Developer of Autonomous and Energy-Efficient Artificial Intelligence Systems

Summary

Profile type
Business Offer

Company's country
Ukraine

POD reference
BOUA20250403006

Profile status
PUBLISHED

Type of partnership
Investment agreement
Commercial agreement
Outsourcing agreement
Supplier agreement

Targeted countries
• **World**

Contact Person
Enrico FRANZIN

Term of validity
3 Apr 2025
3 Apr 2026

Last update
3 Apr 2025

General Information

Short summary

The company, based in Kyiv, Ukraine, offers autonomous, energy-efficient artificial intelligence (AI) systems for defense and civilian use, including smart towers, AI sights, and anti-drone platforms. The company seeks partnerships, co-development agreements, and licensing opportunities with defense integrators and industrial technology providers.

Full description

Accessible, High-Performance Autonomous AI

Offers a breakthrough solution in the field of autonomous artificial intelligence (AI) by developing energy-efficient, cloud-independent systems that can be deployed in both military and civilian environments. Our core technology, the SHI-ISHKA neural network (Smart Hybrid Infrastructure – Intelligent Sensing, Heuristic Knowledge Architecture), is a proprietary, modular AI platform capable of real-time multimodal data processing — including video, thermal imaging, LiDAR, audio, and radio signals.

Key Innovation

Unlike conventional AI systems that rely on cloud infrastructure and high-end chips, SHI-ISHKA is designed to run on compact, commercially available hardware, consuming as little as 7 watts — making it up to 2x more energy-efficient than competing solutions. This drastically reduces deployment costs and allows integration into low-resource environments.

Performance Metrics

- 10x faster decision-making than human operators in combat or surveillance scenarios.
- 5–10x lower AI training costs due to our proprietary dataset creation and rapid annotation methodology (over 35 hours of tactical video and synthetic military data).
- Effective on edge devices starting from 5+ TOPS (tera operations per second) without compromising performance.
- Compatible with a wide range of systems: drones, robotic turrets, ground vehicles, firearms, surveillance systems, smart homes, biotech, and agriculture devices.

Product Ecosystem

UkrSmartTech delivers AI-powered hardware and software solutions, including:

- Smart Scope: an AI-augmented rifle scope with "friend-or-foe" detection and automatic targeting (80 ms reaction time).
- Smart Turret: automated gun mount capable of real-time threat recognition and auto-engagement.
- Black Box: universal control module that upgrades legacy turrets into autonomous systems.
- SkyHunter: compact anti-drone system with autonomous targeting.
- Smart Mines & StarCraft Pagers: intelligent battlefield coordination and threat detection tools.

All solutions are built on modular architecture, allowing easy updates, customization, and integration. Our system can be deployed in both standalone and networked configurations, enabling collaborative AI where units share threat data and tactical insights.

Technology Differentiation

SHI-ISHKA is not a repackaged third-party neural network (e.g., YOLO or OpenCV). It’s custom-built from scratch to ensure licensing freedom, military-grade adaptability, and global exportability. Through deep optimization (code pruning, hardware-level instructions, native C++/Rust), SHI-ISHKA achieves real-time performance even on cost-efficient chipsets.

Civilian Application Readiness

Beyond defense, our AI solutions are designed for:

- Smart cities (traffic monitoring, environmental sensing),
- Healthcare (vital sign analytics, early diagnosis),
- Agriculture (crop health via thermal imaging),
- Security and surveillance (real-time video analysis, threat recognition),
- Industrial control (defect detection, predictive maintenance).

Summary

UkrSmartTech’s innovation lies in creating AI that is not only powerful but practical, scalable, and accessible. SHI-ISHKA delivers next-gen autonomy without the need for expensive infrastructure — paving the way for intelligent systems that can function under real-world constraints, including energy limitations, unreliable internet, or battlefield disruption.

Advantages and innovations

We offer cutting-edge AI technology through its proprietary SHI-ISHKA neural network — a lightweight, energy-efficient, and real-time AI architecture optimized for deployment on affordable edge hardware.

Core Technical Advantages:

- Ultra-fast Video Recognition: 10–20 ms per frame, enabling rapid detection and response in dynamic environments.
- High-precision Recognition: Minimum object size of 10 pixels for reliable small-object detection.
- Real-time Data Throughput: Up to 60 FPS processing with full autonomy — no cloud dependency.
- Ultra-low Power Consumption: Consumes just up to 7 watts, doubling efficiency compared to typical solutions.
- Lightweight Form Factor: Complete system weighs only 80g, ideal for mobile, aerial, and embedded applications.

Innovation in Neural Network Architecture:

- Custom-designed AI models tailored to specific defense and industrial tasks, rather than using third-party neural networks.
- Advanced optimization techniques including distillation, pruning, and the addition of expert layers — improving speed, accuracy, and hardware compatibility.
- Real-time streaming pipelines for seamless deployment in surveillance, targeting, and decision-making systems.

- Hardware efficiency breakthroughs:
  - CPU load reduced from 82% to 10%
  - NPU load cut from 90% to 42%
  - System temperature dropped from 81°C to 62°C, reducing the need for heavy-duty cooling.
  - Power consumption reduced from 15W to 8.2W
  - Minimum viable hardware reduced from 40 TOPS to 5+ TOPS, expanding deployability across more platforms

SHI-ISHKA = Performance + Portability

The result is a system that runs on widely available chipsets while delivering performance comparable to high-end military AI — but at a fraction of the cost, power, and integration complexity. SHI-ISHKA unlocks AI capabilities for sectors previously limited by energy or hardware constraints.

This makes UkrSmartTech a leader in accessible, real-time autonomous intelligence.

Technical specification or expertise sought

Stage of development

Already on the market

Sustainable Development goals

- **Goal 9: Industry, Innovation and Infrastructure**

IPR Status

No IPR applied

IPR Notes

Partner Sought

Expected role of the partner

Is seeking strategic partnerships with the following types of organizations:

- Industrial partners (including defense and dual-use technology manufacturers, robotics and smart systems producers) for the integration of our AI technologies into existing and new hardware platforms, co-development of intelligent products, and scaling across European production facilities.

- Research and innovation institutions interested in joint R&D activities focused on real-time AI applications, edge computing, tactical autonomy, and smart sensing systems.

- Business and investment entities, including venture funds, innovation hubs, and grant consortia, to support the scaling and internationalization of our SHI-ISHKA platform through equity, co-financing, and European funding instruments.

We expect our partners to:

- Facilitate the integration of SHI-ISHKA AI modules into their products or platforms.

- Collaborate on joint development and testing of smart, autonomous systems (e.g., turrets, drones, security and surveillance systems).

- Engage in co-application for EU grants, especially in the areas of defense tech, AI, Industry 4.0, and cross-border innovation.

- Support market entry and localization across EU countries through manufacturing, certification, and distribution cooperation.

Our ideal partner shares a vision of scalable, affordable, real-time autonomous intelligence, and is open to joint ventures, licensing models, or co-innovation agreements within the European ecosystem.

We open to multiple partnership formats, including technology licensing, product integration, joint development, and scaled manufacturing with trusted partners across Europe.

Type of partnership

Type and size of the partner

Investment agreement

Commercial agreement

Outsourcing agreement

Supplier agreement

- **SME <=10**
- **Big company**
- **SME 50 - 249**
- **Other**
- **R&D Institution**
- **SME 11-49**

Dissemination

Technology keywords

- **01003003 - Artificial Intelligence (AI)**

Market keywords

- **08002004 - Robotics**
- **08002005 - Machine vision software and systems**

Targeted countries

- **World**

Sector groups involved

- **Digital**

Media

PDF documents

Executive summary UkrSmartTech (5).pdf

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Videos

Smart scope explainer