

LLM

LLMs Evolve from Text Generators into Intelligent Work Agents

- **High-Level Security & Data Privacy Protection:** Ensures end-to-end data privacy with strict access control, encryption, and secure architecture, preventing unauthorized access and data leakage for safe enterprise AI deployment.
- **Operational Efficiency & Knowledge Integration Acceleration:** Reduces manual effort by up to 70% through automation, while accelerating knowledge base integration to improve efficiency, scalability, and system performance.



The Advantech MIC-743 delivers a powerful edge AI platform for on-premises LLM applications in manufacturing, banking, and government sectors where data privacy is critical. Powered by NVIDIA Jetson, the system enables enterprises to deploy secure AI assistants, knowledge retrieval, document analysis, and Agentic AI workflows entirely within local infrastructure. By keeping sensitive data on-premises, organizations can meet security and compliance requirements while improving productivity, accelerating decision-making, and reducing reliance on cloud-based AI services.

System Diagram



AMR & Cobot

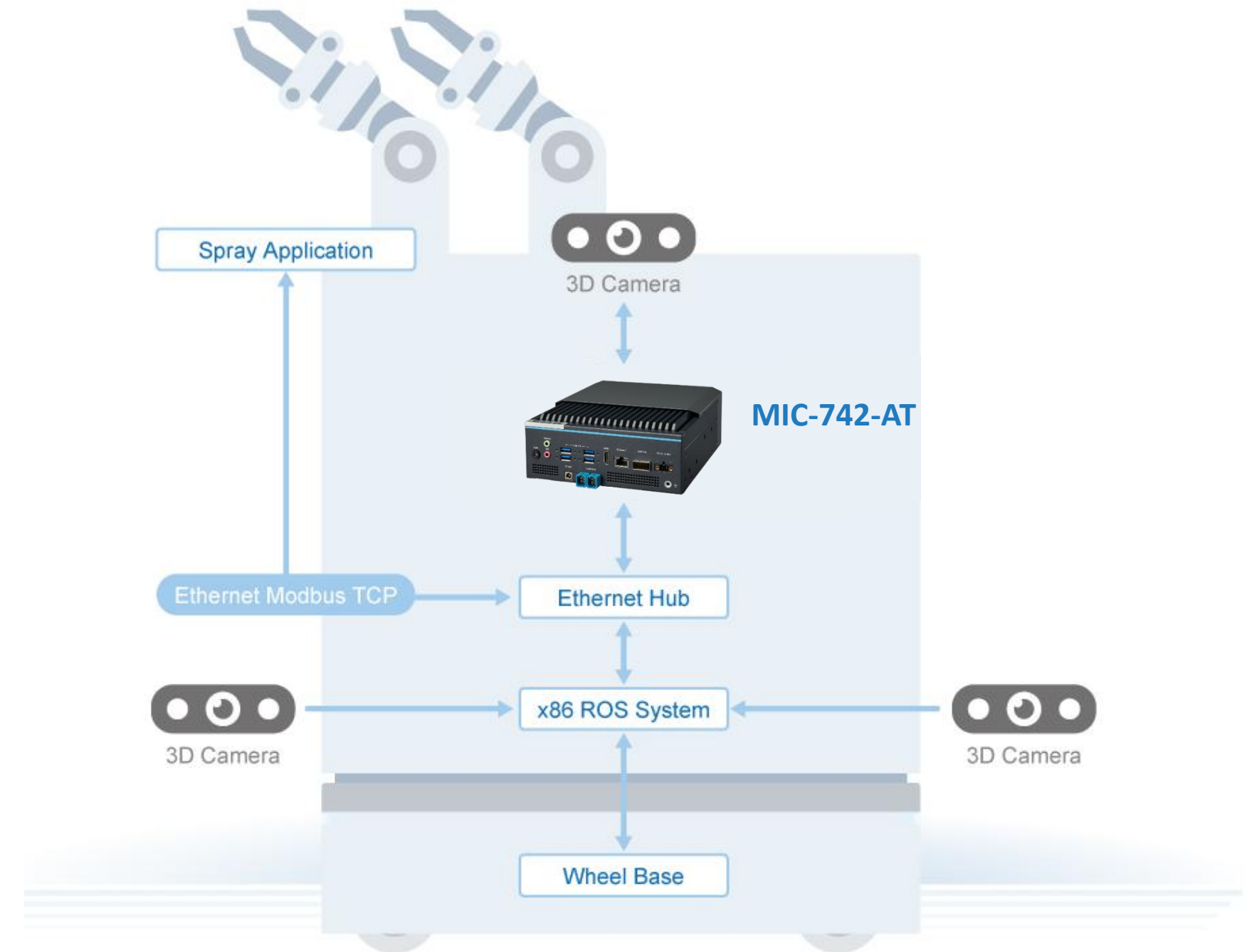
Smart AMR Disinfection Covers Duties of 4 Staff Members of Hospital Night Shift

- Enhanced Data Security: Processing sensitive information locally reduces the risk of data exposure or attacks during transmission to cloud servers, ensuring critical data remains within the device.
- Reduced Latency: Local data processing eliminates the need to send data to remote cloud servers, enabling real-time decision-making and responsiveness, which is crucial for applications like autonomous vehicles and industrial automation.



AI-powered Autonomous Mobile Robot (AMR) for disinfection is transforming hospital night shifts. The AI-driven C-Rob AMR autonomously navigates and disinfects hospital environments, performing the duties of 4–6 staff members per night. This innovation addresses labor shortages, enhances disinfection efficiency, and ensures consistent cleaning quality. By using AI to optimize disinfection strategies and adapt to different hospital zones, the AMR reduces infection risks while maintaining high hygiene standards. The solution exemplifies how AI and robotics can improve healthcare operations and alleviate staff workloads.

System Diagram



Humanoid Robot Functional Safety via HSB



Challenge:

Ensuring real-time obstacle avoidance and function safety in unstructured humanoid robot collaborative environments

Solution:

Integrating GMSL RGB and RGBD cameras via HSB on MIC-735-IT with GPUDirect RDMA technology for high speed sensor fusion

Result:

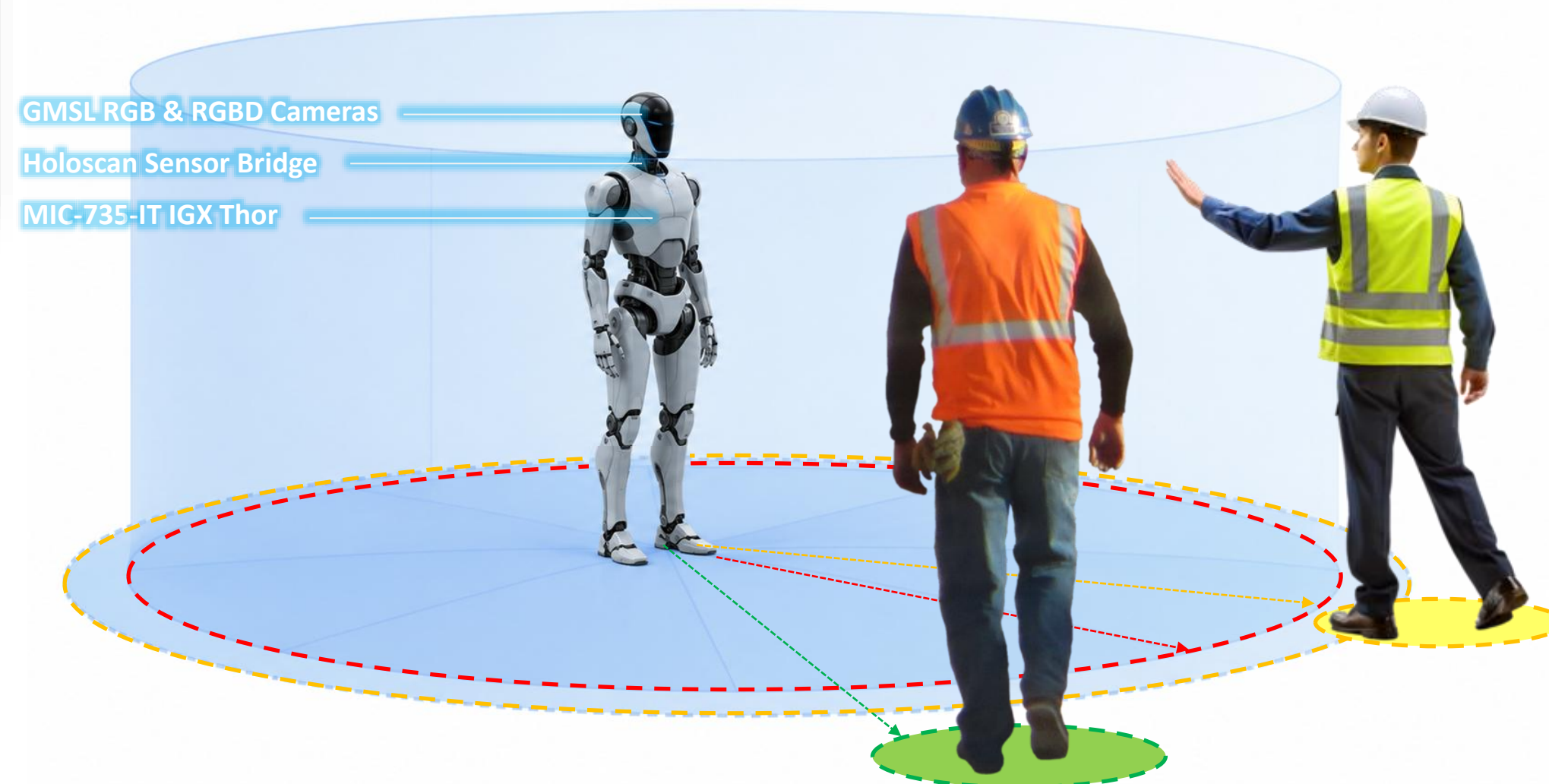
Achieved IEC 61508 SIL2 FuSa compliance with ultra-low latency sensor processing and accurate surrounding zone human detection

System:

- MIC-735-IT Jetson Thor T5000
- MIC-FG-HSB & MIC-FG-8G

System Diagram

1. GMSL RGB and RGBD camera integration via Holoscan Sensor Bridge (HSB)
2. IGX Thor provides superior AI computing and isolated Functional Safety Island (FSI)
3. FuSa-Ready MIC-735-IT achieves IEC 61508 SIL2 with FMEDA report



Transportation

Video Search and Summarization (VSS)

On Thor



The NVIDIA AI Blueprint for Video Search and Summarization (VSS) empowers Vision AI Agents to understand and analyze large-scale video data from traffic cameras and surveillance systems. It enables intelligent transportation applications, including real-time traffic monitoring, vehicle behavior analysis, incident detection, and infrastructure optimization. By converting video streams into actionable insights, VSS helps cities and transportation operators achieve safer, smarter, and more efficient mobility.

System:

- MIC-743-AT

The platform requirement can vary depending on the configuration and deployment topology used for VSS and dependencies like VLM, LLM, etc.

System Diagram

