v3.3.0-8

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🚀•New Features

(No new features for this release)

📊 Feature Improvements

Enhanced Charging Process

The charging process has been enhanced for better fleet management, depending on whether the auto-charging feature is enabled or disabled:

- With auto-charging enabled:
  - Individual AMR charge is disabled to avoid interference with the auto-charging
  - The global AMR **Charge** button is also disabled but can be enabled by setting the Minimum Fleet Availability (MFA) value to 0% on the Fleet management page.

WMS Interface Overview

The Warehouse Management System (WMS) interface helps your warehouse interact with A-AMR software. The sections below explains some of the key features:

Integration with A-AMR

The WMS interface provides user APIs for connecting with software. This integration requires setting up the interface and making some modifications to the WMS. It enables communication and coordination between the systems.

The following figure describes WMS interactions with external components.

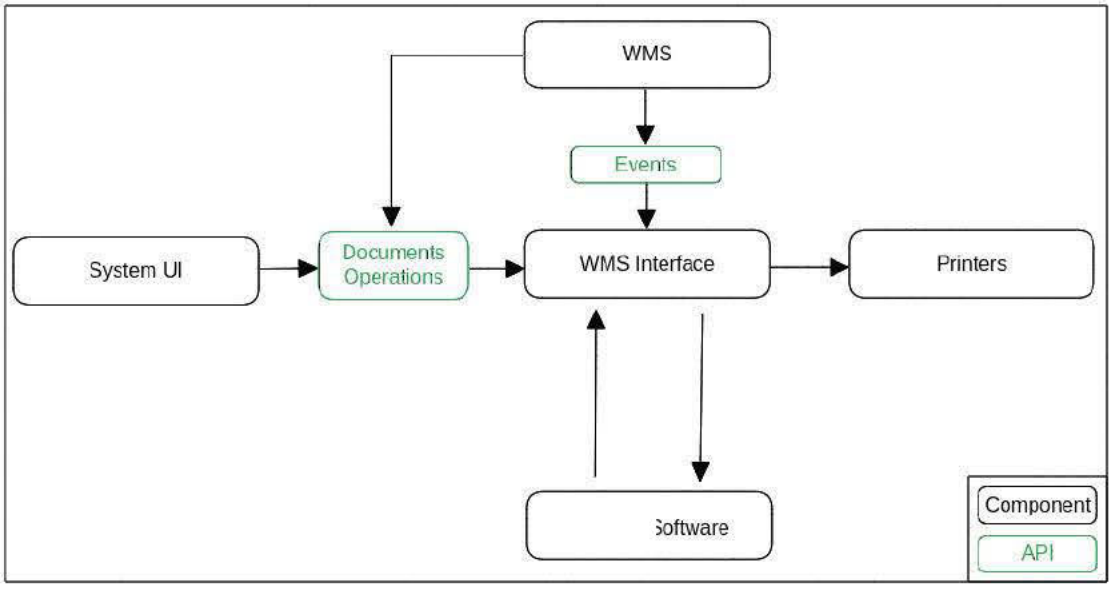

Figure: WMS interface overview

Managing Totes and Products

The WMS interface allows for the registration of various types of totes and products. This feature helps in organizing and managing inventory more efficiently.

Hardware Overview

The system provides multiple options for AMR hardware models, including Gen2 (discontinued), Gen3/Gen3.1, Gen3 XL, and Gen3 XXL. Each AMR shares a common set of features, such as a barcode scanner and a touchscreen, which allow interaction with the AMR and improve user experience. The table below highlights the differences in hardware specifications for each model. For detailed information, refer to the AMR Hardware section.

Table: AMR hardware overview

Specification	Gen2 (Discontinued)	Gen3/Gen3.1	Gen3 XL	Gen3 XXL/Gen3.1 XXL
AMR picture				
Tray dimensions		nm (w) 3mm (d)	610mm (d)	
Extended tray dimensions		available	700mm (d)	
Tote maximum volume per tray			75L	

CSV Upload via API

Uploading a CSV document through APIs is done in three steps:

- CSV document upload : Passing the CSV file to WMS interface
- CSV upload progress check : Monitoring the upload status to detect completion
- Error Inspection : Inspect upload errors to correct the CSV file

CSV Document Upload via API

Tote types, Totes, Products, Picking orders, and Induction orders can be uploaded via `{base_url}/v1/doc` API. This endpoint returns an object of type **Operation** , which represents the process of applying the CSV contents to the system. The operation objects contain an ID field that corresponds to the **operation ID** of the document upload.

While uploading a document through `{base_url}/v1/ d` endpoints, the parameters described in the following table can be passed:

Table: {base_url}/v1/documents/upload API parameters

Parameter name	Description	Type	Required	Default
`document`	File containing records in CSV format	Binary	Yes	NA
`kind`	The kind of records contained in the document	Possible values are: - `PIC s` - `PRO` - `TOT` - `TOT` - `INDU S`	Yes	NA
`fail_fast`	Reject full file option .	Boolean	No	FALSE

CSV File Default Formats

This section describes the CSV file default formats for Tote types, Totes, Products and Picking orders.

Tote Types CSV Format

The following table describes the fields that can be passed in Tote types CSV format:

Table: Tote types CSV default format

CSV column name	Description	Type	Range	Unique	Required
Tote type ID	ID		1	Yes [1]	Yes [3]
Tote type name	Na			No [2]	Yes
Maximum volume fill ratio	Maximum proportion of the tote v can be us	Number	0 to 1	No	Yes* [4]
Maximum weight	Maximum can be fill				:s
Tote type width	Width of t				:s*
Tote type height	Height of				:s*

Hardware Chargers

All AMR hardware can use two types of chargers described in the following table. Specifically, Gen3 is compatible with standard chargers, while is optimized for fast chargers.

Table: Hardware chargers

Charger Specifications	Standard Charger	Fast Charger
Charger picture		
Model	ENC	00C-24
Input AC Voltage (V)	100~240	100~240
Input AC Current (A)	~4.	VAC)
Output DC Voltage (V)	18~	28.6)
Output Current (A)	~12	21)
Output Power (W)	~360	~750

Congestion Avoidance

In some situations, multiple AMRs sent to the same or nearby pick location can lead to congestion (usually between shelves). This congestion can slow down the AMR's speed or even obstruct the pathway for other pickers/AMRs.

To address this challenge, a feature known as *congestion avoidance* can be employed. This feature can be enabled/disabled based on the customer's configuration.

- To understand how congestion avoidance works, consider the illustration below where two AMRs, `AMR 01` and `AMR 02` , have pick locations labeled `A` and `B` . `AMR 02` picks from location `B` . `AMR 01` would like to pick from location `B` because it is nearby but knows that location `B` is already crowded and decides to go to location `A` instead, avoiding congestion.
- If the two pick locations `A` and `B` are equally close, the picks will be made in a sequential order, one after the other.

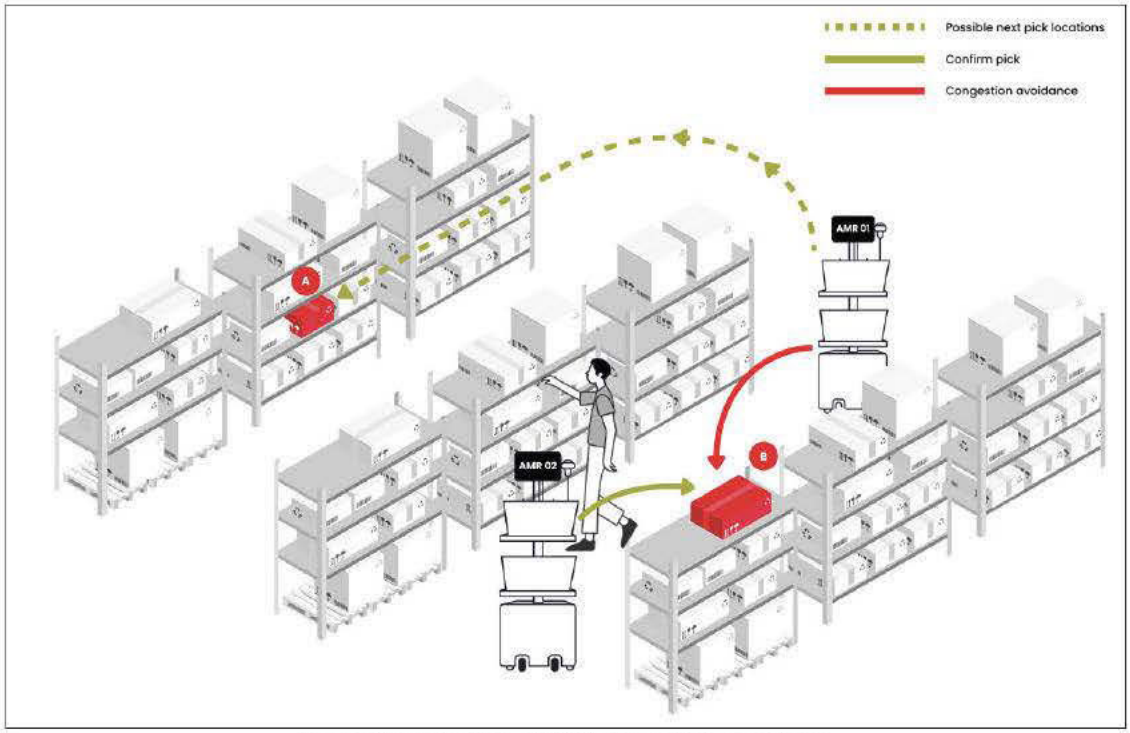

Figure: Visualization of AMR congestion avoidance