



Flight Control Solution For:



Flight Control Solutions > Visual Navigation System

Visual Navigation System - VNS

UAV Navigation has developed a Visual Navigation System (VNS) which massively reduces the accumulated positional error during Dead Reckoning Navigation.

Key Features:

Accurate Navigation System for GNSS-Denied environments



Improves Dead Reckoning Navigation by a factor of 6



Lightweight Onboard Computer for Real-Time Image Processing

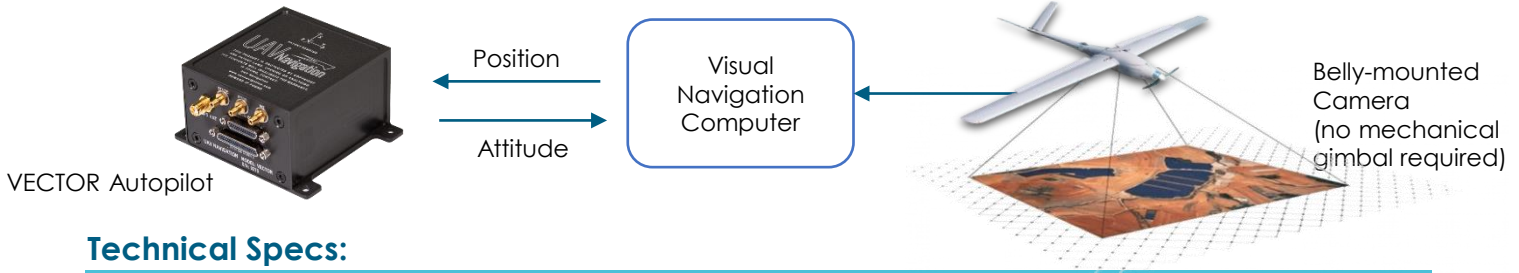
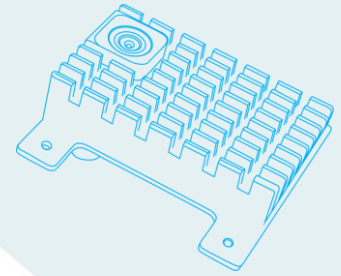


Functions:

The VNS is a compact and lightweight unit which enables safe and efficient navigation of Uncrewed Aerial Systems (UAS) in GNSS-denied environments. The VNS fuses 'visual odometry' and 'pattern recognition' techniques with other onboard sensors to determine accurately the absolute position, orientation and relative movement of the platform over the ground.

Operations where all or part of a mission must be carried out without access to GNSS data are becoming more commonplace. UAV Navigation's Flight Control Solutions are tolerant to GNSS failures and can operate in Dead-Reckoning without compromising flight safety. However, a prolonged unavailability of GNSS data can lead to significant navigational drift; this is where the VNS can provide a vital advantage.

The new VNS, combined with the VECTOR Flight Control System (FCS), efficiently and autonomously resolves the navigational drift problem. The unit's onboard computer processes images captured by the built-in camera, identifying patterns and movement over the terrain below. This allows the FCS to cancel any absolute error and to operate for long periods of time without losing positional accuracy. Thanks to its small size and weight, it can also be installed in small and medium UAS, enabling them to take advantage of this revolutionary new system without compromising autonomy or payload capacity.



Technical Specs:

TYPICAL DEAD-RECKONING DRIFT FIGURES

Standard AHRS-INS (3rd party)	100 m/min
UAV Navigation POLAR AD-AHRS	< 35 m/min
Visual Navigation System	< 0 m/min (previously flown area) <10 m/min (unknown area)

TECHNICAL SPECIFICATION

Compatibility	All types of UAS
Weight	90 g
Size (mm, H x W x L)	22 x 46 x 77
Enclosure Material	Grade 6082 Aluminium Alloy
IP Rating	Designed to conform with IP66
Voltage Supply	9 to 36 V DC
Power Consumption	5W @12VDC

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