

RESILIENT NAVIGATION FOR GNSS DENIED ENVIRONMENTS



Honeywell

NAVIGATING WITH CONFIDENCE: THE HONEYWELL AEROSPACE PEDIGREE

For over half a century, Honeywell Aerospace has been at the forefront of resilient navigation—engineering solutions that empower aircraft, spacecraft, and surface vehicles to operate safely and accurately, even in the most challenging environments. From pioneering inertial navigation systems to developing advanced anti-jamming technologies, our commitment to precision and reliability has shaped the way the world moves.

Our portfolio spans a vast array of navigation and sensing technologies, including inertial measurement units, inertial reference systems, ground-based augmentation, and alternative navigation suites. These systems are designed to deliver multi-layered redundancy, ensuring uninterrupted performance in GNSS-denied or contested environments.

Whether supporting commercial aviation, defense operations, or autonomous platforms, Honeywell's solutions are tailored to meet diverse mission profiles, vehicle types, and operational needs. Our global team of engineers and technologists continue to push the boundaries of innovation—building on a legacy of trust, performance, and technological excellence.



HGINERTIAL

OVERVIEW

Honeywell's HG Inertial range of high-dynamic IMUs delivers a powerful combination of precision, ruggedness, and compact design. These IMUs leverage advanced MEMS (microelectromechanical systems) and RLG (ring laser gyroscope) technology to provide exceptional accuracy in measuring angular rate and linear acceleration, even under extreme vibration and shock.

The HG Inertial series ensures reliable, real-time navigation and control, maintaining performance in environments where other systems might fail.

KEY FEATURES

- Proven with over a million IMUs fielded
- High dynamics and robust inertial performance
- Design for long life with no maintenance
- Leverages Honeywell RLG and MEMS designs
- Includes Honeywell world class calibration techniques

USE CASES

- Missiles
- Munitions
- Camera stabilisation
- Unmanned systems



TALIN

OVERVIEW

Honeywell's TALIN navigation products offer unparalleled navigation and pointing capabilities for demanding land applications. By seamlessly integrating advanced inertial and GNSS technologies, these rugged navigators provide precise position, heading, and attitude information, ensuring mission success for ground vehicles, artillery in any environment.

KEY FEATURES

- Proven performance. More than 20,000 fielded units
- Continued operation under the most demanding shock/vibration environments
- Wide range of performance points for continuous position and pointing requirements

USE CASES

- Artillery, Howitzers, tanks
- Heavy vehicle navigation
- Mining vehicles



HGUIDE NAVIGATION

OVERVIEW

Honeywell's HGuide series of non-license navigation systems and IMUs provide highly accurate, cost-effective solutions for a wide array of industrial and defence applications.

Built on advanced MEMS technology, these compact and rugged products offer reliable guidance, control, and pointing capabilities even in demanding environments and where GPS/GNSS signals are degraded or unavailable.

KEY FEATURES

- No license required IMUs and navigators
- Designed for long life with no maintenance
- Includes Honeywell world class calibration techniques
- Uses Honeywell integrated navigation capability
- Wide range of navigation aiding capabilities including Honeywell Alternative Navigation

USE CASES

- Unmanned systems for air, land and sea.
- Sensor stabilization
- 3D mapping
- GNSS denied navigation



OVERVIEW

Civitanavi Systems is the European design and manufacturing arm of Honeywell's world leading Inertial Navigation division.

Civitanavi is a vertically integrated inertial system supplier, with in-house manufacturing of its proprietary Fiber Optic Gyroscope (FOG) technology, as well as developing advanced GNSS receiver technology and sensor fusion algorithms, including those for MEMS-based systems.

KEY FEATURES

- ITAR free, made in EU
- High bandwidth
- Rugged and dependable
- Wide range of performance
- Navigation and AHRS capability

USE CASES

- Aviation
- Unmanned Systems
- Platform Stabilization
- Drilling and Mining
- Naval and Marine



ALTERNATIVE NAVIGATION

OVERVIEW

Honeywell's Alternative Navigation suite ensures resilient, secure navigation when GPS/GNSS signals are denied, jammed, or spoofed. Its layered approach includes Vision-Aided, Celestial, and Magnetic Anomaly-Aided Navigation for robust performance in contested environments.

For small UAVs, the Resilient UAV Navigation system integrates low-SWaP technologies—HCINS, HRVS, and the Sunstone Anti-Jamming System—to deliver reliable, autonomous flight beyond visual line of sight, even under degraded or denied conditions.

KEY FEATURES

- Multiple sensor modalities for multiple use cases
- Common software architecture
- Compatible with Honeywell inertial navigators

USE CASES

- GNSS Denied Navigation
- Unmanned Systems
- Aviation
- Missiles & Munitions



EMBEDDED GPS/INS

OVERVIEW

Honeywell's Embedded GPS and Inertial Navigation Systems (EGI) family of military aircraft systems are self-contained, all-attitude, tightly-coupled navigation systems providing cutting edge navigation for the most challenging military requirements along with civil interoperability capabilities.

KEY FEATURES

- >70,000 EGIs fielded on over 250 military platforms world-wide
- Robust DO-178 & Do-254 certification
- Available with M-Code & SPS
- Integrated with leading beam forming Anti-Jam antennas

USE CASES

- Fighters
- Trainers
- Rotary Wing
- Large Fixed Wing
- UAV
- Non-Aircraft
- GNSS Denied
- GPS Spoofed



LASEREF VI INERTIAL REFERENCE SYSTEM

OVERVIEW

Our new software release planned for September 2026 provides GNSS spoofing resilience and alerts crews in case of interference. Both pure inertial and hybrid GPS/INS solutions are protected on-ground and in-air, providing a resilient navigation solution in GNSS challenged environments.

KEY FEATURES

- Dependable. 20,000 fielded units, 200 million flight hours on more than 40 platforms
- Low size, weight and power
- 100% Availability of RNPO.1 with HIGH
- Resilient navigation solution in GNSS challenged environments (GNSS spoofing)
- Predictive maintenance

USE CASES

- Commercial Aircraft
- Helicopters
- eVTOL
- Military Multi-role



WHY HONEYWELL?

With decades of innovation in aerospace systems and a commitment to securing the edge of performance, Honeywell delivers integrated technologies that ensure resilience, efficiency, and superiority across all operational domains.

ABOUT US

Honeywell Aerospace is a global leader in high-performance inertial measurement units (IMUs), delivering precise navigation, stabilization, and control across a wide range of applications. Our extensive portfolio of inertial sensors and navigators serves diverse sectors within the aerospace, defense, and industrial markets. Whether MEMS, FOG, or RLG-based, Honeywell IMUs offer exceptional accuracy and reliability—even in the most demanding environments. Our globally recognized IMU manufacturing capabilities are backed by ISO 9001:2015 and AS9100D certifications, with over 1 million tactical-grade IMUs delivered to date.

VISIT OUR WEBSITE



For more information

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FUTURE
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