

ACE Systemtek Advances AI-Powered Smart Manufacturing with UR Collaborative Robots

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ACE Systemtek and ITRI have established a strategic collaboration to jointly develop smart manufacturing solutions.

Photo (from left to right): Lance Yang, Project Manager at ACE Systemtek ; Sammy Chen, Manager at ITRI's Intelligent Machinery Technology Center.

Hsinchu, Taiwan, June 10, 2025 — As industries face growing labor shortages, collaborative robots (cobots) that can safely work alongside humans have become an essential tool in modern manufacturing. ACE Systemtek (ACE Group) continues to advance the integration of AI-powered cobots and smart manufacturing technologies. In a recent collaboration with the Intelligent Machinery Technology Center of ITRI, ACE Systemtek introduced innovative technologies into a smart factory demonstration site. This includes the deployment of Universal Robots (UR) cobots and the newly launched 2025 AI Accelerator Platform to co-develop a range of intelligent manufacturing solutions, enabling enterprises to build more flexible, efficient, and intelligent production lines.

UR cobots support payloads from 3 to 35 kilograms with a precision range of 0.03 to 0.10 mm, making them ideal for tasks such as assembly, screwdriving, and quality inspection. When paired with the AI Accelerator Platform—which integrates UR's next-generation PolyScope X software, NVIDIA Jetson AGX Orin™ modules, and the NVIDIA Isaac™ SDK and AI models—the system can leverage 3D vision to perform pose estimation, object tracking, image classification, quality inspection, motion planning, and status monitoring, unlocking new levels of intelligence and adaptability.

Lance Yang, Project Manager at ACE Systemtek, stated, "Taiwan's electronics and semiconductor sectors are seeing rising demand for robotic loading/unloading, precision pick-and-place, and assembly tasks. Safe human-robot collaboration is more important than ever. By combining collaborative robots with AI vision and digital twin simulation, we can equip robots with 'eyes' and a 'brain,' enabling production lines to transition from automation to intelligent systems with greater efficiency and precision."

Looking ahead, the integration of digital twin technologies with immersive interactive services will further enhance the responsiveness of production systems to changing orders, increasing flexibility and throughput. These technologies can also be extended to collaborative and autonomous mobile robots (AMRs) for advanced path planning, simulation, and real-time monitoring—strengthening overall operational resilience.

With over two decades of expertise in system integration, ACE Systemtek specializes in combining solutions across wireless communications, semiconductor testing, and high-speed digital transmission. The company integrates precision instruments, UR cobots, MiR AMRs, custom test fixtures, and control software to help clients build intelligent production lines, improve yield, and optimize manpower allocation. Through this collaboration with ITRI, ACE Systemtek will continue to explore new applications at the intersection of AI and robotics—accelerating the adoption of smart manufacturing and injecting fresh momentum into Taiwan’s industrial innovation.



Demonstration of a UR collaborative robot equipped with the AI Accelerator platform.

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About ACE Systemtek Co., Ltd

ACE Systemtek Co., Ltd. (formerly ACE Rentek Co., Ltd.) offers complete integration solutions across wireless and mobile communications, semiconductors, high-speed digital transmission, and optical communication. Services include hardware instruments, customized jigs, accessories, shielding enclosures, intelligent automation tools (such as robotic arms and AMRs), and tailored software for automated production testing.

Committed to delivering quality system integration and flexible services, we offer leasing and purchasing options—including short- and long-term rentals and installment plans—to help clients optimize equipment utilization while minimizing costs and risks. As technology advances, ACE Systemtek remains a trusted partner in system integration.