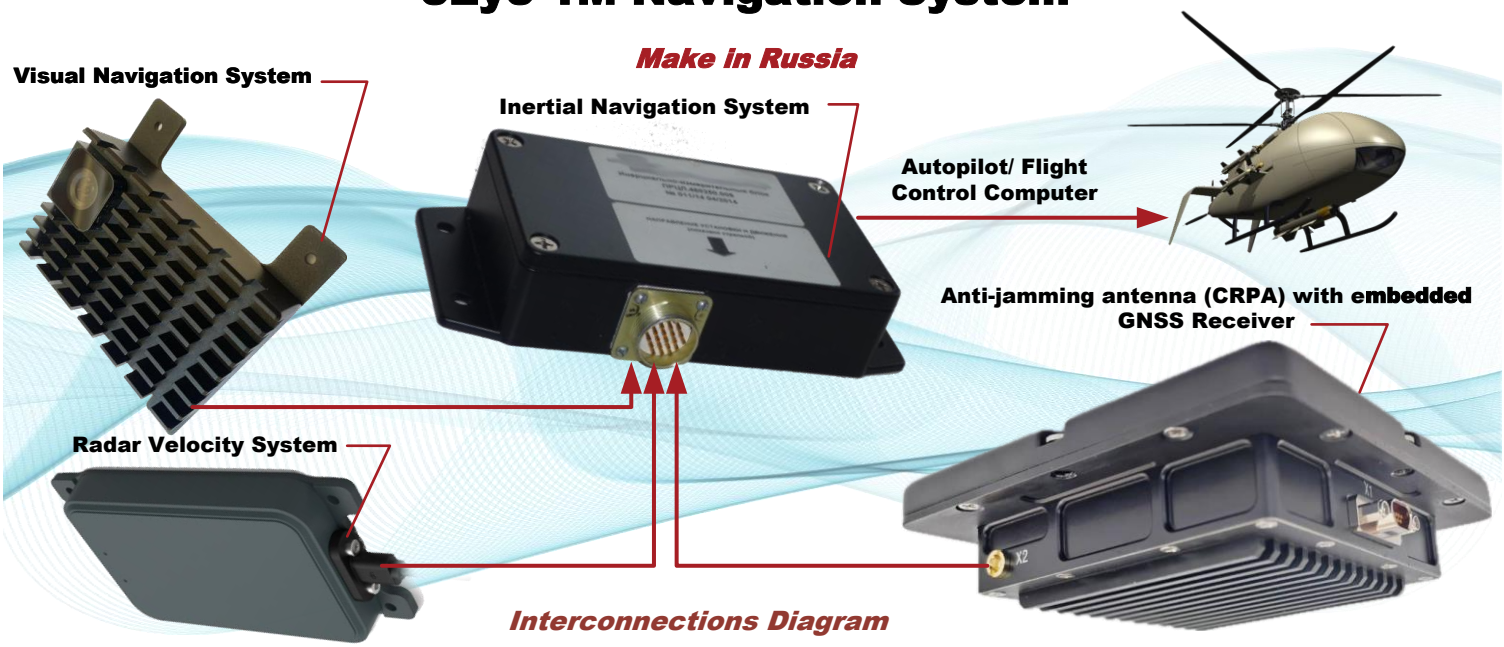
RIMCO JSC

# eEye-1M Navigation System


## *Anti-Jamming & Anti-Spoofing Navigation System*

# eEye-1M Navigation System

***Make in Russia***




***Interconnections Diagram***

**At RIMCO JSC eEye-1M, we have a deep expertise in providing position, velocity, and timing (PVT) for military UAV's mobility.**
**We leveraged that experience to design our eEye-1M navigation system to specifically meet the fastmoving, demanding environments of UAV's operations.**
**Employing our next-generation PVT technology, RIMCO JSC eEye-1M offers an integrated navigational solution based on our modernized GNSS product lines and variety of optional sensors (INS, VNS and RVS).**
**Additional protection comes with the anti-jam antenna or controlled reception pattern antennas (CRPA), providing superior immunity in the most severe GNSS-challenged envieronments.**
**The Visual Navigation System (VNS) provides accurate navigational information, ensuring mission success in situations where GNSS signals may be unavailable, unreliable, or compromised.**
**The VNS features an onboard camera that captures images throughout the flight, enabling the creation of an internal map for use when GNSS is unavailable. This map aids in correcting accumulated navigational drift during dead reckoning. Utilising a combination of visual odometry (VO) and pattern recognition (PR) techniques, the VNS integrates with the other onboard sensors to provide the Flight Control Computer (FCC) with precise positioning data in the absence of GNSS signals.**
**The unit's onboard computer processes images captured by the integrated camera, identifying patterns (using pattern recognition techniques) and movement (via visual odometry techniques) across the terrain below. This allows the FCC to correct any absolute errors and maintain positional accuracy for extended periods of time.**

## KEY FEATURES & BENEFITS

- **Make in Russia**
- **Anti-jamming antenna (CRPA) with embedded GNSS Receiver**
- **INS with Rugged Alliminium Construction Case**
- **INS integrated with Pixhawk autopilot**
- **Delivers exceptional anti-jamming**
- **Incorporates 4,8 or 16-element CRPA**
- **Units employ rugged design which offers high reliability (high MTBF) and low Life-Cycle-Cost.**
- **Performance (Actual performance for specific threat environments varies and is classified. Contact us for more information)**

**The Radar Velocity System (RVS) millimeter wave radar has the advantages of all-weather, high stability. The self-checking function of software and hardware integrated in RVS can effectively help customers confirm the correctness of data, further improve security and meet the application of various complex environments.**
**RIMCO JSC is introducing an inertial navigation system (INS) that communicates position, orientation and velocity of an object — such as an unmanned aerial vehicle (UAV) — even when global navigation satellite signals are unavailable.**
**This approach simplifies design, manufacture, logistics, accounting and long-term support. It provides the user with a solution to all platform needs through one device, fitted with selected sensors, which can be upgraded throughout the life of the vehicle.**
**Over the years, RIMCO JSC has gained vast experience in integrating immune navigation and anti-jamming solutions into various platforms. Our stringent procedures and MIL-STD compliance enable high overall quality and reliability.**

## *Specifications*

**Anti-jamming antenna (CRPA) with GNSS Receiver**
- **NavIC: L5**
- **GLONASS: L1CA, L2CA, L2P, L3 CDMA**
- **Galileo: E1, E5a, E5b, E5 AltBoc, E6**
- **GPS: L1C/A, L1PY, L2C, L2P(Y), L5**
- **Beidou: B1I, B1C, B2a, B2I, B2b, B3I**
- **QZSS: L1C/A, L1C/B, L2C, L5**

**CRPA Anti-jamming: J/S 115 dB with INS**
**CRPA protection from 3,7 or 16 jamming signal**
**CRPA Size: 100 x 100 x 30 mm (for 4 -element CRPA)**
**CRPA Weight: 400 g**
**INS Error in distance travelled 1-2%**
**INS Interfaces: RS-232/RS-422/USB/CAN**
**INS Size: 146 x 66 x 30 mm**
**INS Weight: 329 g**
**Autopilot with VNS at Unknown Terrain: 1% of distance traveled**
**VNS Size (H x W x L): 22x46x77 mm**
**VNS Weight: 100 g**
**Radar Velocity System (RVS) Size : 15 x 70 x 130 mm**
**RVS Weight: 66 g**
**RVS Altitude: 1000 m at speed 20 m/s**
**Operating temperature: - 40° C to + 71° C**
**Storage temperature: - 55° C to + 85° C**