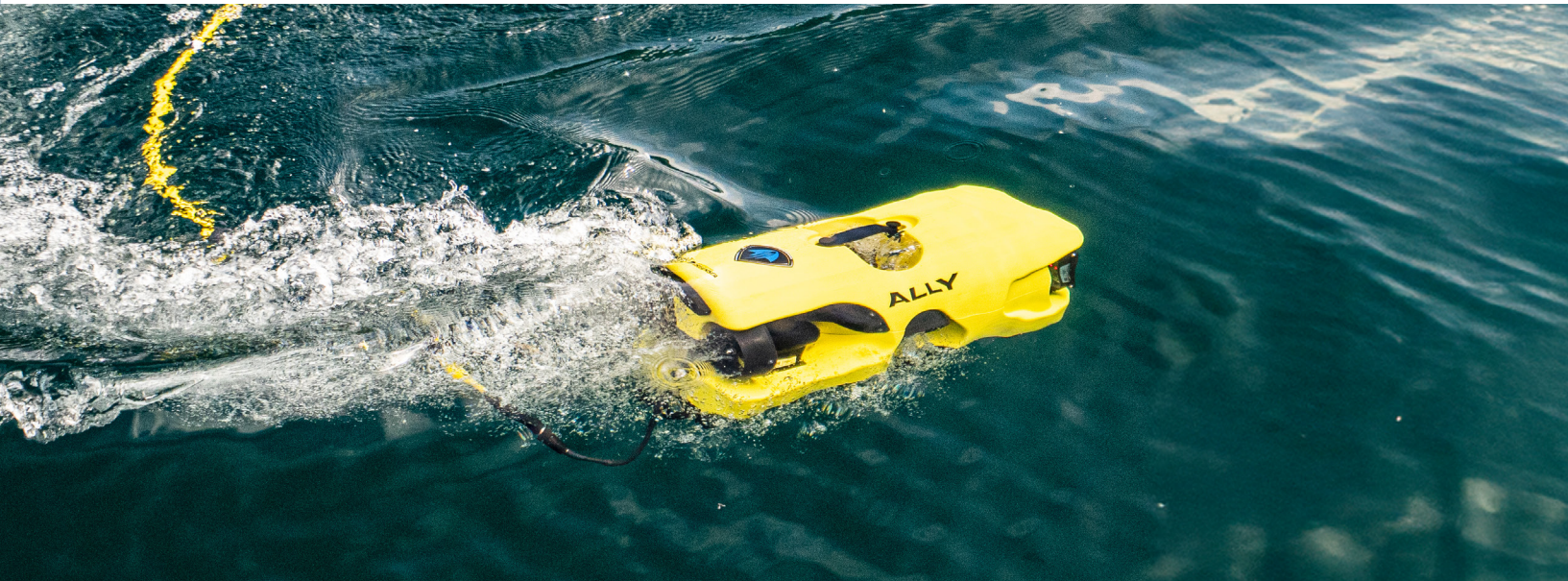
12" diameter ensures Ally is small enough for rapid deployment from virtually any platform and capable of entering confined spaces.

ECONOMICAL FOR FORCE MULTIPLICATION

Provides a cost-effective solution for naval operators to expand subsea capability without overextending budgets.

INTEROPERABLE ACROSS THE FLEET

Shares common parts with other Mission Specialist vehicles, ensuring field readiness and sustainment in critical expeditionary operations.



MISSION SPECIALIST **Pro 5**

PERFORMANCE, SIZE, AND SPEED

The Mission Specialist Pro 5 is a rugged, expeditionary Remotely Operated Vehicle (ROV) built for speed, portability, and reliability. Weighing under 12 kg and one-person deployable, its three-thruster system delivers forward speeds over 4.4 knots with a depth rating of 300 m.

Compact yet powerful, the Pro 5 offers enhanced control and modular payload options – from advanced sensors to high-definition imaging – enabling rapid adaptation to inspection, intervention, and security tasks. Trusted worldwide, it provides defense operators with a mission-ready platform that reduces logistical burden while delivering proven capability in both routine operations and high-risk maritime environments.



»» DEPTH RATING
Up to 300 m



»» THRUSTERS
2 Horizontal 1 Vertical



»» MAX SPEED
Forward: 4; Vertical: 0.8m/s; Sway: 1



»» MAX LIFT
9.97 kg



»» POWER SOURCE
Topside

DIMENSIONS

51.49 x 33.02 x 25.73 cm

WEIGHT

11.8 kg without ballast

CAPABILITIES

HIGH PERFORMANCE FOR MISSION ASSURANCE

Delivers the power, precision control, and modular payload options needed for inspection, intervention, and security tasks in challenging subsea environments.

SMALL IN SIZE, BIG IN CAPABILITY

Weighing under 12 kg, the Pro 5 is one-person deployable yet rugged enough for defense-grade operations at depth.

SPEED WHEN SECONDS COUNT

Forward speed of over 4.4 knots, the Pro 5 ensures rapid response and efficiency in time-sensitive naval missions.





DEFENDER

ORANGEA



Field Operations and Customer Support

SUPPORT SERVICES

FIELD OPERATION SERVICES

- » AV provides world-class field operation services on a global scale. Our field operation services include fully-equipped and staffed turnkey solutions and outstanding OEM-certified operators, instructors and maintainers.

FIELD SERVICE REPRESENTATIVES

- » Our Field Service Representatives (FSRs) provide on-site field service support and act as the liaison between customers and our engineering team. The FSRs are highly qualified to provide on-site flight standardization program development and training support package development.

PROGRAM MANAGEMENT AND SME SUPPORT

- » We supply customer-focused program management and subject matter expert (SME) support. Our exceptionally skilled staff provides tailored mission planning and operational support, and we include engineering support from the original equipment manufacturer. We also offer on-site sustainment operations development and delivery.

SUSTAINMENT OPERATION

- » We support our customers with sustainment operations, including professional inventory control and comprehensive logistical services. Our logistical support includes extensive planning, coordination and monitoring to successfully plan and maintain operations.

AIRWORTHINESS

- » AV's airworthiness organization monitors and evaluates airworthiness regulation initiatives in key markets and regions across the globe to ensure our products conform to our customers' airworthiness certification needs.

TRAINING

- » We specialize in student-centered learning using state-of-the-art, interactive 3D digital training media that aids in the retention of information and promotes student participation. Courses include simulator-focused mission scenarios providing a real world digital experience, hands-on practical exercises, mission planning and live flight field operations. We offer all levels of operator training from basic to advanced courses in a safe and controlled environment. Our distinctive training program is recognized both domestically and internationally.

QUALITY

- » AV's ISO-9001:2015 production and service facility ensures the highest level product and support quality. The company's unmatched experience and technology roadmap combine to deliver an outstanding customer experience in situations where reliability and effectiveness can make the difference between success and failure.