Production-Ready Robotics and Physical AI Systems

AI Center & Robotics Hub

ASSIST Software bridges the 'Sim-to-Real' gap, deploying **intelligent Physical AI** through high-fidelity digital twins and edge orchestration. We turn standard robotic hardware into **production-ready autonomous systems**.

ASSIST
Innovative Minds

What We Do

We bridge the gap between experimental robotics and **reliable, operational systems**. By leveraging **high-fidelity Digital Twins** and **Synthetic Data training**, we ensure intelligent machines perform safely, predictably, and efficiently in **real-world production environments** at the Edge.

Our engineering connects:

Digital twins and simulation

We create high-fidelity virtual replicas to validate hardware performance and logic before physical deployment. This approach reduces implementation costs and timeline risks by stress-testing complex scenarios in a risk-free sandbox.

Physical AI and computer vision

Our systems fuse visual perception with autonomous reasoning to enable intelligent, real-time machine control. We deliver automated solutions for precise quality inspection and safe, adaptive human-robot collaboration.

Our engineering connects:

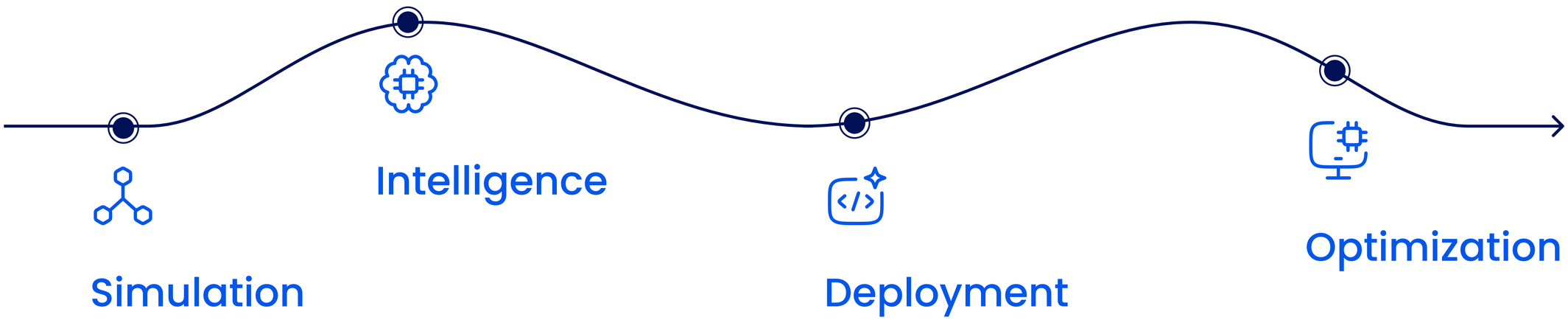
Edge and cloud deployment

We optimize intelligence to run directly on physical equipment, ensuring immediate response times for mission-critical tasks. This provides the tactical independence needed for systems to remain operational in restricted or cloud-denied environment.

Continuous validation in operation

We bridge the gap between research and reality by integrating live performance tracking and hardware feedback loops. This ensures every system remains reliable, predictable, and mission-ready throughout its operational life cycle.

The System We Build



Our engineering process links **virtual development** with **real-world performance**. Systems are first explored and refined in simulation, where ideas can be tested safely and efficiently. AI models are then integrated and deployed on operational hardware, while real-world data **continuously improves performance** over time.

How We Work

Simulation-First, Performance-Driven

We validate behavior, perception, and control logic in simulation before deploying to physical systems.

Continuous Validation

Closing the Reality Gap through:

Physics-Centric Virtual Prototyping

Mission-Ready Hardware-in-the-Loop (HIL) Validation

Accelerated Intelligence through Synthetic Data

Core Capabilities

Digital Twin Architect

- **High-fidelity virtual replication** of custom hardware and complex operational environments.
- **Hardware-in-the-loop (HIL)** and software-in-the-loop (SIL) validation to bridge the gap between simulation and real-world performance.
- **Advanced synthetic data generation** to accelerate the training and deployment of Physical AI models

Physical AI Orchestration

- **End-to-end orchestration** including model selection, optimization, and training for autonomous machine reasoning.
- **Development of behavioral policies** for high-complexity tasks such as collaborative manipulation and tactical navigation.
- **Continuous validation** through integrated feedback loops between virtual simulation and live operational systems.

Core Capabilities

Vision-Based Intelligence

- **Real-time perception pipelines** designed for high-precision automated inspection and object recognition.
- **Robust recognition** performance under challenging industrial conditions and variable lighting environments.
- **Intelligent sensor fusion** for comprehensive environmental awareness

Edge AI & Hardware Integration

- **Edge-optimized inference** to ensure low-latency, real-time performance in restricted or cloud-denied environments.
- **Hardware-agnostic integration** with standard industrial or custom equipment via modern communication protocols.
- **Centralized monitoring** and control through a unified dashboard for live hardware telemetry and fleet management

Immersive Training & Simulation

"Bridging the Gap Between Learning and Operational Reality"

We engineer high-fidelity, custom simulation applications designed to accelerate skill acquisition and eliminate physical risks across high-stakes industries.

Core Capabilities

1. Custom XR & PC Development

Tailored immersive experiences for VR, AR, and desktop platforms using both **Unreal Engine** and **Unity**.

2. Physics-Accurate Environments

High-fidelity virtual replicas designed for 1:1 realism and deterministic behavior.

3. Advanced Digital Twins

Mirroring real-world hardware and processes to ensure training logic translates directly to the field.

Industry Applications

Medical & Healthcare

Precision-focused surgical simulations and procedural training in risk-free virtual sandboxes.

Industry 5.0

Complex machine operation, collaborative robotics training, and factory-floor safety drills.

Logistics & Maintenance

Training for mobile fleet management, including UGVs and Aerial Drones, and predictive maintenance workflows.

BUILT FOR OPERATIONS

Our systems are engineered for:

Real-Time Precision
Immediate, deterministic execution for objective-critical machine control.

Operational Longevity
High-reliability architectures designed for maximum system uptime.

Environmental Resilience
Consistent, robust performance across dynamic factory environments.

Use Cases

Predictive Maintenance

Real-time monitoring and proactive fault detection for robotic and automated systems.

Automated Quality Inspection

Vision-driven control for zero-defect manufacturing

Collaborative Robotics

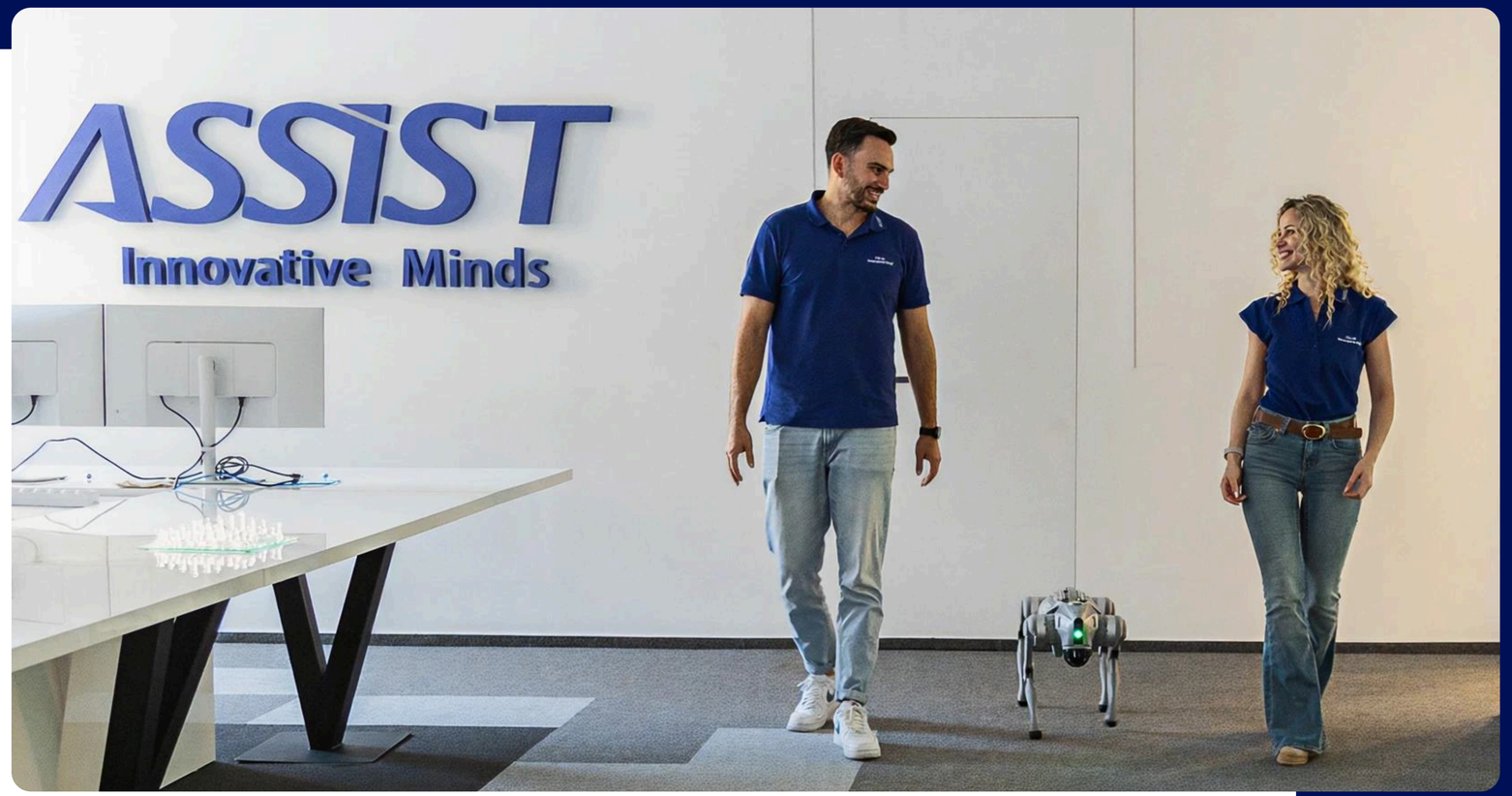
Safe, intelligent human-robot synergy for Industry 5.0.

AI CENTER & ROBOTICS HUB

Our infrastructure accelerates the transition from research to production-grade delivery:

- **NVIDIA-powered AI servers (A100 class)** for high-performance processing.
- **Collaborative robotic arms** for adaptive industrial automation.
- **Multi-terrain mobile fleet,** including quadruped robots, **UGVs**, and **Aerial drones**.
- **Advanced digital twin platforms** for high-fidelity system simulation.

This environment enables safe testing, rapid iteration, and production-grade delivery.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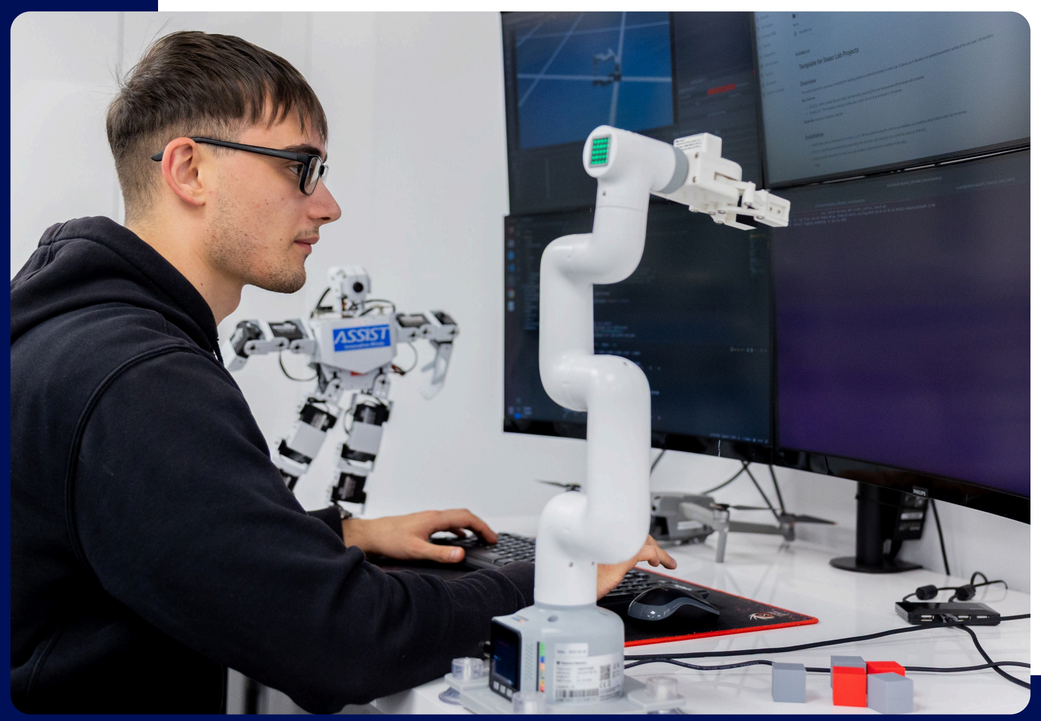

ASSIST

Security, Standards & Trust

ISO 42001-Aligned AI Governance

Our AI systems follow ISO 42001 principles to ensure:

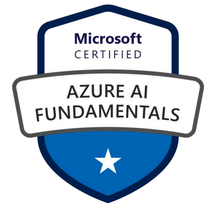
- Transparent and explainable AI behavior
- Accountable model lifecycle management
- Audit-ready governance from design to deployment

Enterprise Engineering Standards

Security, reliability, and compliance are enforced at system level, not added later.

Certifications & Credibility

- ISO 42001 – AI Management System alignment
- 30+ years of software engineering experience
- Proven delivery in regulated and high-impact environments



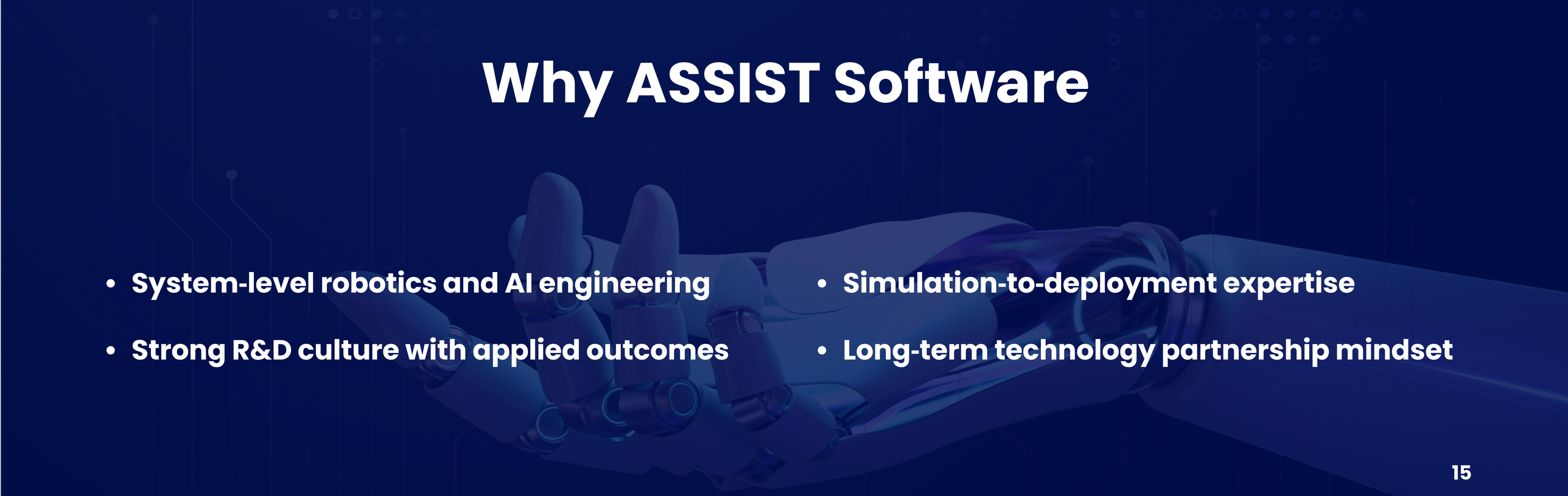
Who We Work With

Industrial and robotics R&D teams

Companies deploying AI on real hardware

Organizations requiring validated, production-ready systems

Why ASSIST Software



- **System-level robotics and AI engineering**
- **Strong R&D culture with applied outcomes**
- **Simulation-to-deployment expertise**
- **Long-term technology partnership mindset**

Great Place To Work®

Certified

JUL 2025-JUL 2026

ROMANIA ™

1st Place

Romania Top Profit 2023

Top for Romania, field 7219: Research and development in other natural sciences and engineering.

2nd Place

Top National Companies 2023

In Research, Development and High Tech

3rd Place

Top National Companies 2024

Large Companies: Research, Development & High Tech

- Architect Your **Physical AI** Strategy
- From Simulation to **Production**: Deploy Physical AI
- **Co-Innovate**: Join our 2026 R&D Roadmap

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Find out more