



Shield East: NATO's Digital Shield Against Drones

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While land borders are once again protected by trenches and anti-tank ditches, the true battlefield of the 21st century is played out a few meters above the ground. Poland's **Shield East** plan is not just a physical fortification project, but represents NATO's most advanced technological response to the threat of Russian and Belarusian drones.

A Multi-Level Architecture: Beyond Simple Radar

The limitation of traditional radars is the difficulty in detecting small, slow, low-flying objects, often confused with environmental "noise" (like flocks of birds). To overcome this, Warsaw has developed a **multi-level** approach:

1. The Return of Listening: Acoustic Sensors

At the **Ustka** range, Poland is testing networks of highly precise microphones. These systems do not "see" the drone, but they "hear" it.

- **AI Identification:** Advanced algorithms analyze the sound signature of the propellers to distinguish between a commercial drone, a suicide drone (like *Shahed*), and environmental noises.
- **Advantage:** They work in any weather condition and do not emit signals, making them invisible to enemy detection systems (passive defense).

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2. Electronic Warfare (EW): The Invisible "Wall"

Once detected, the drone must be neutralized. The Polish goal is to do so without firing a single shot (soft-kill):

- **Selective Jamming:** Eight different electronic jamming systems are being tested to disrupt the GPS signal or the radio link between the pilot and the aircraft.
- **Spoofing:** Techniques to "trick" the drone into believing it is in a different location or forcing an emergency landing.

The Project Numbers (2025-2026)

Here are the data related to the development of the **Shield East** program, reworked in textual format:

The massive industrial and strategic effort of the Polish plan is clearly reflected in its key numbers. The program has already analyzed over **700 technological proposals**, born from collaboration between universities, research centers, and international companies. Of these, **36 technologies** have been selected for the crucial phase of operational field testing.

From an economic standpoint, the project foresees a massive investment of about **2.5 billion dollars** by 2028, covering the entire infrastructure. As for immediate milestones, the goal set for **2026** is the complete integration of detection systems and sensors with NATO's central command structure, making the defense of the eastern flank a cohesive and automated system.

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Why Poland is NATO's Laboratory

The lessons learned from the conflict in Ukraine have shown that saturating the airspace with cheap drones can paralyze a modern army. Poland, sharing hundreds of kilometers of border with the Kaliningrad exclave and Belarus, has become the ideal testing ground for the **Anti-UAV** doctrine.

"Shield East is not just about Poland; it is the prototype of how the entire Atlantic Alliance will protect its borders in the next decade," comment analysts from Defence Blog.

The Challenge of Artificial Intelligence

The beating heart of the system is the **reduction of reaction time**. Thanks to the integration of optical, acoustic, and electronic sensors into a single AI-managed platform, the Shield East system aims to reduce the time between detection and neutralization to a few seconds, eliminating human error and managing "swarm" attacks (*swarms*) that would saturate traditional defenses.

By the end of the year, Poland plans to extend the Ustka tests to large-scale exercises involving other NATO partners (such as the Baltic States). The goal is to create a **continuous line of defense** from the Baltic Sea to the Carpathians, making NATO's eastern flank impenetrable to unauthorized air incursions.

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