ALTERNATIVE NAVIGATION
NO GNSS? NO PROBLEM

HONEYWELL ALTERNATIVE NAVIGATION SOLUTIONS DELIVER RESILIENCE ON DEMAND

Military aircraft rely on Global Navigation Satellite System (GNSS) signals to fine-tune their mission-critical inertial navigation system (INS). Alternative Navigation Systems from Honeywell fill the gap when hostile nations or non-state actors jam or spoof the GNSS.

Honeywell Alternative Navigation Systems are ideal for military crewed and uncrewed aircraft, which must be ready to fly – and navigate – on a moment's notice. They make INS more resilient by providing precise information on the aircraft's position, velocity and orientation when GNSS signals are unavailable.

ALTERNATIVE NAV SYSTEMS IMPROVE RESILIENCE

Honeywell pioneered inertial navigation technology, and our five-decade legacy of INS innovation continues with exciting advances in Alternative Navigation. Our latest advancement is software that lets the INS use data from one or more Alternative Navigation systems to overcome jamming and spoofing attempts.

Honewell Alternative Navigation Architecture software can run on the operator's current computing platform or one that Honeywell provides. Alternative navigation modalities perform a similar function as GNSS inputs to increase navigation resilience. The software lets operators choose the right combination of modalities to achieve the mission at hand.

> "Zurich University of Applied Sciences reports more than 700 jamming and spoofing incidents per day in 2024, forcing countless pilots and unmanned aerial vehicles to fly without access to GNSS data."

[1]GPS NEEDS TO TOUGHEN UP, OR GET TRAMPPLED DOWN – AVIATION WEEK NETWORK

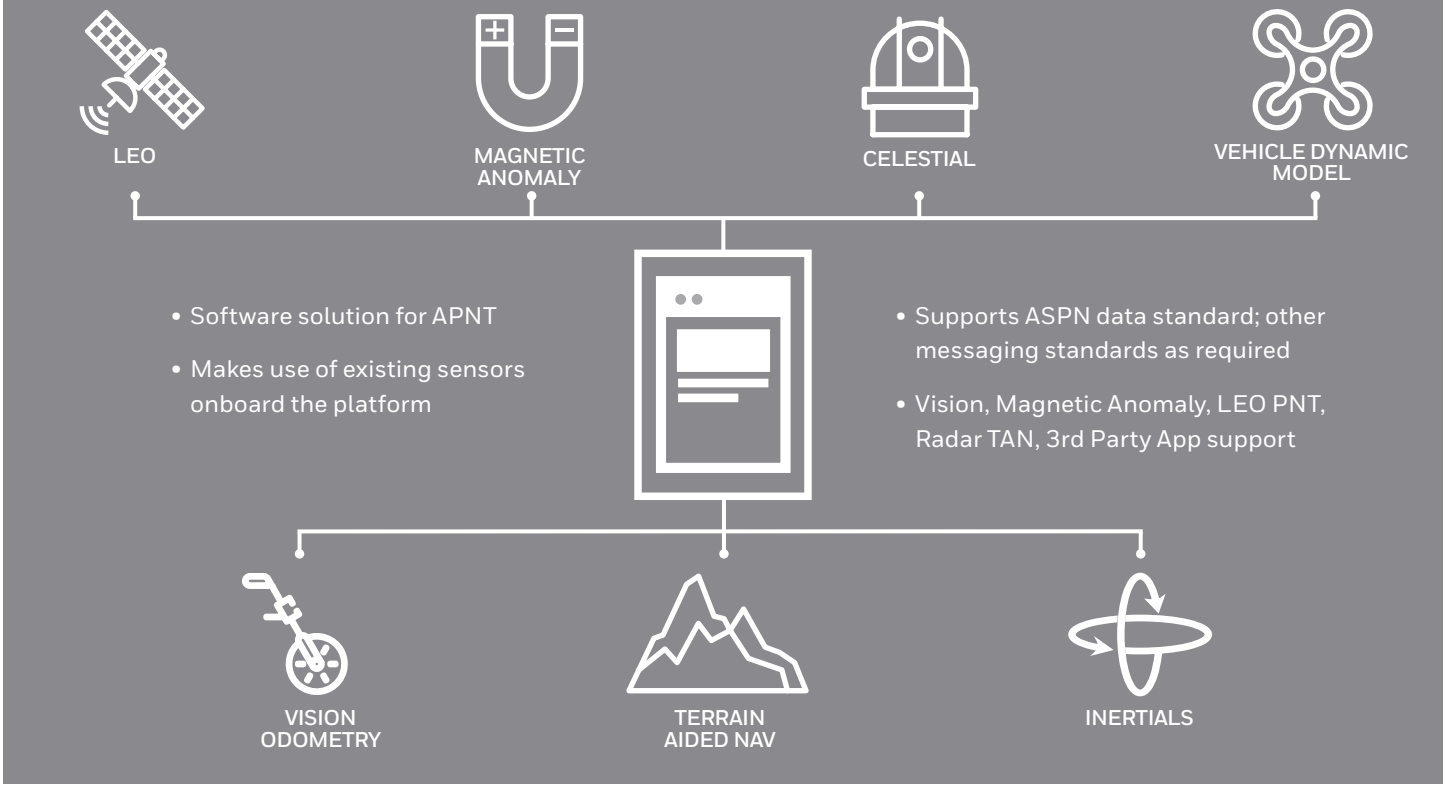
Honeywell

A LAYERED ARCHITECTURE IS THE BEST APPROACH

No single Alternative Navigation System can replace GNSS because each system has unique advantages and limitations. Honeywell is advancing a layered architecture that integrates these systems, enabling users to mix and match alternative systems to meet specific operational requirements.

Honeywell pioneered INS navigation technology for aircraft, spacecraft and other platforms. We continue to challenge industry boundaries with innovations that make inertial systems and sensors smaller, lighter, more accurate and more reliable than ever.

HONEYWELL ALTERNATIVE NAVIGATION ARCHITECTURE



PRIMARY SYSTEMS IN HONEYWELL'S ALTERNATIVE NAVIGATION ARCHITECTURE INCLUDE:

- Vision-aided navigation—Vision-aided navigation systems use a live camera feed to compare visible images on the ground with a map database. They work well in GNSS-denied environments and are resistant to jamming and spoofing. Since they need to "see" recognizable landmarks, their effectiveness is limited when visibility is reduced due to clouds or other obstacles. (Available now)
- Magnetic anomaly-aided navigation – Magnetic anomaly-aided navigation uses onboard equipment to detect and recognize known variations in the Earth's magnetic field to determine location. It also works well in GNSS-denied conditions and is immune to jamming and spoofing. Unaffected by weather conditions, its effectiveness diminishes at higher altitudes where magnetic forces are weaker. (Available 2026)
- Low Earth orbit (LEO) satellite navigation – LEO satellite navigation uses signals from satellites orbiting closer to Earth than GNSS satellites. These satellites provide stronger, more resilient signals that are less susceptible to interference, including jamming and spoofing. Currently available LEO signals offer worldwide coverage but benefit significantly from integration with Honeywell inertial sensors. (*Available 2026*)

For More Information

For more information, visit us online here

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THE FUTURE IS WHAT WE MAKE IT

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