**Introduction**

* **Project Name:** Vessel Seal tracking
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* **Verified By:** Yolla JAHJAH, Nader HJAZI
* **Date:** 21 July 2025

**2. Purpose**

This document outlines the business requirements for “Vessel Seal tracking” module. The purpose is to ensure that all stakeholders have a clear understanding of the needs and expectations for the project.

**3. Scope**

* **In Scope:** The IT solution aims to enhance the operational efficiency and security of the container terminal by automating the tracking of seals used on containers, managing inventory, and calculating the total value of the seals and associated assets. This solution ensures that all seals are accounted for, improves asset traceability, and provides a streamlined process for monitoring seal inventory used for vessel operations and its financial impact.
* **Out of Scope:** This solution will not include the streamline of purchase requisitions and procurement process of managing the seals inventory with needed full approval cycle. It covers only the monitoring of the used seals for vessel operations, their quantities and related consumption and financial reports.

**4. Stakeholders**

* **Primary Stakeholders:**
  + Operations and Planning Department
* **Secondary Stakeholders:**
  + Finance Department
* ***Additional Stakeholders:***
* Vessel Supervisors and clerks: Acknowledge receipt/return of seals.
* System Administrators: Oversee user roles and access control.
* Operations Internal Audit Team: Use log data for compliance checks.

**5. Business Objectives**

* **Objective 1: Seal Consumption History:** The system will store a history of each seal's usage for vessel operations, providing an audit trail for accountability and historical analysis. The data will include the series of the the seals (Seal Numbers by series or by default item) and the total quantities per vessel voyage.
* **Objective 2: Replenishment and Procurement:** The solution will generate a report which will assist end-user in planning department to identify remaining stock or a low stock and help in the procurement process, ensuring that seals are always available when needed.
* **Objective 3: Value Calculation:**
  + **Total Asset Value:** The system will calculate the total value of all seals in use, based on the number of seals and their individual values, and provide ongoing updates as seals are issued or replaced.
  + **Cost Allocation:** It will be able to allocate costs based on container types, routes, or specific business units, helping the terminal track operational expenses related to seal usage.
* ***Objective 4: User-Friendly Interface for Accurate Tracking:***
* The system will feature a structured interface that enables planners to clearly input seal ranges, track individual seal status (returned, damaged, or lost), and attach supervisor information. This improves accountability and minimizes entry errors.

**6. Functional Requirements**

**User Input Form:**

* Seals in Planning Stock:
  + Seal Numbers (user to be able to register received amount by series, from to), Ex: 5229996 to 5230005 = 10 seals
  + Quantity Received

Note: Planning team used to receive around 20 boxes approximate average, from the store, each box contains 200 seals (200 seals per box).

* Seal Entry:
* Field to enter serial range (From - To) with auto-calculated quantity.
* Field for entering a single seal number.
* "Update"(to submit) and "Clear"(to reset fields) buttons for form actions.
* Dropdown to select Vessel Supervisor from database.
* **Vessel Details:**
* *Vessel Name/ID*
* *Quantity delivered for Vessel (to be deducted from stock)*
* *User to be able to register batch (from to) & or single seal number*
* *Quantity received after vessel departure (to be added back to stock)*
* *Quantity of received damage seal if any (not to be counted in the returned amount)*
* *Quantity of Lost seal per vessel (if any)*
* ***Seal Return Breakdown:***
* *Returned, Damaged, and Lost Seals:*
  + *Separate sections for:*
  + *Returned Seals*
* *Damaged Seals*
* *Lost Seals*
  + *Each includes:*
    - *Text area for serials*
    - *Count field for quantity*
  + *Ensures transparent post-operation reconciliation.*

*Note: Damaged and Lost seals should not be added back to inventory****.***

* **Inventory Deduction Logic:**
  + Automatically deduct the quantity needed for the vessel from the total received amount.
  + Automatically add the returned amount after vessel departure (exclude Damage & Lost Amount)
* **Reporting/Tracking:**
  + Provide an overview of current inventory status. (Delivered/ Received/ Damage & Lost)
  + Record historical deductions per vessel for accountability.
  + Seal History Log: Each seal will have a read-only usage history including assigned vessel, date used, return status, and the user responsible for updates.
* **User Roles/Permissions:**
  + Define user roles (to be confirmed by [Nader HIJAZI](mailto:n.hijazi@cma-beirut.com) and Yolla JAHJAH)
  + User Role Logging:
  + Automatically records which user (planner) performed each action.
  + Enables full traceability and audit readiness.
  + Supervisor Selection:
  + Dropdown field to select vessel supervisor from database.
  + Required for assigning responsibility for seal receipt and return.
* **Notifications/Alerts:**
  + Set up alerts when quantities fall below a certain threshold or if a vessel requires more than whats available.
  + Set up alert for **duplicate** **used seal number**: A notification should be triggered when a user inserts a seal number that has already been used.
  + Set up alert for **Inventory** **Post-Vessel Completion**: After the vessel has finished its operation, a notification should be generated when the user receives and updates the seals, indicating whether all seals have been successfully processed or if there are any issues.

**7. Non-Functional Requirements**

* **Security:** **Data Security:** The system will implement role-based access control to ensure that sensitive data about seals and inventory is only accessible by authorized personnel.

*- All actions by planners and supervisors will be recorded and timestamped under their respective usernames for full audit trail tracking.*

* **Usability:**
  + **Real-Time Reporting:** Reports will be available for management to assess seal usage, inventory status, and overall costs. These reports will provide insights into inventory trends, cost-saving opportunities, and potential security issues.
  + Separate UI blocks will organize seal status input (returned, damaged, lost) to avoid confusion and support efficient entry.
* **User Interface and Interaction:**
  + The solution will feature an intuitive user interface that can be accessed via desktop, allowing staff at the terminal to easily register, scan, and verify seals in real time.
  + Users can quickly retrieve container and seal information and perform any required actions, such as reporting a missing seal or adjusting inventory levels.

**8. Assumptions and Constraints**

* **Assumptions:** Users to have access to intranet (Web application)
* **Constraints:** None

**9. Acceptance Criteria**

* Solution to meet all above mentioned demands.

**10. Glossary**

This IT solution will increase the accuracy of inventory tracking, reduce the likelihood of errors, and improve overall security by ensuring seals are tracked properly.

**11. Appendices**

* **Appendix A:** None

**12. Sign-Off**

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| --- | --- | --- |
| Stakeholder Name | Signature | Date |
| Jad RASSI | [Signature] | [Date] |
| Yolla JAHJAH | [Signature] | [Date] |
| Nader HIJAZI | [Signature] | [Date] |
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