

## Functional Requirements Document (FRD)

### 1. Overview

The system is a multi-tenant, phase-based product tracking and processing platform.

It allows an admin to design workflows (phases), create phase head/user profiles, dynamically define product forms, and manage items as they move forward or backward in the workflow. Bulk operations, returns, real-time dashboards, and historical tracking are included.

## Functional Specification – Item Lifecycle & Bulk Operations

### 1. What is an Item

- An **Item** = a single physical or logical unit of a product/order in the workflow.
- Each item:
  - Belongs to **exactly one tenant**
  - Belongs to **exactly one phase at a time**
  - Can have:
    - **Unique Tracking ID** (e.g., 000123) → *ID-based tracking*
    - **No Tracking ID** → *Count-based tracking*
- Items are processed **sequentially forward** or **non-sequentially backward** (returns).

### 2. What is Bulk

- **Bulk** = Group of items **within a specific phase** at a given moment.
- Bulk changes dynamically when items are sent/received.
- Bulk types:
  - **Count-based bulk** → Only quantity is tracked (no unique IDs per item).
  - **ID-based bulk** → Each item has a unique ID; movement operations require list of IDs.

### 3. Bulk Example

**Phases:** Kora → Phase 1 → Phase 2 → Phase 3

Phase	Action	Bulk Before	Bulk After
Kora	Receive 1000 items	0	1000
Kora → P1	Send 100 items	1000	900
Phase 1	Receive 100 items	0	100
Phase 1 → P2	Send 40 items	100	60
Phase 2	Receive 40 items	0	40

### 4. Operations per Phase

At any phase, a user can:

#### Receiving Items

- Receive items **in bulk** or **single**
- Data needed:

- count (for count-based bulk) OR ids (for ID-based bulk)
- fromPhaseId
- Optional note

### **Sending Items Forward**

- Move items to **next sequential phase**
- Can send **partial or full bulk**
- Data needed:
  - count or ids
  - toPhaseId (must be next in sequence)

### **Returning Items Backward**

- Move items to **previous non-sequential phase** (via return request)
- Requires approval by receiving phase
- Data needed:
  - count or ids
  - toPhaseId
  - reason

### **Dashboard Viewing**

- View status of **all phases** for current tenant
- Info per phase:
  - Phase name
  - Item type
  - Number of items
  - Other metadata (dates, images, etc.)

## **5. Item Lifecycle Flow**

1. **Create Item** (Kora phase only)
  - Assign **Global Tracking ID** (6-digit, zero-padded, human-readable)
  - Add optional metadata (formData, images)
2. **Bulk Add / Bulk Remove**
  - Add items from CSV/manual input
  - Remove items from bulk
3. **Move Forward**
  - Send to next phase
4. **Return Request**
  - Request to send backward to a previous phase
  - Approval required by destination phase
5. **Return Approval/Rejection**
  - Destination phase user accepts/rejects request
6. **History Logging**

- Every action is logged:
  - Timestamp
  - Phase name
  - User
  - Action type
  - Count or IDs moved

7. Completion

- Items in last phase are marked **COMPLETED**

6. APIs Needed (Draft List)

Item Management

Operation	Method	Endpoint	Auth Role
Create Item	POST	/items	PHASE_USER
Bulk Add Items	POST	/items/bulk-add	PHASE_USER
Bulk Remove Items	POST	/items/bulk-remove	PHASE_USER
Move Forward	POST	/items/move-forward	PHASE_USER
Request Return	POST	/items/return-request	PHASE_USER
Approve Return	POST	/items/return-approve/:id	PHASE_USER
Reject Return	POST	/items/return-reject/:id	PHASE_USER
View Dashboard	GET	/items/dashboard	ANY_USER
Get Item History	GET	/items/:id/history	ANY_USER