



CASE STUDY

# Ukrainian Weapon Systems Upgrade with Advent Atum & HORUS Fire-Control Solution

Advent Atum

19 January 2026



*Astute Systems in Kiev (Ukraine) April 2025*



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## Overview

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Astute Systems has been a long-standing collaborator with Advent Atum, a defence-technology company specialising in AI-enabled fire-control, embedded computing, and autonomous targeting solutions for land platforms. Advent Atum's flagship product—the HORUS fire-control computer, powered by the ruggedised GXA-1 processing module—has been adopted by several international partners seeking rapid, modern upgrades to legacy weapon systems.

In early 2025, Advent Atum invited Astute Systems to support a critical integration effort in Ukraine. The mission: help install, configure, and validate the HORUS system on Ukrainian platforms operating near the front lines.

### Background on Advent Atum

Advent Atum has built a reputation for delivering compact, AI-driven fire-control systems that dramatically improve accuracy, lethality, and operator survivability. Their HORUS system combines:

- AI-assisted target recognition
- Ballistic computation
- Sensor fusion across day/night cameras and laser rangefinders
- Real-time decision support for gunners and commanders

The GXA-1 module at the heart of HORUS is engineered for extreme environments, including shock, vibration, electromagnetic stress, and temperature extremes—conditions common in modern conflict zones.

Astute Systems' long partnership with Advent Atum is built on shared engineering values, complementary expertise, and a history of delivering high-performance embedded solutions for defence customers.

### The Mission in Ukraine

In March 2025, Advent Atum requested Astute Systems' direct support in Ukraine to accelerate the deployment of HORUS onto Ukrainian weapon platforms. A small team of Astute Systems engineers travelled to the country and spent over 40 days working south of Kharkiv, close to active combat operations.

- The scope of work included:
- Fabrication and installation of mounting hardware and wiring looms
- Integration of day/night camera systems
- Integration of laser rangefinders
- Implementation of safety interlocks and firing safeguards
- Full installation and configuration of the HORUS fire-control system
- Participation in live-fire trials with Ukrainian Defence Forces

Despite the proximity to the front, the team maintained a disciplined engineering approach, working methodically under pressure and adapting to rapidly changing field conditions.

## Extreme Conditions, Proven Performance

The GXA-1 module is designed for harsh environments—but Ukraine pushed the system to its limits. As one engineer noted, “It did not get more extreme than the testing we did in Ukraine.”

Throughout the deployment:

- The system remained stable under shock, dust, vibration, and temperature extremes
- AI-assisted targeting performed reliably during live-fire exercises
- Sensor fusion remained consistent despite field-improvised mounting constraints
- The HORUS interface proved intuitive for Ukrainian operators, even under stress

Astute Systems’ CEO later reflected that the mission validated the robustness of the technology in a way no laboratory environment ever could.



*Integration and field testing*

## Working Under Fire

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The team’s time in Ukraine was marked by real danger. They experienced:

- Ballistic strikes in Kyiv during transit
- Glide-bomb attacks near the integration site
- Frequent air-raid alerts and operational disruptions

Despite these conditions, the team remained focused, coordinated, and committed to delivering a capability that would make a tangible difference to Ukrainian forces.

The engineers described the experience as a rare opportunity to apply their skills in a way that had immediate operational impact. Their professionalism ensured that the mission was completed safely, and the team returned home without injury.

## Outcome

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The integration and testing of the HORUS system were successfully completed and demonstrated to the Ukrainian Defence Forces. The project delivered:

- A fully integrated, AI-enabled fire-control upgrade
- Improved accuracy, speed, and operator confidence
- A validated deployment of the GXA-1 module in one of the harshest environments imaginable

Strengthened collaboration between Astute Systems and Advent Atum

The effort stands as a testament to the dedication of both companies and their shared commitment to supporting Ukraine's defence.

## Leadership Perspective

Astute Systems summarised the experience as both technically validating and personally meaningful:

*"GXA-1 is designed to meet and perform in extreme conditions, and it did not get more extreme than the testing we did in Ukraine. The team saw the opportunity to do something you don't get asked to do often—make a real difference in a real conflict zone." Ross Newman CEO Astute Systems*

The company also credited Advent Atum for their coordination, resilience, and unwavering support throughout the mission.

## A Partnership That Delivered When It Mattered

This project demonstrated what is possible when two engineering-driven defence companies combine expertise, agility, and purpose. The HORUS system is now contributing to Ukraine's defence capability, and the collaboration between Astute Systems and Advent Atum has never been stronger.



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