Ocado Storage and Retrieval System, the Fastest, Densest Cubic Storage Technology Available for Fulfillment

With 33% more vertical storage capacity per floor than other leading cubic automated storage and retrieval systems (AS/RS), the Ocado Storage and Retrieval System (OSRS) grid can stack storage bins up to 21 bins high, equating to 7.6 meters high in a 10.5-meter or above warehouse. The OSRS can store inventory within different temperature zones and reduce, or better leverage, the warehouse footprint and fixed costs. See it in action in this video.

The OSRS is a robot-on-grid, ultra-high-density cubic AS/RS that simplifies and streamlines modern supply chains to minimize costs and maximize productivity. The advanced automation solution from Ocado Intelligent Automation (OIA) uses hardware and software technology borne from the Ocado Smart Platform (OSP) – a robust system that can automate the whole grocery value chain from end-to-end. The OSRS is available to healthcare, retail apparel and footwear, consumer packaged goods and third-party logistics, among other industry verticals, to advance their end-to-end fulfillment.

Exceptional Vertical Storage Capacity and Density
The OSRS employs a lightweight grid structure that supports market-leading bin storage capacity and density in multiple configurations to maximize space utilization and optimize warehouse footprint costs. The flexible and durable bin storage system accommodates single or multiple stock-keeping units (SKUs) and can be mixed to offer flexible storage options based on the inventory profile. Available for seismic and cold storage, the grid can chill large areas consistently to store temperature-sensitive items.

Unrivaled Product Protection for High-Value Items
Selecting a storage solution with suboptimal bin specifications can drive unexpected costs –

from inefficient warehouse usage to building code compliance and insurance expenses. Made from galvanized steel, OIA's metal bins are fireproof and an industry-first, lowering fire risk and insurance premiums. The OSRS can store metal and plastic bins within the same grid.

Light, Efficient, High-Speed Robots Maneuver Bins
Featuring an ultra-light robot frame, the system allows for a lower-cost grid while reducing long-term wear and tear. Robots work efficiently to automate and accelerate bin fetching and drop-offs to human-assist pick stations or fully automated robotic pick arms.

Robotic arms swap batteries to provide high-capacity, high-speed battery exchange and charging for maximum robot uptime and availability. The battery swap station uplifts robot fleet utilization by 8% compared to traditional charging docks.

Patented, single-grid cell footprint design allows robots to pass each other unobstructed, reduce bot fleet congestion, follow optimized route plans and ensure high availability and stock access.

- Built using additive manufacturing technology, the robots have a strong carbon fiber frame for durability as well as speed.
- Additive manufacturing (3D printing) and carbon fiber construction drive 39% energy savings, quicker maintenance and a safer system for customers.

OCADEX robotic pick arms mounted on top of the OSRS prepare orders directly from the grid to achieve high throughput from existing sites without requiring additional warehouse footprint. Using advanced sensors and computer vision, the robotic pick arms identify, pick, pack and organize items, removing the need for manual workstations. Artificial intelligence (AI) and behavioural cloning train the robotic arms to handle new, potentially delicate items and prevent damage.

- 24/7 automated robot picking provides continual operation and productivity enhancements.
- Up to 99% labor savings reduce costs while addressing fluctuating labor challenges.
- Up to 630 units picked per hour by a single robotic arm achieves maximum warehouse throughput, with up to seven orders processed simultaneously.

Intelligent Orchestration Replaces Costly, Complex Secondary Systems
The Warehouse Execution System (WES) embedded in the OSRS uses advanced algorithms and live operational data to orchestrate and optimize storage density, streamline processes, and maximize assets. At the same time, the OSRS employs a series of intelligent features that drive system efficiencies.

The system automatically self-sorts bins to prioritize order, speed and position, placing faster-moving SKUs at the top of the grid. The pick-and-store capability separates picking from outbound orders and temporary stores outbound completed orders back into the grid. The WES intelligently orchestrates the subsequent outbound flow to reduce complexity and suit warehouses' up and downstream operations.

Scalable to Meet Changing Requirements and Demand
The scalable and modular OSRS platform supports easy system expansion in greenfield or brownfield sites to meet rapidly changing business requirements and customer demand. The

modular design allows for quick and easy installation into any size or shape facility and in multiple thermal zones.

 Visit Ocado-IA.com for more information.

About Ocado Intelligent Automation
Ocado Intelligent Automation (OIA) is a division of Ocado Group, a U.K.-based technology company publicly traded on the London Stock Exchange (OCDO). Ocado Intelligent Automation was created to deliver proprietary, world-class systems and solutions developed and acquired by Ocado to non-grocery business segments looking to transform the supply chain order fulfillment process with a comprehensive technology partner. The company is co-located in San Francisco and Toronto.

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