

Patria WISPR

Passive counter-battery radar - The silent force multiplier for projectile detection



PROTECTED MOBILITY



SUSTAINMENT SOLUTIONS



DEFENCE AND WEAPON SYSTEMS



EXTREME SURVIVABILITY

Finland is known for high technology and extreme resilience. Our harsh nature and limited resources have pushed us to learn and innovate efficiently. Thorough preparation for the future is the backbone of our culture.

Patria is a modern and international defence and technology company with over 100 years of experience. We use resources wisely, create innovative solutions and build intelligent systems that provide extreme survivability in any conditions. We work with our customers throughout the entire lifecycle to ensure maximum value. Honest and straightforward co-operation is at the core of our work.

We build exceptional partnerships that last through critical operations. That's what it takes when you stand for your sovereignty. Trust us, we've been there.

QUALITY AND SIMPLICITY

In a world brimming with fleeting trends and overengineered solutions, we stand apart by offering tools built with a singular focus: unwavering reliability and uncompromising quality.

We believe in the power of simplicity. Our products are well-designed, robustly constructed, and thoroughly tested to perform their intended task flawlessly, every single time.

Our philosophy is simple: true innovation should help, not complicate. Driven by dedicated research, we develop advanced technologies for real results. Our straightforward approach makes the difference. Engineered for a single purpose - Yours.

Patria - Extreme conditions embedded.

Patria WISPR, Weapon Indication and Sensing Passive Radar, represents a new era of counter-battery operation when silence and availability are paramount – a completely passive counter-battery radar enabling continuous survivability in battlefield even close to enemy. By utilizing Passive Coherent Location (PCL) technology, it has no transmitters that would reveal its presence and location, hence it senses quietly providing continuous projectile detection and weapon locating capabilities.

Why passive radar?

Conventional counter-battery radars provide critical capabilities, but their emissions make them detectable, targetable, and vulnerable to enemy ESM, geolocation, and precision strikes. In today's battlefield, the timespan from the first detection to strike is short, causing active radars imminent and concrete threat, making continuous surveillance very demanding and costly due to need for several coordinately operated radars. Achieving continuous and precise weapon locating capability requires mixed-use of different sensor types. Here, the importance of passive radar is crucial.

Patria WISPR provides comprehensive capabilities:

- **Silent operation** being invisible to adversary's intelligence
- **Rapid deployment** possible even near the hostile environment
- **Mast solution** enabling concealment of the system platform inside forest canopy
- **Excellent projectile** detection performance especially at low altitudes, enabled by multistatic operation
- **All-weather capable** designed for demanding environmental conditions
- **Cost efficient** in terms of operation and lifecycle

Passive Coherent Location (PCL) technology is used to detect, locate and track projectiles and other aerial targets. Patria WISPR system exploits DVB-T/ T2 television broadcast signals as illuminators, providing more than 100° sector surveillance coverage with high update rate. The system can be used both in a standalone mode containing only a single station operated locally or remotely, and also in a networked mode where constellation of several Patria WISPR stations are operated and managed remotely. In both cases, after setting up the system, it provides weapon location information without any operator attendance.

Use cases

In **weapon locating** use case, Patria WISPR detects and tracks artillery, mortar and rocket projectile trajectories, and reports estimated point of origin accurate enough for starting quick counter-fire.

When using Patria WISPR together with active counter-battery radar, it can be used as a silent **cueing sensor**. Here, survivability and expected lifetime of the active radar are increased if it is activated with the passive cueing only when needed and for the shortest possible exposure.

Patria WISPR is a multi-purpose radar system. Even though it is primarily designed for projectile detection and weapon locating, it can also be used for **air surveillance** enabling detection and tracking of aerial targets including difficult-to-detect types of threats such as UAVs.



Technical specification

| | |
|---------------------------|---|
| Signal compatibility | DVB-T/T2 |
| Azimuth coverage | > 100° |
| Processing capability | up to 500 simultaneous projectiles |
| Detection range | Typical examples: > 20 km for artillery shells and mortar bombs > 30 km rockets |
| Update rate | > 3 updates per second |
| Projectile classification | Distinguish between artillery, mortar and rockets |

System highlights

- Multiple platform and deployment options (e.g. trailer or container) tailored to Customer needs
- Environmental tolerance and high availability in extreme conditions
- Minimal operator attendance required during operation
- Flexible and easily tailorable interfaces for integration to Customer's command and control systems

Patria WISPR – Ready for your mission

Patria WISPR is designed for the needs of current and future battlefield. Robust construction and all-weather resistant equipment are designed to be durable and operate reliably in Arctic conditions as well as in hot temperatures. Patria WISPR empowers artillery units with the next generation passive weapon locating capability – increasing survivability and keeping own troops protected and always one step ahead on the battlefield. Success and survivability in modern artillery operations start with silence!



Patria

When if is not an option.

www.patriagroup.com