# Requirements

## Inventory Module – ARM Analysis

### A – Actors

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| --- | --- |
| Actor | Description |
| Store Employee | Walks around and checks shelves, marks missing or expired/damaged items |
| Inventory Manager | Adds new products, sets minimum thresholds, views reports |
| System | Automatically triggers alerts and manages data in-memory |

### R – Requirements

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| ID | Module | Type | Description | Priority | Status | Risk |
| INV1 | Inventory | Functional | The system MUST allow adding new inventory items with full metadata (manufacturer, location, category, pricing) | Must | Planned | Low |
| INV2 | Inventory | Functional | The system MUST support updating quantities of existing items | Must | Planned | Low |
| INV3 | Inventory | Functional | The system MUST allow the user to view a list of all items in stock, including their name, manufacturer, current quantity, shelf quantity, backroom quantity, and category. | Nice to have | Planned | Low |
| INV4 | Inventory | Functional | The system MUST generate alerts when item quantity drops below its minimum threshold (item-specific) | Must | Planned | Medium |
| INV5 | Inventory | Functional | The system MUST track damaged or expired items using status fields (e.g., DAMAGED, EXPIRED). | Nice to have | Planned | Low |
| INV6 | Inventory | Functional | The system SHOULD allow registering and applying discounts by item or category and date ranges | Nice to have | Planned | Low |
| INV7 | Inventory | Functional | The system MUST support generating stock reports filtered by category and status fields (see req. 5) | Must | Planned | Low |
| INV8 | Inventory | Functional | The system MUST store categories in a 3-level hierarchy (Category > Sub-category > Size) | Nice to have | Planned | Low |
| INV9 | Inventory | Non-Functional | All data MUST be stored in-memory and reset upon restart | Must | Planned | Low |
| INV10 | Inventory | Functional | The system MUST store and allow viewing of each item's purchase price and sale price. | Nice to have | Planned | Low |
| INV11 | Inventory | Functional | The system MUST automatically place orders when inventory falls below minimum threshold | Must | Implemented | High |
| INV12 | Inventory | Functional | The system MUST retrieve supplier data and choose the supplier with the lowest price per item | Must | Implemented | Medium |
| INV13 | Inventory | Functional | The system MUST support scheduling periodic orders based on defined supplier delivery days | Must | Implemented | Medium-High |
| INV14 | Inventory | Functional | The system MUST update inventory quantities automatically upon supplier delivery | Must | Implemented | Medium |

## Cross-Module Requirements

- SUP1: SupplierService MUST expose pricing information for all supplier items (Must).

- SUP2: SupplierService MUST support delivery notifications with itemID and quantity (Must).

## Summary of Requirement Changes

- Added requirements INV11–INV14 based on new automation and supplier module functionality.

- No requirements were removed.

## Glossary

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| Term | Definition |
| Order | A request made by the system to a supplier for inventory replenishment |
| Periodic Order | A recurring order tied to a specific delivery day |
| Supplier | External entity that provides inventory |
| Delivery | The act of a supplier sending ordered goods to the company |
| Minimum Threshold | A quantity level that triggers reorder logic |
| Timer | A background system trigger used for automated checks (daily) |

## System Assumptions

- Inventory quantities are updated immediately after delivery confirmation.

- Periodic orders are triggered based on a reliable day-of-week schedule.

- Item IDs used in orders are assumed valid and mapped correctly in both modules.