Artificial intelligence in warehouse management: governing automated slotting and wave planning

Artificial intelligence in warehouse management may help teams adjust slotting, wave plans or labour allocation as demand and constraints change. These decisions influence travel, replenishment, congestion, service and local workload. Automation needs to respect the facility's operating rules and preserve supervisor authority when a proposed change falls outside the agreed envelope.

What changes when a plan is dynamic

A slotting recommendation can depend on product velocity, size, compatibility, replenishment effort, location limits and current workload. Wave planning can also interact with dock capacity, carrier cut-off times, labour availability, priority orders and downstream packing constraints. A plan built on incomplete or stale information may create a bottleneck elsewhere in the warehouse.

AI can help identify patterns and propose a revised arrangement or sequence. Operations should be able to see the relevant evidence, the constraints checked and the expected trade-offs. The proposal should remain a proposal until the authorised person approves it or a clearly bounded policy allows it to proceed.

Set practical guardrails

Define which zones, SKUs and time windows are in scope. Protect safety, compatibility, inventory status, replenishment capacity, labour rules and customer cut-offs. Specify whether the workflow may change an existing wave, create a new one or only recommend a change. Set limits on the number or scale of affected tasks and identify cases that require a supervisor or other owner.

Test edge cases: a product on quality hold, a sudden carrier cut-off change, a replenishment shortage, labour constraints and a failed WMS update. If the WMS rejects the instruction, the workflow should capture that response and route the exception rather than assume execution succeeded.

Learn from operating outcomes

Measure pick time, replenishment work, wave completion, congestion, service impact, overrides and rework where these are relevant and available. Compare the new workflow with a defined baseline. Do not attribute every warehouse change to AI if labour, order mix or facility conditions also changed.

Where Aidecis fits

Aidecis keeps one authority model and one decision record across your people, your own algorithms and every vendor’s agents. Aidecis never writes into your systems: your people, systems or bots execute the approved action, and Aidecis reads each execution back and reconciles it against the approval, so SAP stays your single source of truth. With enforced control, your own integration checks Aidecis's single-use grant before it executes. Agents and algorithms that write in their own systems are checked against their registered role and limits afterwards, and flagged within minutes if they went outside them: observed control, which does not prevent an action but shows it. A WMS slotting or wave optimiser keeps its logic and is governed as one more actor; Aidecis does not replace a WMS or create a universal slotting optimiser. A pilot should confirm the facility data, decision boundary, approval path and execution interface.

Explore Aidecis use cases and discuss a pilot.

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