

Puma™ VNS VISUAL NAVIGATION SYSTEM



AV's Puma™ VNS is a visual-based navigation system for Puma 2AE and Puma 3AE small unmanned aircraft systems (SUAS). Puma VNS enables GPS-denied navigation across GPS-contested environments. The system performs Visual Inertial Odometry (VIO) through a suite of integrated sensors and an onboard compute module to determine the precise location of the aircraft during flight.

Designed to adapt to a continuously changing battlefield, Puma VNS will enable increasingly advanced navigation capabilities, features and functionality through future software and hardware updates. Available as an add-on option for new Puma 3AE system orders and as a retrofit kit allowing existing Puma 2AE and Puma 3AE customers to upgrade fielded systems.

Visual-based Navigation System for Puma™ AE

PUMA™ VNS

_Distinctions



COMPATIBILITY

Puma™ 2AE & Puma™ 3AE



WEIGHT

Operational: 1.2 lb (0.54 kg)

_Specifications

ENDURANCE	2 hr with Puma™ Smart Battery ¹ 2.4 hr with PS2500 Battery ¹
INSTALLATION	Initial factory or depot-level retrofit installation of external mounting pad then plug & play field installation & removal
ENVIRONMENTAL RATING	All-weather (excluding water landing)
OPERATING ALTITUDE	800 ft (244 m) AGL typical ²

1. Based on sea level mission with standard configuration and conditions
2. Position accuracy reduced at higher altitude

[INCLUDED IN KIT]



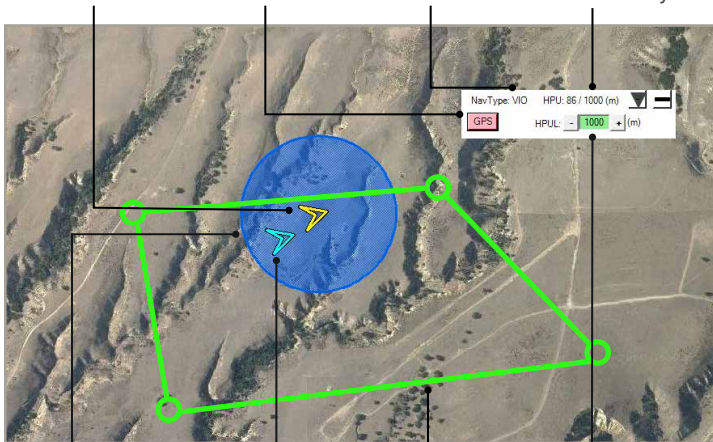
LASER RANGE FINDER
IR SENSOR

COMPUTE MODULE

_Key Features

- > Zero pilot input required for seamless mission continuity through GPS-contested environments
- > Two-piece low-swap retrofit kit available for existing Puma 2AE, Puma 3AE & new Puma 3AE systems
- > Performs Visual Inertial Odometry (VIO) through onboard sensors to estimate true location without GPS
- > Enables integration of future autonomy capabilities
- > Minimal performance impact to Puma™ aircraft
- > Compact—Fits into existing Puma™ case for mission packout

VNS ESTIMATED LOCATION	GPS STATUS	NAV TYPE	HPU STATUS
Yellow Arrow	Red: Disabled Green: Enabled	GPS VIO AIR	Current Estimated Uncertainty



HORIZONTAL POSITION UNCERTAINTY (HPU)	GPS LOCATION	MISSION WAYPOINTS	HPUL
Cyan Circle	Blue Arrow	Green Outline	Horizontal Position Uncertainty Limit

